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Investigating the Psychological mechanisms underlying the relationship between parenting stress and mental health among adolescent mothers in Zambia

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INVESTIGATING THE PSYCHOLOGICAL MECHANISMS UNDERLYING THE RELATIONSHIP BETWEEN PARENTING STRESS AND MENTAL HEALTH AMONG ADOLESCENT MOTHERS IN ZAMBIA

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PHD

LINGNAN UNIVERSITY

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by
NAKAZWE Kalunga Cindy

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ABSTRACT

Investigating the Psychological Mechanisms Underlying
the Relationship between Parenting Stress and
Mental Health among Adolescent Mothers in Zambia

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Adolescent motherhood has received insufficient research attention especially in low-and middle-income countries (LMICs). It increases physical and mental health burdens and is linked to premature death among young mothers and their children. Past research on adolescent mothers' mental health has mostly been conducted in higher-income countries. Moreover, relevant research has predominantly focused on the direct effects of parenting stress on adolescent mothers' mental health and overlooked possible mediating and moderating processes. The main aim of this research project was to examine the psychological mechanisms in the relationship between parenting stress and mental health among adolescent mothers in Zambia. The project employed a mixed method design and included three studies: A pilot survey study (Study 1), the main survey study (Study 2), and a qualitative study (Study 3). Study 1's objectives were to test validity and reliability of measures to be used in the main survey. A total of 129 adolescent mothers aged 14 – 19 years (M =18.08, SD = 1.08) in Lusaka-Zambia completed measures of parenting stress, mental distress (depression, anxiety, stress), positive affect, positive and negative religious coping, rumination, resilience, parental responsibility, and social support. The results supported the psychometric properties of all measures to be used in the main survey. Study 2's objectives were to test a hypothesized moderated mediation model in which the effects of parenting stress on adolescent mothers' mental health (positive affect and mental distress) are mediated by positive and negative religious coping and rumination, and whether these indirect effects are moderated by resilience, parental responsibility, and social support. A total of 571 adolescent mothers aged 13 to 19 years (M =18.21, SD = 0.94) in Lusaka-Zambia completed measures that were pilot tested in Study 1. The results of the moderated mediation analysis with structural equation modelling using Mplus indicated that the effects of parenting stress on positive affect and mental distress were fully mediated by

positive and negative religious coping and rumination. Additionally, the indirect effect of parenting stress on positive affect via rumination was moderated by parental responsibility. These findings support the protective roles of positive religious coping and parental responsibility in promoting higher positive affect and decreasing mental distress. Study 3's objectives were to triangulate the findings of the first two studies by examining adolescent mothers' in-depth lived experiences of parenting stress, coping mechanisms, and mental health. A total of 25 adolescent mothers aged 16 – 19 years (M =18.32, SD = .90) in Lusaka-Zambia were invited for face-to-face interviews. A phenomenological interpretive qualitative design was used. The data were analyzed using thematic content analysis in NVivo 12 plus. The results revealed that social support, religious coping, creativity, optimism, tolerance, and perseverance were resources used to cope with parenting stress, promote positive mental health and decrease mental distress. Taken together, findings from the three studies show that positive religious coping, parental responsibility, social support, creativity, optimism, tolerance, and perseverance play protective roles for adolescent mothers' mental health. The findings offer theoretical, practical, and policy implications for adolescent mothers' mental health especially in LMICs.

DECLARATION

I declare that this is an original work based primarily on my own research, and I warrant that all citations of previous research, published or unpublished, have been duly acknowledged.

SIGNED

(NAKAZWE Kalunga Cindy)
Date:

CERTIFICATE OF APPROVAL OF THESIS

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CHAPTER 1: INTRODUCTION

Adolescent motherhood deserves more research attention because it is still highly prevalent, it costs lives, and it comes at huge physical and mental health costs. With respect to high prevalence rates, statistics show that 18% of total births worldwide occur in young girls aged between 15 and 19 years (World Bank, 2020a). Globally, the average birth rate among girls in this age group stands at 46 births for every 1000 girls, whereas actual rates by countries range between 0.29 and 178 births for every 1000 girls (World Bank, 2020a). Generally, the rates are higher in developing regions than in developed regions (Darroch et al., 2016; Kirchengast, 2016; United Nations Fund for Population Activities, 2015). Specifically, around 12 million young girls in the age range above, and about 777,000 girls below the age of 15 deliver babies in developing nations every year (World Health Organization, 2020). Evidence shows that each year an estimated 10 million unplanned pregnancies occur among 15 to 19 year old adolescent girls (WHO, 2020). Of which a larger number is retained in developing nations (Darroch et al., 2016; Neal et al., 2012; UNFPA, 2015). Approximately 5.6 million girls of the same age range undergo abortions annually. Of which 3.9 million are unsafe abortions leading to maternal deaths, ill health, and enduring physical health conditions (WHO, 2020).

With respect to costing lives, complications arising during pregnancy, unsafe abortions, and during labour are the top most cause of death among young girls aged 15 to 19 worldwide (Darroch et al., 2016), with developing countries accounting for 99 percent of maternal deaths of females of this age group (World Health Organisation, 2016). Infant mortality is also higher in children of adolescent girls than adult women (Althabe et al., 2015; Cavazos-Rehg et al., 2015; Regina et al., 2019; Rexhepi et al., 2019; WHO, 2016). With respect to huge health costs, research shows that teenage mothers encounter greater physical health risks compared to women aged 20 to 24 years

(Ganchimeg et al., 2014; Rexhepi et al., 2019; Socolov et al., 2017). Most notably, adolescent mothers have a higher risk of suffering from psychological health issues including high levels of stress, mild or severe depression, nervousness, posttraumatic stress disorder, suicidal tendencies, temperament issues, concentration problems, appetite loss, and sleeping difficulties, than their older counterparts (Deal & Holt, 1998; East & Barber, 2014; Milan et al., 2004; Plotnick, 1992; Tam & Chung, 2007; Turkyilmaz & Hesapcioglu, 2019; Venkatesh et al., 2014; Zeiders et al., 2015).

For instance, evidence shows that adolescent mothers are at a higher risk for developing postpartum depression than their older counterparts, standing between 15% and 50% rates for adolescent mothers in comparison to an average of 10% for adult mothers worldwide (Hodgkinson et al., 2014; Ladores & Corcoran, 2019). The rates in High Income Countries (HIC) are estimated to be between 16% and 44% among adolescent mothers, and 5% to 20% for nonchild bearing adolescents and adult women (Hodgkinson et al., 2014; Kessler, 2003). The rates are even higher in low-and-middle-income countries (LMICs) ranging from approximately 21% to 53% for adolescent mothers compared to an estimated 20% to 35% in adult mothers (Baron et al., 2016; Mbawa et al., 2018; Mutahi et al., 2022; Tembo et al., 2022; Van Doorn et al., 2016).

Specifically, parenting stress is high in adolescent mothers than in their older counterparts (Emery et al., 2008; Hans & Thullen, 2009; Huang et al., 2014). Parenting stress refers to a state of stress which arises when demands associated with parenting roles exceed available resources and expectations (Hayes & Watson, 2013). Research shows that parenting stress is even higher in adolescents from disadvantaged backgrounds than those from well-off backgrounds (Cole, 2005; Coley & Chase-Lansdale, 1998; Jaffee, 2002; Maynard, 1995; World health Organisation, 2018). This

scenario is even worse for disadvantaged parenting adolescents in poorer countries (due to high levels of poverty), than their counterparts from high income countries (WHO, 2018).

Additionally, evidence suggests that younger girls risk suffering higher parental stress compared to older adolescent girls (Huang et al., 2019; Larson, 2004). And that those with younger infants risk suffering higher parental stress compared to the ones with older babies. Yet the infant's gender has rarely correlated with parenting stress (Larson, 2004). More importantly, evidence suggests that high stress from the parenting role in young mothers affects their mental health, as it leads to mental distress (Huang et al., 2014; Schetter & Tanner, 2012; Venkatesh et al., 2014). Mental health has been defined as "a state of whole mental well-being, and not simply the mere absence of disease or infirmity" (WHO, 2001, p.3). Mental health is usually treated as comprising two components: Positive, and negative mental health (Goldberg, 2000; WHO, 2001). Positive mental health is usually represented by constructs such as well-being, and positive affect. While negative mental health on the other hand, is usually represented by mental distress (an array of disturbing, unpleasant, confusing, or unusual experiences, such as, anxiety, hallucination, rage, depression, and many others) (Goldberg, 2000). See Chapter 3 – literature review, for details on these concepts.

Evidence continues to link high parenting stress to mental distress (Huang et al., 2014; Schetter & Tanner, 2012; Venkatesh et al., 2014). For instance, Huang et al. (2014) revealed that high parenting stress was linked to heightened maternal depression at six months follow up. Similarly, parental stress was implicated in the inception of depression both postpartum and sub threshold. Additionally, several studies show that stress (both acute and chronic) is independently, substantially, as well as positively

correlated with depression and other mental health problems, postpartum and beyond (Reid & Taylor, 2015).

Mental health problems could cause brief as well as prolonged devastating consequences on the young girls themselves, as well as on their babies (Althabe et al., 2015; Coley & Chase-Lansdale, 1998; Deal & Holt, 1998; Deater-Deckard et al., 1994; East & Barber, 2014; Ganchimeg et al., 2014; Milan et al., 2004; Plotnick, 1992; Tam & Chung, 2007; Turkyilmaz & Hesapcioglu, 2019; Venkatesh et al., 2014; Zeiders et al., 2015). With respect to brief or short term mental health effects, mental health problems affect parenting styles, affection, and responsiveness towards the baby, subsequently, leading to negative outcomes in the baby such as developmental delays, social and emotional problems, as well as conduct problems (Althabe et al., 2015; Coley & Chase-Lansdale, 1998; Deal & Holt, 1998; Deater-Deckard et al., 1994; East & Barber, 2014; Ganchimeg et al., 2014; Milan et al., 2004; Plotnick, 1992; Tam & Chung, 2007; Turkyilmaz & Hesapcioglu, 2019; Venkatesh et al., 2014; Zeiders et al., 2015). With respect to prolonged or long term effects, mental health problems can persist for a long time (Huang et al., 2014). Prospective research show that the effects go beyond the immediate postpartum period. For instance, evidence suggests that adolescent mothers who suffer psychological problems, risk suffering from the same in the future compared to their counterparts without a history of pregnancy or mental health breakdown (Turkyilmaz & Hesapcioglu, 2019).

Therefore, dealing with parenting stress during this period is crucial for the mental health of adolescent mothers. How the young mothers cope with this stress will determine their mental health outcomes (Lazarus & Folkman, 1984). To cope means to deal effectively with something difficult (Straub, 2017). “Lazarus and Folkman’s 1984

Stress & Coping Theory" explains how people cope with stress. They argued that "stress is a transaction" between people and their environment. They proposed that when faced with stressors, people will undergo cognitive appraisal, which then leads to choosing a coping method, subsequently leading to adaptation or outcomes. They proposed that cognitive appraisal has two components, "primary" and "secondary" appraisal. Primary appraisal involves an initial interpretation of whether the stressful situation is a harm/loss, threat, or challenge. "Secondary appraisal" entails assessing individual and social abilities/resources to deal with the stressor at hand effectively. That is, evaluating coping assets to cope with the stressor at hand. Coping resources are defined as assets or capabilities within and outside of an individual that they can draw upon to deal effectively with a situation (Bulatao & Anderson, 2004). It is at this stage that one determines the coping style. Coping styles are actions engaged in to calm oneself during or after stressful or threatening situations (Lazarus & Folkman, 1984; Straub, 2017). Cognitive appraisal continues as one evaluates the potentially stressful situation and coping style selected. The coping style selected will then lead to either healthy or unhealthy adaptation or outcomes (Lazarus & Folkman, 1984). Therefore, parenting stress might not have the same effects on the mental health of all adolescent mothers owing to different psychological mechanisms (which could serve as coping resources and coping styles) (Faramarzi et al., 2016). It is, for this reason, crucial to understand some psychological mechanisms that could be used for coping and their role in the parenting stress - mental health relationship.

Indeed, studies using the above theory suggest that coping/psychological mechanisms may influence the impact of stressors on mental health (Kishore et al., 2018; Yali & Lobel, 2002). Drawing from the above theory and previous studies, coping mechanisms can be divided into two components: coping resources, and coping styles.

Coping/psychological resources are assets that people draw upon to gather as well as sustain their coping efforts; they consist of individual characteristics (self-confidence, self-efficacy), social environmental characteristics (support from relations like family, peers, significant others), possessions (vehicle), situation (having a job), drives (money) that could be directly or indirectly perceived crucial for survival (Lazarus & Folkman, 1984). However, most researched coping resources are personal, and social environmental resources (Yali & Lobel, 2002). Personal resources are described as within person strengths or weaknesses that include strengths like self-efficacy, hope, optimism, resilience, responsibility, and discipline. Within person weaknesses on the other hand include self-distrust, despair, pessimism, and inflexibility (Bulatao & Anderson, 2004; Yali & Lobel, 2002). Social environmental assets are described as those within an individual's relations and connections with others, and include both tangible resources such as money, information, goods, and services; and intangible ones such as love/affection, belonging to a group, and social status (Bulatao & Anderson, 2004). Personal and social environmental resources act as protective components in the stress-mental health relations (Kishore et al., 2018).

Coping styles on the other hand, are actions or psychological mechanisms engaged in to calm oneself during or after stressful or threatening situations (Lazarus & Folkman, 1984; Straub, 2017). Coping styles can either be adaptive or maladaptive. Adaptive coping styles are healthy ways of dealing with stress that improve functioning while decreasing stress (Solomon & Draine, 1995). They include active coping, engaging in planning, restraint coping, positive reinterpretation and growth, tendencies to seek social support, tendencies to accept situations, and turning to religion (Carver et al., 1989). Adaptive coping styles protect against adverse mental health outcomes (Yali & Lobel, 2002). Maladaptive coping styles on the other hand, do not increase functioning, rather,

they may relieve symptoms temporarily while the stressor maintains its strength or becomes more stressful (Solomon & Draine, 1995). They include focusing on and/or venting of emotions, denial tendencies, behavioural disengagement tendencies, mental disengagement, and disengaging from daily routines using alcohol and drugs (Carver et al., 1989). They do not address the root cause of stress and may only make the effects worse in the long run. Maladaptive coping styles are associated with negative mental health outcomes (Yali & Lobel, 2002).

Coping methods (resources/assets and strategies/styles), therefore, have the potential to protect adolescent mothers from mental health problems. Specifically, coping resources have the potential to protect adolescent mothers from mental distress (Kishore et al., 2018). Studies reveal that coping resources have the potential to counteract adverse stress influences as well as boost adolescent mothers' capabilities to conquer stress, through enhancement of individual capacity and social environmental support (Faramarzi et al., 2016; Kishore et al., 2018; Wei et al., 2008). Evidence shows that personal resources, particularly individual strengths, and positive social environmental resources alike, can protect against adverse impact of stressors on psychological health (Wei et al., 2008). Studies suggest that coping resources can be potential moderators of stress effects on mental health problems like depression (Kishore et al., 2018). Some studies that used coping resources as moderators found significant results. Similarly, coping styles, particularly adaptive coping styles may diminish stress impact on mental health. Evidence shows that coping styles can mediate the stress - mental health relations (Oni et al., 2012; Vanstone & Hicks, 2019). Likewise, other psychological mechanisms having similar properties as coping styles equally have the potential to mediate the stress-mental health relationship in that they could serve as mediators, mechanisms through which stress influences mental health. However, before

I go into details with the mechanisms, I discuss personal and social resources in the next paragraphs.

One personal attribute (personal coping resource) recognized as protective against psychological complications is resilience (Antonovsky, 1979; Cicchetti & Rogosch, 1997; Fredrickson et al., 2003; Hopf, 2010; Luthar, 1999; Luthar et al., 2000; Robertson et al., 2015). Resilience refers to the ability to prevail over adverse effects of risk exposure; or successful coping during traumatic times; or capacity to maintain a sound mind even in the most difficult threatening times; or ability to bounce back from adversity (Fergus & Zimmerman, 2005; Luthans, Avolio, et al., 2007; Masten et al., 1990; Zimmerman & Brenner, 2010). Studies have linked resilience to peoples' adjustment during difficult times like abuse, calamitous life experiences, urban shortage of resources, and other risks (Cicchetti & Rogosch, 1997; Fredrickson et al., 2003; Luthans, Youssef, et al., 2007; Luthar, 1999; Luthar & Cicchetti, 2000). And it has shown protective strength in such studies. However, despite the protective potential mentioned here, the role of resilience in protecting adolescent mothers from psychological problems is unclear. Whether resilience could influence the parenting stress - mental health relations in adolescent mothers is uncertain. This is because the role of resilience in this discourse is inconclusive. Some evidence shows weak association between resilience and depression - it failed to protect women from depression (Easterbrooks et al., 2011; Kishore et al., 2018). More so, others found low levels of resilience in adolescent mothers compared to adult mothers. Moreso, it did not have any influence over mental distress. Thus, they advocated for further research (Salazar-Pousada et al., 2010) (See Chapter 3 - literature review for details on resilience). Thus, there was need to examine this coping resource further in adolescent mothers' parenting stress - mental health discourse.

Another personal attribute (personal coping resource) associated with mental health adaptation is parental responsibility. Parental responsibility is defined as the duty, right, power, responsibility, and authority to the child (Stewart, 2006). Evidence shows that parental responsibility begins as early as adolescence, somewhere around puberty when one realises that one day, they would be a parent (Noddings, 2013; Perälä-Littunen & Böök, 2012; Tardy, 2000). Other researchers argue that parental responsibility may be more of an inherent component especially in females (Perälä-Littunen & Böök, 2012). That individuals are born with the nurturance ability which can be observed when individuals are very young, for instance, towards their siblings. Evidence also shows that parental responsibility could be influenced by environmental factors (Perälä-Littunen & Böök, 2012). That it is possible for one to model parental responsibility tendencies of their parents or other people around them. Parental responsibility can be external or internal (Campis et al., 1986) and is linked to mental wellbeing adaptation (Apetroaia et al., 2015; Campis et al., 1986; Hassall et al., 2005; Wethington & Kessler, 1989). However, the role of parental responsibility is not clear in the adolescent mothers' parenting stress-mental health relationship. It is not clear whether parental responsibility could influence parenting stress - mental health relations in adolescent mothers. Thus, this was worth studying further as the need to promote protective factors is crucial.

Another coping resource, particularly a social environmental resource that has been identified as a protective factor from psychological problems is social support. Social support refers to an awareness of care, readily accessible assistance, and importantly, a sense of belonging to mutually helpful relations and connections (Cobb, 1976; Taylor, 2011; Wills, 1991). Literature has shown that this social environmental resource shields one from effects of detrimental life events (Kishore et al., 2018). For

instance, higher social support levels have been linked to greater benefits in adolescent mothers such as better well-being (Davis et al., 1997). While lower social support is associated with poor psychological adjustments, specifically more depressive symptoms (Brown et al., 1987; Burchinal et al., 1996; Stevenson et al., 1999). However, while research suggests protective functions of social support in adolescent mothers, there is literature indicating that some young mothers may be low on this resource compared to their older counterparts (Edwards et al., 2012; Logsdon et al., 2002; Maynard, 1995), citing among other reasons, conflictual relationships with family especially parents, specifically mothers (Edwards et al., 2012) (See Chapter 3 –literature review for more details). Therefore, is not clear whether social support could influence the parenting stress - mental health relations in adolescent mothers. Thus, this was worth studying further as the need to promote protective factors is crucial.

One psychological mechanism serving as a coping style recognised as protective against psychological problems is religious coping style (Pargament et al., 1998). Most studies show that several individuals look to religion to deal with and get through difficult times (Pargament et al., 2011). Religious coping refers to varied religious interpersonal responses to adverse/risk/stressful situations that have a cognitive and behavioural alignment (Pargament et al., 1998). Religious coping was later segmented into two, positive and negative types of religious coping (Pargament & Brant, 1998; Pargament et al., 1998). Individuals use positive kinds of religious coping when they believe they have capabilities to effectively tackle stressful situations (Pargament & Brant, 1998). While one will engage in negative coping when they believe they lack control over the situation, or they do not have the ability to control it. Positive religious coping includes generous religious appraisals of stressors, strategies that seek divine links with a higher power, and turning to others of the same beliefs (Carpenter et al.,

2012). Positive religiosity is an adaptive and effective type of coping as it is protective against effects of adversity/risk/stress (Pargament et al., 2000). For instance, it protects individuals from developing depressive symptoms because of adversity/risk/stress (Bjorck & Thurman, 2007). It has also been found to positively impact mental health (Ano & Vasconcelles, 2005; Pargament et al., 2000).

Negative religious coping strategies include penalizing divinity reappraisals, venting spiritual discontentment, diminishing God's power, and demonic reappraisals (Carpenter et al., 2012). Negative religious kind of coping is maladaptive as it is positively related with distress (Carpenter et al., 2012). Particularly, it is associated with increased depressive symptoms and other disorders (Bjorck & Thurman, 2007). It also impacts mental wellbeing negatively (Carpenter et al., 2012; Pargament, 1997).

Nevertheless, while consistency has been found with negative type of religious coping and mental health, this has not been the case with positive religious coping (Ano & Vasconcelles, 2005; Harrison et al., 2001). For instance, most research found supporting results for the hypothesis that negative religiosity predicts depressive symptoms but found varied results about the relationship between positive religious coping and depression. For instance, some found a relationship between positive religious coping and depression (Tix & Frazier, 1998), but others did not find any effects, positive religiosity is mostly consistently related with positive psychological health (Carpenter et al., 2012; Fitchett et al., 1999; Hebert et al., 2009; Sherman et al., 2009). Moreover, it is not clear whether religious coping (positive and negative) would influence the parenting stress - mental health relations in adolescent mothers. Hence, this was worth pursuing further (See Chapter 3 – literature review for more).

Another psychological mechanism serving as a coping style that has been identified in literature, but this time a risk factor for mental health problems, is rumination. Rumination is defined as repetitive thoughts on negative inferences that come because of stress triggering events (Alloy et al., 2000; Robinson & Alloy, 2003). Rumination has been linked to mental health problems and the likelihood of being a risk factor in the stress - mental health relations (Abramson et al., 1995; Alloy & Abramson, 1999; Alloy et al., 2000). Evidence shows that people who make unhealthy insinuations when faced with stressful situations due to their negative cognitions (negative thoughts and beliefs) risk developing depression compared to individuals with healthier cognitions (Spasojevic et al., 2004). Rumination is negatively associated with mental distress such as depression (Robinson & Alloy, 2003) (See Chapter 3 –literature review for details). However, it is not clear if rumination can influence parenting stress - mental health relations in adolescent mothers. It was important to examine its risk factors for mental health problems in adolescent mothers who engaged in negative insinuations in the face of parenting stress.

Thus, by drawing on the tenets of the 'Lazarus and Folkman's stress and coping model,' and considering that parenting stress and mental health are related and affected by psychological mechanisms (coping resources, and styles), it implies that coping resources (resilience, parental responsibility, and social support) and coping styles (religious coping and rumination) may influence the mental health outcomes of the adolescent mothers in Zambia. It was therefore crucial to investigate especially the protective roles of the coping mechanisms mentioned to promote positive mental health among adolescent mothers, especially those from disadvantaged backgrounds who are more prone to mental health problems. Thus, the thesis will now outline the problem

statement, study rationale, significance of study, and the aims of the study in the remaining sections of this chapter.

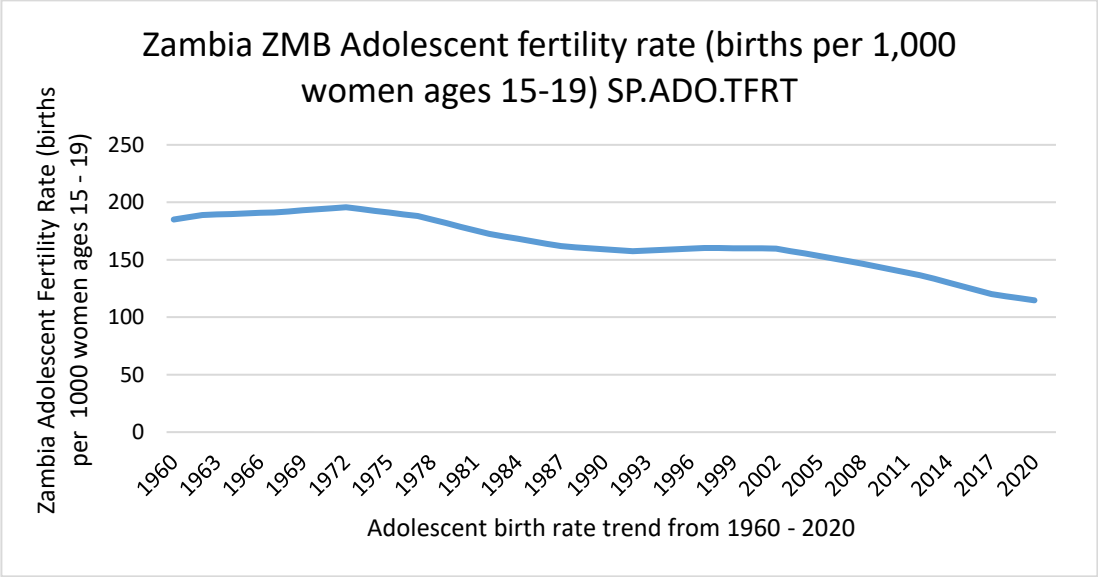
1.1 Problem Statement

As observed above, a lot of adolescent mothers in low-and middle-income countries face risks of serious mental health problems because of high poverty levels (Huang et al., 2014). It is thus anticipated that the number of adolescent mothers at risk of mental health problems in Zambia is even much higher because of high adolescent birth rates (of which majority are from disadvantaged backgrounds), and generally government neglect of adolescent mothers' mental health.

With regards high adolescent birth rates, Zambia still has high births by adolescent girls (mostly from disadvantaged backgrounds) compared to other countries within the Southern African region and among other low-middle-income-countries, standing at 115 births in every 1000 girls between the ages of 15 and 19 as of 2020 (World Bank, 2020b) (See figure 1 below for details). Important to note that this number is only for ages 15 – 19, numbers for those below the age of 15 are not included, indicating that the overall number is slightly higher. Possible explanation for these high birth rates by adolescent girls in Zambia compared with other countries are poverty, low wealth quintile, rural area residence, early sexual debut, early marriages, limited knowledge and use of birth control methods, low access to adolescent sexual and reproductive health (ASRH) services, low education levels, low literacy levels, transactional sexual activities, religious beliefs, and conflicted views of how to package sexual reproductive health services owing to the varying roles of parents, teachers, health workers, and religious leaders in their communities (Austrian et al., 2019; Brahmbhatt et al., 2014;

Mann et al., 2015; Menon et al., 2018; Munakampe et al., 2021; Neal et al., 2012; Packer et al., 2021).

Figure 1 Adolescent Fertility Rate (births per 1000 women ages 15 – 19) in Zambia



Note. From 1960 to 2020. From *World Bank Data base, April 2022.* Retrieved from data.worldbank.org

Moreover, statistics show that about six percent of all women in Zambia, had already started childbearing at the age of 15 (a percentage that has remained constant since 2010) (Zambia Statistics Agency, 2019). Furthermore, statistics show that the above problem is even bigger in rural areas, showing that of all the girls aged 15 to 19, 37% had begun child rearing compared to 20% in the urban areas (Zambia Statistics Agency, 2019). Additionally, data shows that adolescent girls in the lowest wealth quintiles have a higher likelihood of getting pregnant than those in the highest wealth quintiles (Population Council, 2017). Close to half (45%) of the girls aged 15 to 19 belonging to the lowest wealth quintile have had a pregnancy before, compared to 10% belonging to the highest wealth quintile (Population Council, 2017). This is consistent

with research that suggests that most parenting adolescents are from disadvantaged backgrounds, as such, they are at a higher risk for mental health problems than those from advantaged backgrounds (Huang et al., 2014). It is therefore anticipated that since most adolescent mothers in Zambia fall into the lowest wealth quintile, then many of them are at a higher risk for mental health problems. Hence, important to conduct mental health research in this region.

With respect to government neglect of adolescent mothers' mental health, few to none of such government programmes exist in Zambia and other LMICs. Also, few studies exist around mental health of adolescent mothers in Zambia, translating into lack of evidence to inform programmes and policies (Siwo, 2018). For instance, there are no mental health screening programmes for adolescent mothers during antenatal and postnatal in LMICs like Zambia. Also, no mental health awareness and prevention programmes, and no mental health campaigns for adolescent mothers. The absence of deliberate mental health programmes to screen young mothers, leaves them vulnerable to mental health problems (Siwo, 2018). These mental health problems are usually unreported and often go undetected (Mwape et al., 2012). Thus, a lot of adolescent mothers risk suffering from mental health problems due to lack of proper mental health care and because many of them (45%) are coming from the lowest wealth quintile, and essentially living in poverty (Population Council, 2017). Hence, there was need for this kind of research in Zambia to shed light on the mental health plight of adolescent mothers, and to inform programmes and policies. Moreover, the underling psychological mechanisms through which parenting stress affects the mental health relationship of adolescent mothers are unclear, and this discourse is unestablished and under-researched. The next section therefore gives the rationale for the study.

1.2 Study Rationale

As observed above (in section 1.0 and 1.1), there was need to conduct this research to attempt to fill in the research and service gaps identified. For instance, despite the protective potential of resilience as mentioned earlier in the introduction (section 1.0), it is not clear whether resilience could influence the indirect effect of parenting stress on the mental health of adolescent mothers. This is because existing research is inconclusive and unclear on the role of resilience in protecting young girls from mental health problems. Some did not find its protective role (Easterbrooks et al., 2011; Kishore et al., 2018), while others found low levels of resilience in adolescent mothers compared to adult mothers (such that it failed to protect them from mental distress), and thus advocated for further research (Salazar-Pousada et al., 2010). And the fact that it might not be emphasized much in Zambia due to its collectivist nature, created even more need to examine this personal resource further in this study.

Additionally, how the adolescents would adjust into this parenting role would have a bearing on their mental health. Understanding their role and responsibilities as a mother would likely interact with their coping choices, consequently affecting their mental health. However, it is not clear whether parental responsibility could influence the indirect effect of parenting stress on the mental health of adolescent mothers. Thus, resilience, parental responsibility, and social support, were worth studying further especially in the most vulnerable young girls. Moreover, the need to promote protective factors in this special group is crucial.

Also, while evidence suggests the protective role of social support in adolescent mothers, it is unclear whether social support could influence the indirect effect of parenting stress on the mental health of adolescent mothers. Existing literature is inconclusive about the role of social support in adolescent mothers. This is because there

is literature indicating that some young girls could be low on social support compared to their older counterparts (Edwards et al., 2012; Logsdon et al., 2002; Maynard, 1995), citing among other reasons, conflictual relationships with family, especially parents, specifically mothers (Edwards et al., 2012).

Furthermore, while positive religious coping is a protective factor in the stress/adversity and mental health relationship, and negative religious coping a risk factor (Ano & Vasconcelles, 2005; Carpenter et al., 2012; Fitchett et al., 1999; Harrison et al., 2001; Hebert et al., 2009; Pargament et al., 2000; Sherman et al., 2009; Tix & Frazier, 1998), it is not clear whether religious coping (positive and negative) would influence the parenting stress – mental health relations in adolescent mothers. Hence, this was worth pursuing further, especially that generally the role of religious coping in young mothers' mental health discourse is under researched.

Also, there was need to examine rumination coping in this sample considering that adolescent mothers are still young, may be ill prepared for the parenting role, are most likely to come from low SES background, putting them at an increased risk for negative insinuations during stressful situations. This is because they are likely to have undeveloped personal resources, and fewer social resources. Moreover, Zambia has a high birth rate among young girls (115 births in every 1000 girls aged between 15 and 19 in 2020), and a lot of adolescent mothers face risks for adverse negative mental health outcomes because of high poverty levels and neglect of mental health issues by the government.

Finally, it was also necessary to conduct a qualitative study afterwards to triangulate the findings from the surveys. This would also allow to examine other coping mechanisms if any through in-depth interviews with adolescent mothers concerning

parenting stress, its effects, and coping mechanisms. Therefore, due to the explained reasons above, as well as paucity of this kind of research in LMICs, this study recognized the urgency for this kind of research from a context like Zambia (a low middle-income country with a high birth rate among adolescent mothers, and high economic vulnerability) to achieve more holistic and comprehensive conclusions about this discourse. The next section therefore gives the significance of the research.

1.3 Significance of study

This research, therefore, was of high significance as the knowledge that would be derived from it would have theoretical, policy, and practical implications.

With respect to theoretical implications, this study would help bridge the research gaps identified in existing literature by contributing other pathways and psychological mechanisms through which parenting stress affects adolescent mothers' mental health (as opposed to the predominate direct paths). Particularly, by showing how religious coping (positive and negative) and rumination may function as mediums through which parenting stress affects the mental health of adolescent mothers. As well as how resilience, parental responsibility, and social support, could influence the psychological mechanisms underlying the parenting stress - mental health relationship. Additionally, this study could contribute to extant literature by showing additional coping mechanisms if any from the qualitative study as a way of triangulating findings from the quantitative studies. Thus, this mixed method approach would contribute more robust findings to this discourse by combining qualitative and quantitative findings.

With respect to policy implications, findings from this research also aim to bridge service gaps by informing policy, which in turn would enlighten the government on adolescent mothers' mental health needs. This is in the hope for the government to

devise deliberate measures (programmes and services) such as screening programmes for adolescent mothers during antenatal and postnatal health visits. As well as mental health awareness and prevention programmes, combined with occasional mental health campaigns. This would impact the psychological wellbeing of young mothers positively, including those coming from disadvantaged backgrounds. Thus, coping mechanisms that would turn out to have protective qualities on the psychological health of young mothers, would serve as evidence to advocate formulation of deliberate interventions and measures. While those coping mechanisms that would turn out as risk qualities for mental health would be evidence to discourage negative practices that exacerbate mental health problems among adolescent mothers. And highlight conditions and protective factors through which risks might be buffered and advocate to capitalize on these.

Findings from this study aim to provide evidence for mental health researchers and practitioners to design interventions that would promote enabling environments that support the psychological and general well-being of the adolescent mothers. Furthermore, provide evidence for adolescent health programmers and promoters to identify potential enablers and capability builders within the young mothers' social environment, such as immediate family, school, and community, who can be integrated into the implementation of wellbeing intervention strategies or programmes for the young mothers. Additionally, would provide evidence to promote or advocate for programmes that call for cultivation of positive individual strengths to help adolescent mothers (especially those in worse adversities) to cope favorably with parenting stress, thereby protecting their mental health and general wellbeing. In turn, safeguarding their current and future mental health, and subsequently their overall well-being and development.

Having discussed the introduction, problem statement, rationale, and significance, the next sections (1.4, 1.5, and 1.6) discuss the aims, delimitations of study, and thesis structure.

1.4 Aims

To examine the relationship between parenting stress and mental health (positive affect and mental distress) of adolescent mothers.

To examine the mediating role of religious coping in the relationship between parenting stress and mental health (positive affect and mental distress) of adolescent mothers.

To examine the mediating role of rumination in the relationship between parenting stress and mental health (positive affect and mental distress) of adolescent mothers.

To examine the moderating role of resilience in the indirect relationships between parenting stress and mental health (positive affect and mental distress) of adolescent mothers.

To examine the moderating role of parental responsibility in the indirect relationships between parenting stress and mental health (positive affect and mental distress) of adolescent mothers.

To examine the moderating role of social support in the indirect relationships between parenting stress and mental health (positive affect and mental distress) of adolescent mothers.

1.5 Study Delimitations

The study was not about non pregnant adolescent females, nor adult pregnant or parenting women nor non-pregnant adults, nor was it about adolescent males. Only female parenting adolescents.

1.6 Thesis Structure

Chapter one introduces the study, the research problem, rationale, significance, main aim, specific aims, and delimitations of the study. Chapter two presents the study setting; the rationale for choosing Zambia, its socio-environmental, and religious context. Chapter three presents the literature review based on evidence in literature. Chapter four presents the theoretical framework based on theories in literature. Chapter five presents the pilot study. Chapter six presents the main survey study. Chapter seven presents the qualitative study that examines the in-depth lived experiences of the adolescent mothers. Chapter eight presents summary of findings of all three studies, contributions/strengths, implications, limitations and recommendations, and conclusions. In summary the current research project employed a sequential mixed method study approach (both quantitative and qualitative in nature) and was divided into three studies: The first study was a quantitative pilot study. The second study was a quantitative main survey study. While the third study was a qualitative study.

CHAPTER 2: STUDY SETTING (LUSAKA, ZAMBIA)

2.1 Introduction

Here I present the rationale for choosing Lusaka, Zambia as the study location. I also present the social environmental, as well as the religious contexts. This is because these two contexts are a bigger part of the Zambian way of life (Taylor, 2006), and it is anticipated that factors embedded within them have the potential to influence adolescent mothers' mental health (positive affect and mental distress) outcomes.

2.2 Rationale for study setting Zambia

Zambia was a suitable study setting because it falls under the low-and-middle-income countries where adolescent mothers face more adversity because of high poverty levels (Population Council, 2017). It is anticipated that a lot of adolescent mothers in Zambia could be at greater risk for psychological problems because of the following reasons: High birth rates by adolescent (because of reasons discussed in the problem statement); mostly from disadvantaged backgrounds (as indicated by rates in chapter one), and generally government neglect of mental health issues in the youth, including adolescent mothers (also indicated above).

Why Lusaka specifically?

Lusaka was selected as the specific setting because it comprises of adolescent mothers form all wealth quintiles (Population Council, 2017). Statistics show that there are a few from the highest wealth quintile, a moderate number from the middle wealth quintile, and majority from the lowest wealth quintile (Population Council, 2017; Silavwe, 1994). This setting was thus suitable for this study as it allowed to assess differences among the wealth quintiles.

2.3 Social environmental context

Exploring the Zambian social environmental context was important because of its significance on psychological health (Carver et al., 1989; Hurd, 2010a; Yali & Lobel, 2002). Specifically, because social support, which is embedded in this context has a potential protective influence on parenting stress - mental health relations in adolescent mothers (Hurd, 2010a). Thus, we would not have had a complete assessment of adolescent mothers' mental health in Zambia without recognizing the role of their social environmental context. This context does not only potentially impact the mental health outcomes of the adolescent mothers but can also greatly influence the efficacy and viability of mental health programmes, policies and intervention strategies that would target the young mothers in Zambia.

Zambia is more of a collectivist society than individualistic when it comes to the social environmental context (Hofstede, 2011; Minkov et al., 2017). In such a society, people are groomed as belonging to 'in groups' which look out for them in exchange for reciprocity and loyalty (Stamkou et al., 2019). People in this society are encouraged to look after not only themselves and their immediate families, but also other people from the wider groups they belong to like extended family, village/community groups, church groups, cooperative groups, and other social groups (Minkov et al., 2017). Overall, Zambians emphasise communal values such as family, and community-oriented mind-set, over individual values (Hofstede, 2011). The Zambian society emphasises the spirit of togetherness, where everyone looks out for other members of their group (Stamkou et al., 2019). These groups emphasise protecting the image of the group as members go about their lives, as their actions can bring either shame or pride to the group (Smith & Robinson, 2019). This also acts as a drive to help one another as whatever individual members do, reflects on the group (Hofer & Chasiotis, 2003).

This, therefore, implies that looking out for adolescent mothers can go either way. This is because, in some families or groups, it might be viewed as bringing shame to the family, and in others, it might be viewed as a mistake (Arnett, 2007). In the former, the adolescent mothers might not be given the much-needed support (as a form of punishment), while in the latter, the adolescent mothers might be supported and still treated as a member (Hofstede, 2011). This could explain why some literature suggests that some young mothers lack proper support (Logsdon et al., 2002), citing among other reasons, strained relationships, especially with parents (Edwards et al., 2012). Hence it is possible that some adolescents receive support, while others do not.

Also, it is important to note that since collectivism is favored more than individualism in the Zambian society (Arnett, 2007), it is possible that this has the potential to hinder personal strengths like resilience from thriving. Hence, besides assessing the social environmental context, it was also crucial to assess resilience in adolescent mothers from this society and how it influences their mental health. Also, it was important to assess the Zambian religious context and its role in adolescent mothers' mental health. Thus, the Zambian religious context is presented below.

2.4 Religious context

The Zambian religious context was worth exploring because of the potential influence that religious coping might have on the mental health of adolescent mothers. Zambia, is a religiously diverse society, including world popular religions (Christianity, Islam, Hinduism, Baha'i Faith and Judaism) and traditional spiritual practices (Mbiti, 1991; Taylor, 2006). However, Zambia is predominantly a Christian country, with a large percentage of about 85.5% (more than three quarters) of its population belonging to the different denominations of Christianity (Association of Religious Data Archives,

2015). The other religions share the remaining percentage as follows: 11.2% indigenous religions, 1.8% Baha'i Faith religion, 1.1% Muslims, 0.2% Agonistics, 0.1% Hindus, and all the others hold about 0.1% (Archives, 2015; CSO, 2010). The Muslim and Hindu communities are mostly made up of Zambians of South Asian origin and a handful of indigenous ones (Arnett, 2007). While the Jewish community is made up of Zambians of Jewish origin or descendants of Jewish immigrants who settled in Zambia (Gifford, 1998). While the Baha'i Faith is made up mostly of Zambians of Arabic origin (Phiri, 2003). However, all these religions now have a few indigenous Zambians joining them (CSO, 2010).

Christianity (which initially arrived mid nineteenth century through the missionary Dr David Livingstone (Blaikie, 2004), only established ground early twentieth century), being the most dominant seems to have more influence on the greater Zambian population than the other religions (Arnett, 2007). Evidence shows that Christianity today seems to co-exist with traditional religious practices that have been in existence long before the coming of the missionaries in the mid nineteenth century (Mbiti, 1991). Literature further shows that this blend greatly influences most Zambians' view of the world, their way of life, and the choices they make (Taylor, 2006). Even though the above is influenced by several factors such as individual experiences, education, up-bringing, social economic status, access to resources, ethnicity, religion, culture, and customs, it must be noted that in Zambia, religion is one of the most significant factors that shapes people's lives, both individually and collectively (Phiri, 2003; Taylor, 2006). This implies that religion could be a great part of the adolescent mothers' way of life and could potentially influence their mental health positively or negatively, depending on how they appraise their circumstances.

Evidence further shows that religion directly influences the choices that ordinary Zambian citizens make every day (Agha et al., 2006). This includes tremendous influence on child and youth development, such that it has been implicated in influencing both positive and negative outcomes in youths, especially in their choices regarding sexual reproductive health (Agha et al., 2006). For instance, religion has been implicated in the high adolescent pregnancy rates (Agha et al., 2006; United Nations, 2008). Some stakeholders argue that fundamentalist or evangelical religious groups have aided in the increased risks in individuals, especially youths (Horn, 2012). Leading to undesired outcomes such as unwanted/unplanned pregnancies (Agha et al., 2006). This is because of their strict opposition to condom and other contraceptive use, but rather advocate for exclusive abstinence practice and non-premarital sex among the youth (Marindo et al., 2003). This suggests that religion could be a very strong factor that could influence coping patterns of our participants especially those stressed due to the parenting role and that is why it was worth exploring in this context.

Religiosity, therefore, may influence outcomes of the adolescent mothers. It was anticipated that some may take consolation in their religious beliefs as they go through the difficulties of parenting. While others, may wallow in their difficulties as they go through the same and are likely to blame their God for their experiences or to think they are being punished for engaging in premarital sex that led to their pregnancy (as many mothers are expected to be in the ‘never married’ bracket). Since religion is a huge part of Zambians, it was important to get an exact picture of how the young mothers would use religion to cope with stress. To know just how much influence religion has on them.

2.5 Summary of study setting

Considering high adolescent pregnancy rates, neglect of the mental health sector in a low middle-income country, high urbanisation especially in the capital city Lusaka, social environmental, and religious context, it was therefore a suitable place for my research. To uncover underlying relationships among the variables of this study in this special sample of adolescent mothers from this setting - Zambia, a low middle-income country. A country where the government struggles to provide its citizens with basic services such as clean drinking water, let alone decent health services, worse off, have neglected the mental health care system (Mwape et al., 2012). A collectivist country emphasizing communal values such as family over the individual values (Hofstede, 2011). A setting where individual qualities are most likely less emphasised. A very religious society in which religion happens to influence peoples' way of life and choices they make (Phiri, 2003; Taylor, 2006). Given this contextual background, the results obtained help make holistic and comprehensive conclusions about this discourse.

3.1 Introduction

Here, definitions, applications, empirical evidence, and theoretical accounts of key variables are presented. The key variables in this study were parenting stress as the main predictor variable, positive mental health (positive affect), and mental distress (depression, anxiety & tension / stress) as outcome variables, and psychological mechanisms (positive and negative religious coping, and rumination as mediators; then resilience, parental responsibility, and social support as moderator variables). Research evidence emanating from previous studies are presented here to give an overview of existing findings and research gaps that needed to be filled. The first section examines the concept of parenting stress which was the main predictor variable.

3.2 Parenting stress (Independent Variable)

3.2.1 Definition

Parenting stress is defined as stress which arises when demands associated with parenting roles exceed available resources and expectations available (Abidin, 1990). Parenting is an exceedingly complex task often performed under incredibly challenging circumstances coupled with inadequate individual and physical resources. In worst case scenarios, having a child with a disability or disorder makes it even more challenging (Hayes & Watson, 2013). Stress from parenting independently but inconsistently predicts psychological health (Barth et al., 1983; Hipwell et al., 2016).

3.2.2 Research showing adolescent mothers' stress from parenting

Considering that these adolescent pregnancies are often unplanned, they come with high levels of stress (Hans & Thullen, 2009; Huang et al., 2014). Studies show that compared to their older counterparts, adolescent mothers will suffer heightened stress

and extra negative emotions because of the new parenting role, which just puts them offset as they did not plan for it (Emery et al., 2008; Hans & Thullen, 2009; Huang et al., 2014). The stress seems to be elevated because of perceived low social support compared to their older counterparts who most times have spouses, among other relatives (Emery et al., 2008).

Furthermore, parenting stress is more pronounced in adolescent mothers than in adult mothers since these adolescents are still young and not yet financially stable (Goodman & Brand, 2009; Leadbeater, 1999). Therefore, making them more susceptible to social and economic difficulty (Leadbeater, 1999). This in turn increases their stress, which is often classified as clinical (Larson, 2004). It is approximated that 30% of adolescent mothers experience this kind of stress at some point during the two years postpartum (Larson, 2004; Spencer et al., 2002). Research further shows that parenting adolescents are likely even in future to parent alone, making them more susceptible to economic hardships, subsequently making them vulnerable to high levels of stress (Maynard, 1995). This is because they usually lack social support like a spouse, or in worst cases a family member like a mother or grandmother who could be there for them (Maynard, 1995). The next section gives evidence of the link between stress and psychological health.

3.2.3 Research linking parenting stress to mental health

The fact that adolescent parenting is often unplanned, it leads to high parenting stress as mentioned in the above section, which is linked to maternal distress like depression (mild or severe depression, double severity compared to middle aged women above 25), anxiety, post-traumatic stress disorder, suicidal tendencies, mood problems, concentration struggles, eating problems, sleeping problems, and many more (Deal & Holt, 1998; East & Barber, 2014; Milan et al., 2004; Mukwato et al., 2017; Plotnick,

1992; Socolov et al., 2017; Tam & Chung, 2007; Turkyilmaz & Hesapcioglu, 2019; Venkatesh et al., 2014; Wen & Chu, 2020; Zeiders et al., 2015). To this effect, some scholars argue that stress from the parenting role in adolescents, causes significant distress in the parenting adolescents' lives (Milan et al., 2004; Mukwato et al., 2017). For instance, research revealed that adolescent mothers were more emotionally distressed in comparison with adolescent norms (Milan et al., 2004).

Furthermore, some studies show that heightened stress from parenting can predict depression during the postpartum period in adolescent mothers. This was observed when they checked adolescent mothers' prior stress levels at the point of diagnosing depression (Huang et al., 2014; Venkatesh et al., 2014). Huang et al. (2014). They further revealed that heightened parental stress was linked to high levels of maternal depression at six months follow up. Similarly, parental stress was associated with depression, both postpartum and the subthreshold type in the teenage mothers (Huang et al., 2014). Those who scored highly on parenting stress had an increased chance of being diagnosed with postpartum depression. About 19% of the participating young mothers fit this category of developing depression in the postpartum period up to 6 months later (Venkatesh et al., 2014). In addition, several other studies show that stress (both acute and chronic) is independently, significantly, and positively related with postpartum depression (Reid & Taylor, 2015).

These mental health risks are said to continue even in adulthood compared to their counterparts without adolescence parenting experience (Turkyilmaz & Hesapcioglu, 2019). For instance, one study compared depression and anxiety incidents among three categories of women. Adolescent pregnant girls formed one category, adult pregnant women with a history of adolescent pregnancy formed the next category, and the third

category consisted of adult pregnant women without a history of adolescent pregnancy. It was observed that the highest depression and anxiety levels were reported among adult pregnant women with a history of adolescent pregnancy (Turkyilmaz & Hesapcioglu, 2019).

Mental health problems in turn have been documented to impact negatively on their children's health, putting them at a much greater risk for developmental delays, psychological and social problems, and in worse circumstances death during their first year of life (Althabe et al., 2015; Coley & Chase-Lansdale, 1998; Deater-Deckard et al., 1994; Ganchimeg et al., 2014).

This section showed the existence of a significant link between stress from a parenting role and psychological health. However, some studies found no link between parenting stress and heightened depression or anxiety (Barth et al., 1983; Hipwell et al., 2016). They argued that mothering girls are not as psychologically distressed as often thought. At least not from the parenting status but from other contextual factors, and at least not in the first few months of parenting. They found that other contextual factors (participant economic background, age, and social support) predicted wellbeing more significantly compared to parenting status (Barth et al., 1983; Hipwell et al., 2016). To be precise, SES contributed more variance to their outcomes. For instance, low SES parenting adolescents were reported to be most psychologically impaired compared to pregnant, non-pregnant or non-parenting adolescents (Barth et al., 1983). Additionally, social support partly contributed to the mental health of parenting adolescents (Barth et al., 1983). Thus, showing an independent but inconsistent link of parenting stress to mental health.

Having reviewed literature concerning parenting stress and its link to mental health, it was important to examine the concept of mental health in detail below.

3.3 Mental Health (Dependent Variable)

3.3.1. Definition

The mental health concept is broad and defined diversely by scholars. Contextual variations, measurement tools, and perspectives, have a hand in its definition (WHO, 2001). It is defined as "a state of whole mental well-being, and not simply the mere absence of disease or infirmity" (WHO, 2001, p.3). Furthermore, research argues that well-being is embedded in one's realisation of their abilities; capabilities to cope with common stressors in life; being productive, and able to contribute to their community (WHO, 2018). Additionally, mental health has been defined as the optimal mental operation translating into productiveness; good relations with others; healthy adaptation; and ability to cope with adverse conditions (Goldman & Grob, 2006). Some scholars go on to argue that it refers to one functioning satisfactorily at all levels, that is, emotionally, cognitively, and behaviourally (Ryff, 1989). However, people will not always be at their optimal mental functioning, especially when life circumstances hit them harder than usual (Ryff, 1989).

We then see mental distress coming in, described as an array of inner symptoms and experiences of an individual that are commonly perceived as disturbing, unpleasant, confusing, or unusual (Goldberg, 2000). Mental distress is a concept that is closely related to mental illness, with some mental health practitioners using the two terms interchangeably, usually causing controversy in definitions (Goldberg, 2000). Mental illness, on the other hand, refers to all detectable psychological disorders or set of medically defined conditions (Goldman & Grob, 2006). Mental distress, in comparison to mental illness, is broader in scope and an individual experiencing mental distress may show some symptoms laid down in psychiatry or psychotherapy. For instance, disturbance in emotions, anxiety, delusions, anger, sadness, and many others, but are not

really suffering from a clinical mental disorder (Goldberg, 2000).

Mental distress can be brought about by major life events (like death of a loved one, natural disasters) or daily stressors (like academic/work stress), and symptoms may include any of the following: difficulty sleeping, increased drug or alcohol use, hopelessness, anger, anxiety, poor concentration, persistent sadness and many more (Goldberg, 2000). In many people, these symptoms will go away without psychiatric or psychotherapy interventions (Goldberg, 2000). However, individuals who endure any of these symptoms much longer than usual, could face clinical diagnosis of one mental illness or another (Goldberg, 2000). Research shows that mental health users prefer to use the term mental distress as opposed to mental illness because it is closer to what many people experience from time to time and more relatable to everyday life (Goldberg, 2000).

Mental health has been found to be on a continuum, with positive mental health on one extreme end and poor mental health on the other (Keyes, 2002). Therefore, this study examined mental health from two points of view, that is, (1) positive mental health, particularly, positive affect, and (2) poor mental health, particularly, mental distress. This is because many studies have used the concept of positive affect as an indicator of positive mental health (Diener & Emmons, 1984; Keyes, 2002). While mental distress on the other hand has been used to symbolise poor mental health (Goldberg, 2000; Keyes, 2002). It was therefore important to examine the concepts of positive affect and mental distress in details, and this was done in the next sections.

3.3.2 Positive Affect (Dependent Variable)

Positive affect is part of the affective component of mental health which refers to one's emotions, moods and feelings and is petitioned into positive and negative affect (Clark et al., 1989; Diener & Emmons, 1984; Folkman & Moskowitz, 2000). The affect

component is considered positive when the moods, emotions, and feelings are pleasant. For instance, joy, elation, affection, contentment, pride, happiness, and ecstasy (Cohen & Pressman, 2006; Diener & Emmons, 1984; Pressman & Cohen, 2005; Watson et al., 1988). Affect is considered negative when the moods, emotions and feelings experienced are unpleasant. For instance, anger, guilt, shame, sadness, anxiety, worry, envy, loneliness, stress, and depression (Diener & Emmons, 1984; Watson et al., 1988). However, this study only focused on positive affect as this is part of affect that measures positive mental health. Evidence shows that positive affect can be best understood by appraising one's moods, feelings, and emotions (Diener & Emmons, 1984; Lyubomirsky et al., 2005; Watson et al., 1988).

3.3.2.1 Research on Positive affect

Suffice to say that positive affect helps one to realise their goals whilst making sure that they do not come into conflict with societal values. In so doing, one can fulfil day-to-day tasks and needs; be able to participate in what makes them happy; and stay positive and accept oneself (Folkman & Moskowitz, 2000; Lyubomirsky et al., 2005). High positive affect is dependent on various mechanisms such as personality characteristics, genetics, social economic status, social influences and resources, family, heath, physical characteristics, leisure, and cultural variations (Diener & Emmons, 1984; Folkman & Moskowitz, 2000). For instance, evidence links higher social support levels, with great benefits in adolescent mothers, such as greater positive affect (Davis et al., 1997; Folkman & Moskowitz, 2000). Evidence also shows that individuals with high resilience tend to engage in behaviours that promote positive affect and generally improve psychological wellbeing (DeRosier et al., 2013; Fredrickson, 2001; Sood et al., 2013; Tugade & Fredrickson, 2004). Meanwhile, stress negatively predicts positive affect (Allgöwer et al., 2001; Diener & Emmons, 1984; Folkman & Moskowitz, 2000;

Sood et al., 2013).

3.3.3 Mental distress (Dependant Variable)

3.3.3.1 Defining mental distress

Mental distress is quite a broad concept. It is defined as an array of inner symptoms and experiences of an individual that are commonly perceived as disturbing, unpleasant, confusing, or unusual (Goldberg, 2000). An individual experiencing mental distress may show some symptoms laid down in psychiatry or psychotherapy. For instance, disturbance in emotions, anxiety, delusions, anger, sadness, and many others, but are not really suffering from a clinical mental disorder (Goldberg, 2000). The symptoms can be brought about by stress, losing loved ones, difficulty sleeping, drug or alcohol abuse, assault, emotional abuse, accident and many more (Goldberg, 2000). In many people, these symptoms will go away without psychiatric or psychotherapy interventions. However, individuals who endure any of these symptoms much longer than usual, could face one clinical mental illness diagnosis or another (Goldberg, 2000). Mental distress in this study focused on depression, anxiety, and tension / stress.

3.3.3.2 Depression Concept

Depression is defined as an emotional state characterised by feelings of worthlessness, shame, and lack of interest in daily activities (Beck & Alford, 2009). Symptoms of depression include intense sadness, despair, negativity, esteem issues and decrease in self value, lack of interest in daily activities, decrease in energy or vitality levels, appetite loss, and difficulty sleeping (Beck & Alford, 2009). Depression in this project follows DASS guidelines of viewing depressive symptoms as any scores being above the normal population mean score, translating to assessment of disturbance but

not necessarily as a clinical case (Lovibond & Lovibond, 1995). Individuals who fall under ‘severe’ or ‘extremely severe’ are classified as “at risk” and thus encouraged to seek further clinical diagnosis (Lovibond & Lovibond, 1995).

Depression has been implicated as one of the mental distresses common in adolescent motherhood. Adolescent mothers have double the risk of suffering from depression than their order counterparts (adult mothers) (Deal & Holt, 1998; East & Barber, 2014; Milan et al., 2004; Plotnick, 1992; Socolov et al., 2017; Tam & Chung, 2007; Turkyilmaz & Hesapcioglu, 2019; Venkatesh et al., 2014; Zeiders et al., 2015). They are also likely to have depressive and anxiety symptoms that are much higher than adolescent norms (Milan et al., 2004). This is worrying because of the short- and long-term consequences on the young mothers (Deal & Holt, 1998; East & Barber, 2014; Milan et al., 2004; Plotnick, 1992; Socolov et al., 2017; Tam & Chung, 2007; Turkyilmaz & Hesapcioglu, 2019; Venkatesh et al., 2014; Zeiders et al., 2015).

3.3.3.3 Anxiety Concept

Anxiety is characterised by feelings of pressure, worrisome notions, and physiological symptoms such as rising blood pressure. Anxiety disorder is normally associated with persistent invasive notions or fears, in turn translating into avoidance of activities, practices, or people (Beck et al., 1987; Julian, 2011). However, anxiety in this study was defined according to the DASS as any score being above the normal population mean score, translating to assessment of disturbance but not necessarily as a clinical case (Lovibond & Lovibond, 1995). Individuals who fall under ‘severe’ or ‘extremely severe’ are classified as “at risk” and thus encouraged to seek further clinical diagnosis (Lovibond & Lovibond, 1995).

3.3.3.4 Tension / Stress Concept

Stress or tension in the mental distress umbrella is defined as an affective or emotional state characterised by chronic arousal and impaired function (Lovibond & Lovibond, 1995). However, tension or stress in this study was defined according to the DASS as any score being above the normal population mean score translating to assessment of disturbance but not necessarily as a clinical case (Lovibond & Lovibond, 1995). Individuals who fall under 'severe' or 'extremely severe' are classified as "at risk" and thus encouraged to seek further clinical diagnosis (Lovibond & Lovibond, 1995).

Having examined the parental stress and mental health concepts, the next sections examine the potential psychological mechanisms, starting with the mediator variables - religious coping (positive and negative), and rumination. Then followed by the moderator variables - personal resources (resilience, and parental responsibility), and social environmental resource (social support).

Psychological Mechanisms

Psychological mechanisms in this study were divided into two: Mediator variables and moderator variables.

Mediator Variables

Using Lazarus and Folkman's model as a basis, religious (positive and negative) coping and rumination are psychological mechanisms that have the potential to serve as coping styles as explained in chapter one. Coping styles are actions engaged in to calm oneself during or after stressful or threatening situations (Lazarus & Folkman, 1984; Straub, 2017). As such they were examined in this study as mediator variables, as they have the potential to serve as mediums (coping styles to calm oneself) through which

parenting stress may affect the mental health of adolescent mothers. Coping styles can either be adaptive or maladaptive. The first coping style to examine in this section is religious coping (positive and negative), followed by rumination coping.

3.4 Religion coping (Mediator Variable)

3.4.1 Definition

Religious coping is a term that was coined by Kenneth Pargament and colleagues (Pargament, 2011; Pargament & Brant, 1998). Religious coping refers to varied interpersonal religious responses to adverse/risk/stressful situations which are cognitively and behavioural based (Pargament et al., 1998). Religious coping was later segmented into two parts, positive and negative types of religious coping (Pargament, 1997; Pargament & Brant, 1998; Pargament et al., 1998). Proponents of this theory argue that one would most likely participate in the positive kind of religious coping when they believe they have capabilities to deal effectively with the adverse/risk/stressful situation (Pargament, 1997). While one will engage in the negative type of religious coping when they believe they lack control over the situation, or they do not have the ability to control the situation. Positive religious coping includes generous religious appraisals of stressors, strategies that seek a divine link, as well as turning to or connecting with others of the same faith or beliefs (Carpenter et al., 2012). Positive religious coping is considered adaptive and effective because of its protective mechanisms against adversity/risk/stress (Pargament et al., 2000). For instance, it protects individuals from developing depressive symptoms because of stress (Bjorck & Thurman, 2007; Maynard et al., 2001). It also positively impacts mental health (Ano & Vasconcelles, 2005; Pargament et al., 2000).

Negative religious coping includes penalizing religious beliefs, questioning

Gods love, venting religious discontentment, re-evaluations of divine powers, and demonic reappraisals (Carpenter et al., 2012). This is considered maladaptive, as it positively predicts risks/stress and depression, among others (Carpenter et al., 2012). Particularly, it has been found to intensify or exacerbate distress (Bjorck & Thurman, 2007). It negatively impacts mental health (Carpenter et al., 2012; Pargament et al., 1998).

3.4.2 Research on religious coping

Religious coping in mental health has gained reputation over the past years. Research investigating religiosity in mental health has increased (Adam & Ward, 2016; Ano & Vasconcelles, 2005; Hackney & Sanders, 2003; Harrison et al., 2001). Religiosity, depending on which among the two acts as a protective or risk mechanism in mental health. Furthermore, religiosity is said to contribute uniquely to mental health such that scholars advocate that it cannot be equated with non-spiritual coping strategies (Pargament, 1997; Pargament et al., 2000; Tix & Frazier, 1998). Also, consistency has been found in the two most popular measures (positive and negative religious coping scales) and mental health, across many studies (Ano & Vasconcelles, 2005; Harrison et al., 2001). Several studies concentrating on mental distress, found similar results (Bjorck & Thurman, 2007; Carleton et al., 2008).

Also, majority of studies examining religiosity and mental health have mostly focused on depression (Bjorck & Thurman, 2007; Maltby & Day, 2003; Nooney & Woodrum, 2002; Pargament et al., 1998; Sherman et al., 2009; Tarakeshwar & Pargament, 2001). For instance, a meta-analysis revealed that both religious coping strategies (positive and negative), significantly accounted for psychological adjustments. Positive religiosity has been implicated in both positive and negative adjustments, high and low, respectively. Negative religiosity, however, has mostly been implicated in

intensified negative adjustments (Ano & Vasconcelles, 2005). For instance, a cross-sectional study involving protestant church members as participants, revealed that negative religiosity predicted heightened depressive symptoms, whereas positive religiosity predicted decreased depressive symptoms (Bjorck & Thurman, 2007).

Few prospective longitudinal studies that exist also found results supporting the above assertions about negative religiosity predicting heightened depression, but varied results about positive religiosity and depression over time. For instance, one longitudinal research found a positive link between positive religiosity and mental wellbeing (Tix & Frazier, 1998). However, others of the same nature that came afterwards did not get the same results (Carpenter et al., 2012). One study found no effects for positive religiosity on mental wellbeing but found effects of negative religiosity on satisfaction with life, depressive symptoms, and psychological adjustments (indicating poor satisfaction, heightened depressive symptoms, and poor adjustments) (Hebert et al., 2009). Similar research in medical transplant patients found similar results, with negative religiosity being linked with increased depressive symptoms, post-transplant anxiety, and low subjective wellbeing, but none with positive religiosity (Sherman et al., 2009). Equally, another prospective research following rehabilitation medical patients found effects for negative religiosity but not positive religiosity (Fitchett et al., 1999). Likewise, a prospective study on academic stress, and distress among students revealed supportive results for negative religious coping just like others but did not find the same for positive religious coping (Carpenter et al., 2012).

Having reviewed religious coping literature, the next section reviews the rumination concept and its existing literature.

3.5 Rumination (Mediator Variable)

3.5.1 Definition

The concept of Rumination has over the years been defined in various ways by different scholars due to the initial lack of consensus of (1) what it is (the kind of notion it is), whether it is a state, trait, or process, and (2) conceptualization. In the quest to understand this notion better, various scholars developed different theories from various psychological perspectives. These theories include "response styles theory of rumination" (Nolen-Hoeksema, 1991), "stress reactive rumination" (Alloy et al., 2000), an extension of response styles theory, "meta-cognitive theory of rumination S-REF Model" (Matthews & Wells, 2004), "goal progress theory of rumination" (Martin & Tesser, 1996), among others. While various scholars seemed to have conceptualised and defined rumination differently in their theories, some definitions became more popular than others, and likewise, some theories quickly received empirical support, giving them prominence over others. Two such theories are the "Response Styles Theory" and the "Stress Reactive Theory," which are the focus of this study.

The Response styles theory defines rumination as actions of continuous attention on symptoms, origins, connotations, and implications of an individual's distress (Nolen-Hoeksema et al., 2008). It is also defined as the inclination to constantly dwell on previous happenings, particularly, negative thoughts, experiences, feelings, causes and consequences of experiences (Papageorgiou & Wells, 2004). Furthermore, it also refers to a cluster of thoughts one is aware of that are centred on a collective theme likely to recur if mental faculties are dormant (Martin & Tesser, 2006).

Rumination is a complex concept that has been associated with a continuous experience of negative thoughts and feelings over a considerable period (Papageorgiou & Wells, 2004). It is often viewed as a very provocative topic of discussion and

investigation because of the associated unpleasant or unproductive experiences for many people who practice it (Martin & Tesser, 2006). Yet victims are convinced about its purported advantages. Research shows that rumination may even take place when the initiating event (failing a course, divorce, job loss, unwanted teenage pregnancy, and many more) has long passed. For instance, a student who is bullied by a peer may not react immediately after the incident. They may go home and probably only start ruminating about the incidence after several days have passed (Martin & Tesser, 2006). What makes rumination even more interesting is the fact that even though most of the times (but not always) it is unpleasant and unproductive, it may be difficult for individuals to refrain themselves from engaging in it, and as such may continue this path for years after the initiating event (Smith & Alloy, 2009).

3.5.2 The Response styles theory of rumination

Developed by Nolen-Hoeksema along with her associates, this theory has remained influential in enhancing the understanding of rumination and has undergone several changes over the years (Nolen-Hoeksema et al., 2008). At the development of this theory, rumination was defined as continuous concentration on depressive symptoms, causes, connotations, and implications of such symptoms (Nolen-Hoeksema, 1991). The focus earlier was on depression, a lot of evidence too was about the role of rumination in the onset, endurance, and intensification of both mild and major depressive symptoms (Nolen-Hoeksema, 2000; Nolen-Hoeksema & Morrow, 1993; Nolen-Hoeksema et al., 1994). It then recently extended the definition of rumination further than just depression, to include continuous focus on symptoms, triggers, connotations, and consequences of an individual's distress in general (Nolen-Hoeksema et al., 2008). Implications of rumination in various disorders apart from depression necessitated this extension (Smith & Alloy, 2009).

Rumination according to this theory, is not used to solve the problem to help change or make the symptoms go away, but rather, fixate on the difficulties and emotions, with no necessary steps to engage towards a course of action. It is typically characterised by persistent aversive notions and feelings (Nolen-Hoeksema et al., 2008). Rumination in this theory is implicated in intensifying and extending the duration of distress, especially depression (Nolen-Hoeksema, 1991). This has been said to happen by means of various mechanisms. To begin with, rumination heightens the outcomes of depression moods on one's thinking, such that, these aversive thoughts coupled with aversive memories will be used to comprehend one's present conditions (Nolen-Hoeksema, 2003). Secondly, rumination inhibits active problem solving in some way, causing the thinking to be more negative and deadly (Nolen-Hoeksema, 1991). Thirdly, rumination impedes instrumental behaviour (Nolen-Hoeksema, 1991; Nolen-Hoeksema et al., 2008). Furthermore, evidence shows that people who recurrently ruminate, are likely to drive away social support, consequently intensifying their depression. This in turn will only cause mild symptoms to advance into major depression, or elongate present episodes of depression (Nolen-Hoeksema & Davis, 1999). An effective alternative to this, which can alleviate the symptoms according to Nolen-Hoeksema (1991), is the usage of friendly distractions to boost moods and slowly get rid of one's depressive symptoms. This can then instigate problem solving if there is need to do so.

The distractions are a type of thinking and way of behaving that have the potential to divert an individual's attention from their depressed attitudes, outcomes etcetera to more pleasant and nonthreatening cognitions, emotions, and behaviours; that are captivating, engaging, fulfilling, and able to bring out progressive reinforcement (Nolen-Hoeksema, 1991; Nolen-Hoeksema & Morrow, 1993). These include doing some exercises (going for a run, riding a bike), having lunch with friends, focusing on

schoolwork, or focusing on a work-related project. Practical and workable distractions do not encompass risky or damaging actions such as binge drinking, drug abuse, violent behaviours, reckless driving, or any other behaviours that keep you distracted temporarily but detrimental over time (Nolen-Hoeksema et al., 2008).

3.5.2.1 Research using the Response styles theory of rumination

Since earlier studies of rumination focused on its effects on depression, a scale was advanced for measuring rumination, and it came to be known as the "Ruminative Response Scale (RRS)," a component of the "Response Styles Questionnaire" (Nolen-Hoeksema & Morrow, 1993). Studies that used this scale observed stability in rumination tendencies in depressive participants including those that had shown significant changes in depressive symptoms (Just & Alloy, 1997). For instance, in a longitudinal study lasting 18 months, studying participants who had just been bereaved, rumination remained relatively stable despite a substantial rapid drop in depression levels during the said period (Just & Alloy, 1997; Nolen-Hoeksema et al., 1994).

Additionally, prospective longitudinal studies that have used this scale found that ruminators when in distress, had enduring depression most likely to result into major depressive disorder (Just & Alloy, 1997; Sarin et al., 2005). Similar findings as above were reported in child and teenage samples (Abela et al., 2002; Nolen-Hoeksema et al., 2007), and in studies conducted world over (Ito et al., 2006; Raes et al., 2003). Notably, even research using other measures of rumination, aside RRS, for instance, those focusing on perseverative self and individual problems, also established similar connections with depression (Luminet et al., 2004; Mor & Winquist, 2002; Siegle et al., 2004).

Furthermore, several rumination experimental studies used induction. Induction involves two conditions, the rumination induction condition, and the distraction

induction condition. The rumination induction involved asking participants to concentrate on meanings, roots, and implications of their present emotions for about 8 minutes. For instance, “Think about the level of motivation you feel right now,” “Think about the long-term goals you have set.” The prompts are neutral and normally should not cause any reaction in a non-dysphoric individual. However, because dysphoric patients are usually negative about most things, they are likely to be more dysphoric. The distraction induction condition, however, was meant to temporarily divert subjects’ minds from everything and instead concentrate on non-animate images. For instance, they were asked questions like, “think about a fan slowly rotating back and forth,” “think about the layout of your local play park.” The statements should normally have no effects on non-dysphoric participants but make distressed individuals temporarily not as much depressed. Several studies found that induction using rumination showed a noteworthy increase in feelings of dysphoria among distressed participants, but not in the ordinary participants. While induction using distraction on the other hand was associated with decrease in feelings of dysphoria among distressed participants, but found zero effects among ordinary participants (Nolen-Hoeksema & Morrow, 1993).

3.5.3 The Stress reactive theory of rumination

This theory is an extension of the “response styles theory” and was developed by Lauren Alloy and colleagues (Alloy et al., 2000). The stress reactive theory of rumination proposes examining rumination in terms of present feelings of sadness (Conway et al., 2000), as well as ruminating about negative inferences that occur after stressful/traumatic situations (Alloy et al., 2000; Robinson & Alloy, 2003). The term was coined to refer to repetitive thoughts on negative inferences that came because of stress triggering events. It also refers to the occurrence of rumination in reaction to negative mood, negative circumstances, or both (Spasojevic et al., 2004). It was further

extended to other affective states beyond depression. Alloy et al. (2000) proposed that rumination happened before inception of depressive symptoms, as opposed to the response styles theory which was of the view that rumination happened as a way of responding to depressive symptoms (meaning after exhibiting symptoms) (Nolen-Hoeksema, 1991).

This rumination is associated with retrospective number of both major depression episodes, and hopelessness depression episodes over a lifetime (Alloy et al., 2000). Similarly, it has also been linked to prospective inception, and length of both major depression episodes, and despair related depressive episodes. Evidence from various studies show that people who make unhealthy insinuations (due to their negative cognitions) when faced with stressful situations risk developing depression, compared to individuals practicing healthy cognitions (Abramson et al., 1995; Alloy & Abramson, 1999; Robinson & Alloy, 2003). More so, people who are likely to blame negative happenings on world-wide aspects, plus always deduce undesirable outcomes or personal characteristics whenever they face a negative situation, risk suffering from depression, when they encounter negative life events than those who do not hold negative inferences (Abramson et al., 1995). Furthermore, people who are always seeking approval from others on how to live their lives are likely to be prone to depression when faced with stressful situations (Beck et al., 1987). Robinson and Alloy (2003) went on to hypothesise that people with both negative cognition tendencies and ruminating habits of negative interpretations at any given adverse/risk/stressful situation, risk developing depression.

3.5.3.1 Rumination research using the stress reactive theory

Since “stress reactive rumination” is tension/strain based, it is mostly measured using the “Stress Reactive Rumination Scale (SRRS),” a scale created from the

"Response Styles Questionnaire (RQS)." It has items in which participants indicate how they experience each situation. For instance, it includes items that request the participant to "think about how a stressful event was their fault" as well as "thinking about how certain things always happen to them" following a serious undesirable incident. When they tested their scale in both retrospect and prospect, they discovered an interaction between an individual's risk (in terms of cognition and "stress reactive rumination"), and the likelihood of suffering major depression (Alloy et al., 2000; Robinson & Alloy, 2003). Individuals without depression who were in a habit of inferring negatively when responding to stressful situations, and later ruminate about them, were prone to a greater chance of lifetime occurrence of serious depression and highly likely to be found with major depression in the next follow up (during the 2.5-year longitudinal study period), in comparison with those who did not engage in this habit. The findings of an interplay between stress reactive rumination and negative cognitions (according to Alloy and colleagues), were much stronger in predicting major depression than those found by Nolen-Hoeksema and colleagues (Nolen-Hoeksema, 2000) when depressive rumination interacted with negative cognition (Alloy et al., 2000). This led to a conclusion that "stress-reactive rumination" was a strong player in the inception of depression (Papageorgiou & Wells, 2004; Robinson & Alloy, 2003). However, its occurrence before the beginning of depression was recommended for further investigation (Alloy et al., 2000).

Having reviewed rumination in this section, and religious coping literature prior to this, the next section reviews resilience, followed by parental responsibility, and then social support.

Moderator Variables

Using Lazarus and Folkman's model as a basis, two personal, and one social environmental resource were examined as moderator variables in this study. This is because they are characteristics that have the potential to influence coping decisions as well as strengthen or weaken coping mechanisms. As such they have the potential to buffer the detrimental effects of negative religious coping and rumination. Personal resources that were examined in this study were resilience and parental responsibility. While the social environmental resource examined in this study was social support and the reasons for these was also highlighted in section 1.1 of chapter 1. Therefore, the next section is about the concept of resilience, which is followed by parental responsibility, then social support.

3.6 Resilience (Moderator Variable)

3.6.1 Definition

Resilience is multifaceted and defined differently. For instance, resilience has been defined as the process to prevail over adverse effects of risk exposure; successful coping during traumatic times; and capacity to maintain a sound mind even in the most difficult threatening times (Fergus & Zimmerman, 2005; Masten et al., 1990; Zimmerman & Brenner, 2010). On the other hand, Smith & Carlson (1997) petitioned the definition into three parts: Firstly, as an equivalent to coping – viewed as an effort to bring back, or maintain the status quo, both within and outside the individual, during major threatening situations, through mental and behavioural processes. Secondly, as recovery in traumatic situations like injury or abuse. Thirdly, as a protective factor or process in difficult times. Furthermore, resilience is defined by Lee et al. (2013) as a

dynamic process with abilities to both protect one during adverse conditions, and to help better their outcomes in risky circumstances. Better still, others see it as a resource that is available to protect one from the consequences of risks (Antonovsky, 1979; Robertson et al., 2015). The above definitions show a variation among studies, however, Luthar et al. (2000) insisted that despite these variations, "Resilience" is a course of competence, while "Resiliency" refers to a specific personality trait (Luthar et al., 2000).

3.6.2 Resilience Theories

Two models, the compensatory and protective factor models, remain popular in the resilience discourse. The compensatory model indicates that positive resources may help adolescents in difficult circumstances (Zimmerman et al., 2002). For instance, while one is at risk of alcohol abuse if they associate with peers who abuse alcohol, this risk may however be offset by participation in school and community programs. The model suggests that both the risk and compensatory aspects are important predictors of outcomes (Garmezy et al., 1984; Masten et al., 1999; Zimmerman, 1998; Zimmerman & Arunkumar, 1994). Several studies have tested this assumption (Zimmerman & Arunkumar, 1994).

Contrariwise, the protective factor model proposes components that alter impending risk consequences. This may happen through risk-to-protective or protective-to-protective channels (Brook et al., 1990). The former (risk-to-protective) works by weakening the impact of the risk factor either through intensity or mere presence of the protective factor. For instance, it was observed that the effect of associating with violent friends (risk component) on violent behaviour (adverse outcome) of male adolescents, was lesser in those with high perceived maternal support (protective component) (Zimmerman, 1998). The latter (protective-to-protective) works by enhancing the

influence of the compensatory factor. For instance, the impact of partner support on psychological wellbeing could be enhanced by maternal support (Zimmerman et al., 2002).

3.6.3 Research on resilience

Resilience research dates back to the 1970's, it continues to appreciate variations in individuals faced with adversity, and endeavors to explain adaptational differences, for instance, in children living with parents with a mental disorder diagnosis (Garmezy, 1974; Garmezy & Streitman, 1974; Masten et al., 1990), parents living with mental conditions (Masten & Coatsworth, 1995, 1998), children of alcoholics (Werner, 1986), social hardships (Garmezy, 1991; Werner & Smith, 1992), abuse (Cicchetti & Rogosch, 1997), disasters (Wright & Masten, 2005), or urban poverty and neighbourhood violence (Fredrickson et al., 2003; Luthar, 1999; Martinez & Richters, 1993).

Initially, works on resilience, solely focused on individual assets of resilient children including, autonomy and high self-esteem (Masten & Garmezy, 1985). Later, researchers realized that resilience might be a product of factors outside the child, of which these factors were then categorized into three groups as leading to the development of resilience. Firstly, qualities of individual children, secondly – background characteristics, then thirdly – wider environmental aspects (Masten & Garmezy, 1985; Werner & Smith, 1992). Two decades later, the focus shifted more to understanding how resilience could be capitalized into workable strategies for when individuals are faced with adversity (Luthar et al., 2000).

Resilience has also been found to promote wellbeing, for instance, increase wellbeing (Cohn et al., 2009). It has shown protective mechanisms against adverse outcomes of trauma and other disorders (Lee et al., 2013). Resilience has been shown

as one of the reasons why some adolescents going through risky conditions will be able to overcome no matter how grave the situation seems to be (Luthar et al., 2000; Zimmerman & Arunkumar, 1994). Research shows that resilience is a positive factor (compensatory, promotive, and protective factor), against many risks that youth are prone to, especially in relation to substance abuse, violence, and sexual behaviours (Fergus & Zimmerman, 2005; Luthar, 1999).

Resilient individuals engage in behaviours that promote emotional well-being (DeRosier et al., 2013; Masten et al., 1999; Sood et al., 2013). Resilience safeguards against psychological distress (Sood et al., 2013). Resilience positively correlates with self-esteem (DeRosier et al., 2013), and wellbeing in general (Gonzalez & Padilla, 1997). Meanwhile, it negatively correlates with depression and related disorders (Lee et al., 2013; Salami, 2010; Smith & Carlson, 1997). For example, one study observed its protective role in the positive relationship between violence and posttraumatic stress disorder (PTSD) in high school adolescents (Salami, 2010). Higher levels of resilience weakened the positive violence-PTSD relationship (Salami, 2010). Other studies also found the protective effects of resilience in adversity/risk outcomes among children and youth (Lee et al., 2013; Smith & Carlson, 1997). Furthermore, resilience has been shown to be affected by a range of factors such as individual qualities, family characteristics, and the broader social environment (Masten & Garmezy, 1985; Werner & Smith, 1992).

Additionally, research shows that individuals having a greater amount of resilience associated attributes, are in a better position to adapt during adversity such as trauma related events, injury, employment loss, death of spouse, and many more. Whereas individuals with fewer of these attributes will find it hard adapting (Luthar & Cicchetti, 2000). For instance, research following adolescent mothers with natural mentors

observed that having a mentor protected adolescents from adverse mental health outcomes (Hurd, 2010a). They found that adolescent mothers with mentors adjusted well mentally compared to those without. They regarded mentorship as a resilience builder, with protective mechanisms.

Furthermore, studies argue that using resilience helps to concentrate on individual and environmental strengths, to make use of factors that can protect one from adverse outcomes of risks they might face. The opposite, or low levels of resilience puts young mothers at danger for depression and related adversity (Salazar-Pousada et al., 2010). For instance, a study comparing pregnant adult women and pregnant adolescents found very low resilience levels below the median score in pregnant adolescents compared to adult women. They also found non-significant effects of resilience against depressive symptoms. Furthermore, other research found that some mothers were able to adapt well to motherhood because of resilience promotive aspects like self-efficacy, mentors, supportive environments and many more (Carey et al., 1998; Coll et al., 1996; Klaw et al., 2003). Due to scarcity in resilience research in the parenting adolescents' discourse, more studies in this area are imperative (Hurd, 2010a; Salazar-Pousada et al., 2010).

Having reviewed resilience literature, the next section reviews the parental responsibility concept (another personal resource) and its existing literature.

3.7 Parental Responsibility (Moderator Variable)

3.7.1 Definition

Parental responsibility in this study is a concept coined by Campis et al. (1988) as part of the parental locus of control concept. It is a wide-encompassing concept broadly defined as one's duty, right, power, responsibility, and authority they have on their

children, by virtual of them being the rightful parent (Stewart, 2006). According to Campis et al. (1988), individuals could exhibit internal or external parental responsibility, which could also be high, moderate, or low (Campis et al., 1986).

Some scholars found that many women believed that parental responsibility in females began as early as adolescence, when one was aware that one day, they would be a parent, insinuating that even at adolescence one has the potential of having some form of responsibility if they happened to be a parent (Perälä-Littunen & Böök, 2012). On the other hand, men believe that parental responsibility for them began when they knew about the baby, that is at pregnancy. Whereas for others it began at the time the baby was born, better yet for others it was when the child got older, say at two years, while for others it was when their children were much older (Perälä-Littunen & Böök, 2012). Also, studies show that many men perceived parental responsibility to come naturally for women much more than for men (Perälä-Littunen & Böök, 2012).

3.7.2 Research on parental responsibility

A fraction of studies postulates that parental responsibility involves making decisions such as, right time to have a child, whom to have the child with, finances surrounding upkeep of child (in a typical couple that would intel finances for both) (Sassler et al., 2009), whether one would plan or qualify for paid maternity and/or paternity leave, and family the child will be born (Perälä-Littunen & Böök, 2012). Also, some studies argue that unlike in the past, becoming a mother in today's modern world is a choice rather than a human rights infringement or waiting fate (Tardy, 2000). Adding that wilfully deciding to do so may make one more responsible as they undertake the parenting role (Tardy, 2000). However, this may not be the case for disadvantage or vulnerable people not to mention adolescents.

Furthermore, parental responsibility is also said to involve the component of caring, and that this was in turn attached to worry and commitment (Noddings, 2013). Which indicates that the more responsible a parent, the higher the likelihood for quality care and better commit to ensure that the children are well taken care of and modelled into responsible individuals themselves (Noddings, 2013). Evidence also suggests that parental responsibility is also connected to the mother's ability to stay healthy physically, to make sure one takes care of themselves and gives birth to a healthy baby and takes care of the baby including its health. This is believed to have a bearing on their mental health as well (Noddings, 2013; Perälä-Littunen & Böök, 2012). For instance, a study involving a clinical sample of mothers and their children (aged between seven and twelve years old) seeking treatment for anxiety, revealed that mothers who were more anxious clinically, exhibited elevated parental responsibility beliefs than those whose anxiety levels were normal. Those parents with normal anxiety levels exhibited favourable parental responsibility levels. This study highlighted the need to focus on parental responsibility tendencies and beliefs in the treatment of child as well as parent anxiety disorders (Apetroaia et al., 2015).

Additionally, parental responsibility just like it's umbrella scale (parental locus of control scale) has been related to a parent's perceived duty to the child, parent's role, and overall parent's behaviour and conduct. It positively correlates with personality constructs like efficiency, self-esteem, competence and many more (Campis et al., 1986). People with internal parental responsibility (more responsible individuals) usually have high self-esteem, competence, and seek social support (Coleman & Karraker, 1998; Hassall et al., 2005). Individuals with external parental responsibility (less responsible parents) are likely to have low self-efficacy, lack of control, experience frustration, and feel less competent. This in turn has the potential to interact with their

coping attitudes in stressful situations which would have a detrimental bearing on their mental health (Hassall et al., 2005).

Having reviewed parental responsibility literature, the next section reviews the social support concept (a social environmental resource) and its existing literature.

3.8 Social support (Moderator Variable)

3.8.1 Definition

Social support is defined as awareness of being loved, cared for, readily accessible assistance, and sense of belonging to mutually helpful relations and groups (Cobb, 1976; Taylor, 2011; Wills, 1991). Social support is a multidimensional concept consisting of resources such as emotional support (including, concern, affection, closeness, reassurance, consideration, empathy, warmness, and attention), informational support (guidance, advice or suggestions), or companionship (sense of belonging), tangible (financial help, material goods, or services) or intangible such as personal advice (Langford et al., 1997; Slevin et al., 1996; Taylor, 2011; Uchino, 2006; Wills, 1991). It emanates from several avenues including blood relations, peers, romantic partners, domestic animals, acquaintances, schools, churches, mosques, community groups, community clubs, work colleagues, organisations, and many more (Taylor, 2011). Social support is also a multidisciplinary concept cutting across several fields (Slevin et al., 1996).

3.8.2 Research on social support

Social support has been linked with increased psychological wellbeing during response to significant life events (Cobb, 1976; Cohen & Wills, 1985). Additionally, it has been linked with protective abilities for people suffering from a wide range of

pathologies including depression, alcoholism, and social breakdown conditions (Cobb, 1976; Cohen & Wills, 1985). Substantial amount of evidence has linked social support to mental health outcomes of adolescent mothers. For instance, higher social support levels have been linked with great benefits in adolescent mothers such as better well-being (Davis et al., 1997; Hurd, 2010a; Hurd & Zimmerman, 2010a). Social support is a safe avenue by which adolescent mothers pour out their emotions, greatly influencing their mental well-being (Hurd & Zimmerman, 2010b; Rhodes, 2005). The feeling of having support has been linked to some form of equilibrium in terms of the young mothers' experiences, thereby promoting better long-term outcomes (Hurd & Zimmerman, 2010b). Its generally weakly positively correlated with wellbeing in children and adolescents but greatly related to healthy psychological functioning in older persons, and that this trend increases with age (Chu et al., 2010). Additionally, social support is a significant builder of better self-discipline which then leads to resilience building, and in turn leading to cushioning of the adverse impact of life stressors on one's mental health (Wills & Bantum, 2012). Furthermore, it buffers stress influence on psychological well-being as revealed in college students (Chao, 2011).

Expectedly, evidence shows that adolescent mothers with lesser social support were set out for poor mental health, specifically more depressive symptoms in comparison to their counterparts with significantly greater social support (Brown et al., 1987; Hurd & Zimmerman, 2010b; Stevenson et al., 1999). Also, social support is negatively related to stress in pregnant/parenting adolescents at some point, but positively over time (Devereux et al., 2009). Moreover, low support predicts depression in the young mothers after childbirth and beyond (Bryant et al., 1999; Burchinal et al., 1996; Huang et al., 2014; Hurd & Zimmerman, 2010b; Zeiders et al., 2015). Worse still, breeds dissatisfaction with life and suicide ideation (Allgöwer et al., 2001). Nevertheless,

while there is an indication of social support benefits in adolescent mothers, there is literature indicating that a greater percentage lack this resource compared to their older counterparts (Edwards et al., 2012; Logsdon et al., 2002; Maynard, 1995), citing among other reasons, conflictual relationships with family especially parents, specifically mothers (Edwards et al., 2012).

Research with adult pregnant women, which is more in abundance than research among adolescent girls, shows that high quality partner social support, contributes to better postpartum well-being in the mothers (Stapleton et al., 2012). A longitudinal study showed that adult mothers who perceived greater social support from their partners during mid-stages of their pregnancy, experienced less mental distress postpartum (Stapleton et al., 2012).

Having reviewed social support literature, and the literature of other variables in the preceding segments, the following part summarizes this chapter by discussing the research gaps.

3.9 Summary of empirical review and research gaps

This review shed light on existing literature of this project's key variables: Parenting stress (IV), psychological mechanisms namely, religious coping and rumination (mediators), and resilience, parental responsibility, and social support (moderators), and how they are related to mental health (positive affect and mental distress) (DVs). It revealed the potential protective roles of positive religious coping, resilience, parental responsibility, and social support, and the potential risk factor roles of negative religious coping and rumination. However, there exist several research gaps in the literature around these variables and generally in the adolescent parenting stress

and mental health discourse. Below are some of the gaps that were identified that this research endeavoured to bridge.

First, while this chapter discusses various relations among parenting stress and our other variables of interest, it also reveals that the adolescent mother mental health discourse remains unestablished compared to the adult mothers. There is still a lot to understand in terms of underlying mechanisms at work in this relationship, this is because, previous studies have predominantly focused on the direct effects of parenting stress on mental health (Colletta, 1983; Hipwell et al., 2016; Huang et al., 2014; Huang et al., 2019; Larson, 2004; Leigh & Milgrom, 2008; Venkatesh et al., 2014). And there are very few studies that have examined mediators in the parenting stress - mental health relations. However, these studies have examined the mediating effects of problem-focused coping and emotion-focused coping in the relationship between parenting stress and depression (Wen & Chu, 2020). Thus, it was reasonable for me to investigate other additional mediators in this connection such religious coping and rumination that are yet to be examined. Thus, the current project unlocks other pathways through which parenting stress might affect the mental health of adolescent mothers.

Second, while religious coping influences psychological functioning, several gaps still exist in this literature in that most of these studies have been in medical/rehabilitation/trauma samples or care givers of chronically ill patients, or meaning making in marginalised samples (Fitchett et al., 1999; Hebert et al., 2009; Pargament et al., 1998; Pearce et al., 2006; Sherman et al., 2009), and have predominantly measured direct religious coping - mental health relations and rarely examined it as a potential medium through which existing adversity/stress/difficult circumstances may affect one's mental health (Abu-Raiya et al., 2015; Hebert et al., 2009; Pargament et al., 1998; Park et al., 2018; Pearce et al., 2006; Sherman et al., 2009;

Tarakeshwar & Pargament, 2001). In the few rare studies that actually examined religious coping as a mediator (but not between parenting stress and mental health), found that negative religious coping mediated the relationship between negative situation appraisal and mental well-being in migrant and refugee samples (Maier et al., 2022). Another study reported that negative religious coping served as a mediator between racist events and psychological distress (Szymanski & Obiri, 2011). Therefore, whether religious coping can mediate parenting stress - mental health relations in adolescent mothers is unclear. Thus, it was reasonable to investigate if religious coping could mediate the effect of parenting stress on adolescent mothers.

Third, while rumination is implicated in distress/poor wellbeing (Miranda & Nolen-Hoeksema, 2007; Nolen-Hoeksema, 1991; Nolen-Hoeksema et al., 2008; Smith & Alloy, 2009; Smith et al., 2006), several gaps still exist in literature. Most of the said studies have focused on direct relationships between rumination and mental health, with very few examining it as a mediator. The few that did so, examined it in other domains. For instance, one study showed that rumination served as a mediator in the relationship between childhood trauma and mood (Kim et al., 2017). And another study showed that self-rumination served as a mediator in the relationship between independent self-construal and happiness (Elliott & Coker, 2008). Thus, it is not clear whether rumination can mediate parenting stress - mental health relations in adolescent mothers. Hence, considering their age and the new assumed role, it was reasonable to investigate rumination mediation role in adolescent mothers' parenting stress - mental health relationship.

Fourth, while resilience influences mental health in several spheres of adversity among ordinary adolescents (DeRosier et al., 2013; Fergus & Zimmerman, 2005; Gonzalez & Padilla, 1997; Salami, 2010; Smith & Carlson, 1997; Sood et al., 2013),

this has not been the case with adolescent mothers. Several gaps still exist in this literature in that there is scarcity of resilience research in the parenting adolescents' mental health discourse. Also, there has been recommendation for more studies in this area because the few existing studies did not find the relationship with mental health. Others found very low levels of resilience (below median scores) in adolescent mothers compared to their older counterparts or ordinary adolescents (Easterbrooks et al., 2011; Kishore et al., 2018; Salazar-Pousada et al., 2010). While others only found protective effects against mental distress among factors related to resilience but not resilience itself (Carey et al., 1998; Hurd, 2010a). Thus, there are still inconclusive results in adolescent mother resilience - mental health discourse (Carey et al., 1998; Hurd, 2010a; Salazar-Pousada et al., 2010).

Moreover, the above-mentioned research predominantly concentrated on direct resilience and mental health relations (Carey et al., 1998; Easterbrooks et al., 2011; Hurd, 2010a; Salazar-Pousada et al., 2010). And the few that examined resilience as a moderator, found that resilience significantly buffered the effect of stress on depressive symptoms in non-pregnant and non-parenting adolescents (Anyan & Hjemdal, 2016). Resilience also moderated the relationship between violence and posttraumatic stress disorder (PTSD) in ordinary high school adolescents (Salami, 2010). And another study found that resilience moderated the adversity/risk – outcome relations in children and youth (Lee et al., 2013; Smith & Carlson, 1997). While another study found that resilience partially mediated the stress – depressive and anxiety relations school going adolescents. However, none of these relations have been in the parenting stress – mental health relationship, let alone in adolescent mothers. Thus, whether resilience would influence indirect parenting stress - mental health relations is unclear. Therefore, it was reasonable to investigate if resilience would influence mediating negative religious

coping and rumination roles in the parenting stress - mental health relationship in adolescent mothers.

Fifth, while parental responsibility influences psychological health (Apetroaia et al., 2015; Coleman & Karraker, 1998; Hassall et al., 2005), its role in adolescent mothers is not known as there is under research of this construct in adolescent mothers. And the fact that studies link family planning or the choice to have a child to parental responsibility (Perälä-Littunen & Böök, 2012; Tardy, 2000) gives this study more urgency because this might not be the case with many adolescents especially in LMICs. This is because many may not have access to adequate sexual reproductive health services to help protect themselves from unwanted pregnancies. Hence, this puts a question mark on the parental responsibility level of adolescent mothers if studies above indicate that choice has an influence in this responsibility. Thus, examining parental responsibility in adolescent mothers was important, specifically to find out if it would buffer the indirect parenting stress-mental health relationship.

Also, considering that they are young themselves and are expected to be responsible for another human being, is a scenario worth investigating to find out its influence if any in adolescent mother mental health. Besides, its buffering roles have not been examined in both adult and adolescent mothers' mental health discourse in any previous studies to the best of my knowledge. Thus, it was reasonable to investigate if parental responsibility would moderate the mediating effects of religious coping and rumination in the parenting stress - mental health relationships in adolescent mothers.

Sixth, while social support protects against mental distress, several gaps still exist in this literature in that some scholars suggest that a greater percentage lack this resource compared to their older counterparts (Edwards et al., 2012; Logsdon et al., 2002; Maynard, 1995). Also, adult mother research is more established than adolescent mother

research when it comes to social support and there is a lot to uncover (Huang et al., 2014; Stapleton et al., 2012). This is because focus has mostly been on direct social support - parenting stress or social support - psychological functioning relations (Barth et al., 1983; Devereux et al., 2009; Huang et al., 2014). And there are very few studies that have examined social support in another capacity, but these have not been in the parenting stress – mental health relations. For instance one study examined social support as a moderator in the relationship between life events and depressive symptoms in adult pregnant women (Kishore et al., 2018). Another study examined it as a mediator between parenting status and psychological wellbeing in pregnant, parenting, non-pregnant, and non-parenting groups (Barth et al., 1983). And another study examined it as a mediator in the relationship between maternal interpersonal security and relationship satisfaction on maternal and infant outcomes (Stapleton et al., 2012). The current study therefore focused on the moderating effects and not mediating effects. Moreover, whether it would moderate indirect parenting stress - mental health relations of young mothers are unclear. Thus, it was reasonable to investigate if social support would moderate indirect religious coping and rumination influences in the parenting stress - mental health relationships in adolescent mothers.

Seventh, prior research on adolescent mothers' mental health has mostly been conducted in the Western and other wealthier regions. This creates a gap from a low middle-income country perspective like Zambia, where most adolescent mothers are economically vulnerable, and generally neglected by government (Chansa et al., 2019; Mukwato et al., 2017; Mwape et al., 2012). Hence, contributing to the urgency to conduct the present research.

Eighth, service gaps in LMICs such as government neglect of adolescent mother mental health contributed to the need for such research. Specifically, lack of screening

programmes for adolescent mothers during antenatal and postnatal, lack of mental health awareness and prevention programmes, and lack of mental health campaigns for youths (Chansa et al., 2019; Mukwato et al., 2017; Mwape et al., 2012).

Thus, to bridge the above research and service gaps, I attempted to investigate the psychological mechanisms underlying the relationship between parenting stress and mental health of adolescent mothers in Zambia. By doing so, this study could contribute to achieving more holistic and comprehensive conclusions about this discourse globally, and LMICs locally. Additionally, this study endeavours to make significant theoretical, policy, and applied contribution with the goal of promoting the wellbeing of adolescent mothers.

CHAPTER 4: THEORETICAL FRAMEWORK

4.1 Introduction

The current study achieved the research aim using the "Lazarus and Folkman's (1984) stress and coping theory," with an addition of other variables that were arrived at with the help of five other theories. The five other theories included: "Resilience theory," "parental responsibility perspective," "stress and coping perspective of social support," "positive and negative religious coping theory," and the "stress reactive theory of rumination." This allowed the other theories to fill in the gap where Lazarus and Folkman's theory was unable to cover. They also accentuated the role of the coping mechanisms. This section starts by presenting the transactional stress and coping theory by Lazarus and Folkman, followed by the resilience theory, then the parental responsibility perspective, then the social support theory, followed by the religious theory, and finally, the stress reactive theory of rumination.

4.2 Lazarus and Folkman's (1984) transactional stress and coping theory

Richard Lazarus and Susan Folkman proposed the classic, 'stress and coping theory' in 1984. They proposed that stress is a transaction between an individual (who has multiple systems including cognitive, physiological, affective, psychological, and neurological) and his or her multifaceted environment. This model posits that the experience of stress depends as much on the individual's cognitive appraisal of a potential stressor's impact as it does on the event or situation itself (Antonovsky, 1979). The two went on to propose that we cannot fully understand stress by examining environmental events (stimuli) and people's behaviours (responses) as separate entities; rather, we need to consider them together as a transaction, in which each person must continually adjust to daily challenges. According to the transactional model, the process

of stress is triggered whenever stressors exceed the personal and social resources that a person can mobilize to cope. Lazarus and Folkman (1984) believed that the transactions between people and their environments are driven by their appraisal of potential stressors.

This theory posits that when an individual encounters a stressful situation, he or she will make a cognitive appraisal about the situation. Then depending on the appraisal, he or she will decide the coping method to employ, which will then bring about adaptation or outcomes. They proposed a model of how it happens: Stressor – cognitive appraisal - coping - adaptation / outcome (Lazarus & Folkman, 1984). The adaptation or outcomes at the end of it all can either be positive or negative. This model places emphasis on cognitive appraisal as being a crucial stage of this process as it will lead to a coping decision which will in turn lead to either a positive or negative adaptation. Cognitive appraisal refers to an interpretation or assessment of how stressful a situation or circumstance is, and whether action is required. Cognitive appraisal is further distinguished into two concepts: Primary, and secondary appraisal. Primary appraisal is an initial interpretation or assessment of the stressful situation one finds him or herself in. An initial interpretation of whether a situation is a harm / loss, threat, or challenge. An initial interpretation of whether a situation is irrelevant, benign-positive, threatening, or challenging. Secondary appraisal involves one evaluating their abilities to deal with the stressor at hand effectively if it was appraised as potentially threatening or challenging (Gerrig et al., 2015). Simply looking into oneself and determining if one has resources and capabilities to deal with the stressor at hand. It is at this stage that one determines the coping strategy. The coping strategy or style then leads to adaptation or outcome. Cognitive appraisal continues as the potentially stressful events and corresponding coping responses are constantly evaluated. In this stage, feedback from

new information or ongoing coping efforts, and their efficacy are used to check on the accuracy of both primary and secondary appraisals, for further action if necessary.

The coping styles or strategies differ or vary from being specifically positive to denial. However, they have been broadly categorized based on similarities. The common broad categories are problem focused coping, behavioural focused coping, and emotional focused coping (Lazarus & Folkman, 1984). Problem focused coping involves taking action to eliminate or lessen the effects of the stressors. Identified examples of problem focused coping are seeking social support or planning how to deal with the threat or challenge (Carver et al., 1989). A person is likely to engage in problem focused coping if he or she is confident that they have the capabilities and resources to tackle the challenge or threat. Their coping response will have analyses like ("I will try to understand the problem better," "I am devising an action plan and will execute it').

Behavioural focused coping involves improper suppression of emotions coming out as inappropriate behaviours for instance being aggressive or hyperactive. Emotion focused coping refers to coping which involves efforts to reduce pain. This includes actions such as avoidance, minimization, distance, emotional expression, and denial (Lazarus & Folkman, 1984). An individual is likely to engage in this one when he or she does not believe they have the capacity to deal with the situation effectively, or when they feel they lack control. He or she is likely to cope with analyses like wishful thinking ("I wish I could change what is happening right now or how I feel"), distancing ("I just want to forget the whole thing"), focusing on the positive ("I will try to look for positives that might come out of this situation") (Lazarus & Folkman, 1984). More broadly, these coping strategies are categorised as adaptive and maladaptive.

Studies investigating concepts related to Lazarus and Folkman's theory found adaptive coping strategies to promote psychological well-being and protect against

psychological distress that could emanate from traumatic events (Gibbons et al., 2014). They found prior prevention positive behaviours used in the process, including personal strengths like, optimism, hope, and self-efficacy (sense of control); and communal engagement behaviours like social support to help them choose more adaptive coping strategies (Gibbons et al., 2014). This justified the use of "Lazarus and Folkman's stress and coping theory," to which I incorporated more variables with the help of five complimentary theories below in creating the theoretical framework for this research as elaborated below.

4.3 Resilience Theory (compensatory and protective models)

The resilience theory through the compensatory and protective models proposes that using resilience helps to concentrate on strengths within the individual as well as in their environment so as to make use of factors that can, (1) counteract or neutralize effects of risk factors, (2) protect one from adverse outcomes by modifying the relationship between risks and outcomes through lessening the effects of the risk factor, or by increasing the effects of the compensatory factor (Hurd, 2010a). Evidence shows that individuals with high resilience tend to engage in behaviours that promote emotional well-being (DeRosier et al., 2013; Masten et al., 1999). This is because high resilience has been found to be correlated with high self-esteem, optimism, among other positive qualities (DeRosier et al., 2013). Qualities that drive individuals to mobilize their individual strengths as well as engage their support system if need arises, to tackle stressful situations (Yali & Lobel, 2002). This implies that individuals with high resilience are optimistic and likely to get through whatever challenge comes their way. They are also confident enough to engage in specific behaviours that will lead to desired outcomes. Thus, could benefit the mental health of the parenting adolescent girls.

Considering this viewpoint, resilience was incorporated into the theoretical framework to explain the appraisal process when one is faced with a potentially stressful situation. As well as how one would mobilise individual and social environmental resources to buffer the negative effects of stressors.

4.4 Parental responsibility perspective

Parental responsibility just like it's umbrella scale ("parental locus of control scale") has been related to parent's perceived duty to the child, parent's role, and overall parent's behaviour and conduct. It was also found to be related to personality constructs like self-efficacy, self-esteem, and competence (Campis et al., 1986). People with internal parental responsibility (more responsible parents) are likely to have higher self-efficacy, self-esteem, tend to exhibit higher levels of competence, and likely to seek social support (Coleman & Karraker, 1998; Hassall et al., 2005). Individuals with external parental responsibility (less responsible parents) are likely to have low self-efficacy, perceive lack of control, experience frustration, and feel less competent. This in turn has the potential to interact with their coping attitudes in stressful situations which would have a bearing on their mental health (Hassall et al., 2005). Thus, considering this perspective, parental responsibility was incorporated into the theoretical framework to explain how one's level of responsibility would be used in the appraisal process when one is faced with a potentially stressful situation. As well as how this would work to offset stress by interacting with the coping strategies as a buffer.

4.5 Social support from the stress and coping perspective

According to the social support perspective coined from "Lazarus and Folkman's 1948 stress and coping theory," social support lessens the effects of stressors on health in various ways (Lakey, 2000). Either, by support gestures from others (such as

receiving advice or reassurance), or through, an individual's belief of readily available support (Solomon & Draine, 1995). Supportive gestures have been linked to enhanced coping performance. Additionally, belief of readily available support has been linked to appraisal of threatening situations as less stressful (Lakey, 2000). This suggests that support stimulates confidence to overcome obstacles including the most difficult ones, knowing that one does not have to face them alone (Davis et al., 1997; Hurd, 2010a). Supportive environments build positivity, security, and determination; qualities that have been linked to better coping strategies because one believes they have capacity to handle the situation (Hurd, 2010a).

However, these perceptions of a supportive system must be built on consistency and equivalence, if they are to be effective in bringing about healthy or adaptive coping (Lakey, 2000). Meaning the support offered must be equivalent to the demands of the stressor (Lakey, 2000). This is to say, each stressful situation or circumstance brings along with it particular forms of social support demands (Cohen & McKay, 2020; Cohen & Wills, 1985; Cutrona & Russell, 1990). For instance, if someone's need is money, then the support to be rendered should also be money. When someone needs physical assistance, such as being by the bed side, then that is what should be rendered (Cutrona & Russell, 1990). This theory enabled me to incorporate social support into this framework to help explain how appraising available social support helps one decide on the coping style to use, which in turn leads to mental health outcomes. This perspective was devised from "Lazarus and Folkman's 1948 stress and coping theory" (Lakey, 2000). And drawing upon Lazarus and Folkman's stress and coping theory, social support qualifies as a contextual capability (strength) that would help an individual in choosing a coping method. At the same time, it may help strengthen or weaken pathways (in this case coping methods) through which parenting stress affects the mental health and thus

qualifying as a moderator (of which moderating/buffering roles have been established by Cohen and Wills (1985) in their paper where they examine main and buffering effects of social support, of which both roles hold). And because previous studies have already examined the mediating role of social support (Barth et al., 1985), the current study therefore focused on the moderating effects and not mediating effects.

4.6 Religious Coping Theory (Positive and Negative)

Religious coping is a theory that was proposed by Pargament and Brant (1998). This theory explains religious coping as a wide range of spiritually and religiously based cognitive, behavioural, and interpersonal responses to stressful situations. Religious coping is segmented into two, positive religious coping and negative religious coping (Pargament & Brant, 1998). One is likely to engage in positive coping when they believe they have capabilities (personal and social resources) to deal effectively with the stressful situation. While one will engage in negative religious coping when they believe they lack control over the situation, or they do not have the ability to control the situation. Positive religious coping includes generous religious appraisals of stressors, strategies that seek spiritual connection, and seeking spiritual support from others (Carpenter et al., 2012). Positive religious coping is said to be an adaptive and effective coping because it has been found to positively impact mental health (Ano & Vasconcelles, 2005; Pargament et al., 2000). Negative religious coping strategies include punishing God reappraisals, venting spiritual discontentment, diminishing God's power, and demonic reappraisals (Carpenter et al., 2012). Negative religious coping on the other hand is said to be maladaptive as it has been found to be a risk factor for poor mental health. Thus, adolescents engaging in positive religious coping are likely to have better mental health outcomes than those engaging in negative religious coping.

4.7 Stress Reactive Theory of Rumination

This theory was developed by Alloy and colleagues and explains rumination as a type of maladaptive strategy. One will likely engage in maladaptive coping when they appraise the situation as stressful (challenge) and believe they do not have personal or social resources to deal effectively with it. It helps explain how maladaptive coping results into negative adaptation, something the "Lazarus and Folkman's 1984 stress and coping theory" did not give details about. The "stress reactive theory of rumination" explains rumination in terms of present feelings of sadness (Conway et al., 2000) and repetitive negative inferences that occur after stressful life situations (Alloy et al., 2000; Robinson & Alloy, 2003). The repetitive thoughts on negative inferences come because of stress triggering events and thus called stress reactive rumination (Alloy et al., 2000). Alloy and colleagues argue that people who make negative inferences or unhealthy insinuations when faced with stressful situations are more likely to develop depression than individuals with more healthy cognitions (Abramson et al., 1995; Alloy et al., 1999; Alloy et al., 2000; Robinson & Alloy, 2003). Robinson and Alloy (2003) hypothesised that people with both negative cognition tendencies and a ruminating habit on negative interpretations following stressful events would likely experience depression. Thus, engaging in rumination in the face of parenting stress is likely to result in poor mental health outcomes.

4.7 Explaining the Concepts

Thus, the theoretical framework for this study was devised from stress and coping theory by Lazarus and Folkman, and by adding extra variables to it with the help of five theories as elaborated above. This section, therefore, reflected on the various concepts to provide a comprehensive theoretical basis for studying the relationships between

parenting stress, psychological mechanisms, and mental health (positive affect, and mental distress) of the adolescent mothers. The potential of the theoretical framework to support the empirical findings of the study makes them appropriate choices for inclusion and use.

By regarding parenting stress as a transaction between an adolescent mother and her environment, we acknowledge that young mothers are faced with considerable stress due to the mothering role they have assumed. And so, depending on how the adolescent mothers appraise the parenting role, that is (as a challenge or not) and depending on whether they believe they have the capabilities to deal with it or not (coping resources), may influence their coping (coping mechanisms), which in turn would lead to either positive or negative outcomes for them. Therefore, considering the above literature and theoretical framework, the following impressions were made about the concepts:

Adolescent mothers with high resilience are likely to have better mental health outcomes. This is because they are likely to possess more positive personal strengths, and are likely to engage their social environment, leading them to more adaptive coping styles like positive religious coping. Besides, the effect of coping style is likely to be much stronger in these girls than those with low resilience. Similarly, a young mother with favourable levels of parental responsibility, and somewhat internal, who knows her role as a parent, and accepts it; is likely to engage in better coping which in turn will lead to better mental health outcomes. And the effect of coping strategy is likely to be much stronger in girls with a certain level of parental responsibility than those with none. Also, those with high social support are likely to have better mental health outcomes. This is because they are confident of their support system to help them pull through any situation and so are likely to be more positive and thus likely to choose adaptive coping styles like positive religious coping. Additionally, it is likely that the effect of the coping

style would be much stronger in these girls than those with low social support. Thus, those who possess two or more are even likely to have the best outcomes because of the many positive resources at their disposal.

Likewise, those who use positive religious coping are likely to have better mental health outcomes because they are likely to be optimistic and stay positive that their God would see them through. They are also likely to seek spiritual support from others, thus, this mobilisation of resources would help them achieve better outcomes. While those who use negative religious coping are likely to have poor mental health outcomes, because they were likely to be pessimistic about their beliefs. Such that they are likely to be discontent with their beliefs and their God, likely leaving them hopeless, and unlikely to seek social support. Thereby, intensifying negative emotions which in turn would cloud their judgement to draw upon positive resources, leading to mental distress outcomes. Equally, those who use rumination coping are likely to have poor mental health outcomes because they are likely to use negative inferences or unhealthy insinuations when faced with stressful situations. Thus, more likely to develop mental distress than individuals who engage in positive religious coping.

4.8 Summary and hypotheses

Therefore, to examine the psychological mechanisms (religious coping, rumination, resilience, parental responsibility, and social support) in the relationship between parenting stress and mental health; and using the discussed literature and theoretical framework to create impressions; the following hypotheses were derived:

Hypothesis 1: Parenting stress would negatively predict positive affect, and positively predict mental distress.

Hypothesis 2: Religious coping (positive and negative) would mediate the

relationship between parenting stress and positive affect, and mental distress.

Hypothesis 3: Rumination would mediate the relationship between parenting stress and positive affect, and mental distress.

Hypothesis 4: Resilience would moderate the indirect relationships between parenting stress and positive affect, and mental distress.

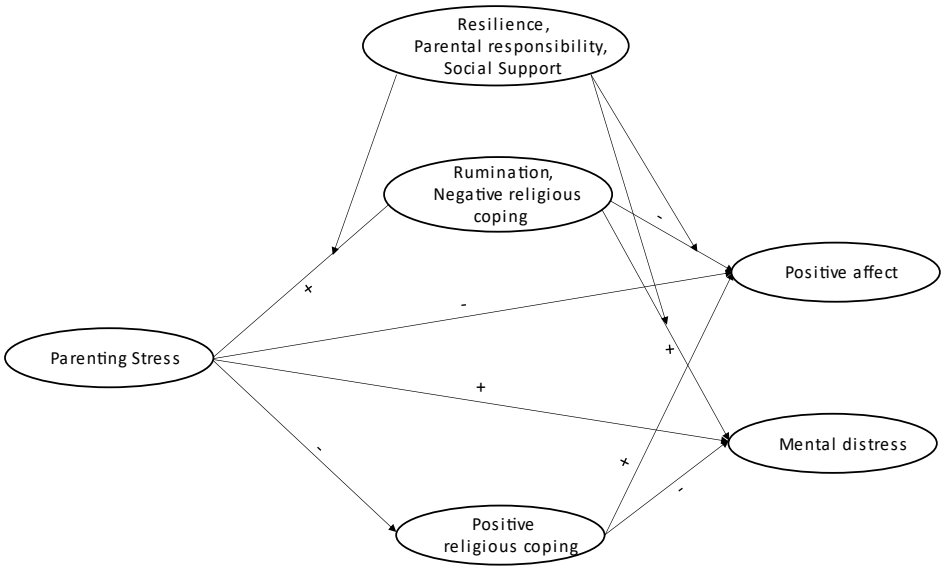
Hypothesis 5: Parental responsibility would moderate the indirect relationships between parenting stress and positive affect, and mental distress.

Hypothesis 6: Social support would moderate the indirect relationships between parenting stress and positive affect, and mental distress.

Thus, based on the hypotheses above, this study constructed the theoretical model below, between the dependent and independent variables (a more detailed model is provided in figure 11).

4.9 Theoretical Framework Model

Figure 2 Theoretical Model. Source: Author's Paradigm



CHAPTER 5: STUDY ONE - PILOT STUDY

5.1 Introduction

This chapter presents study one, the pilot survey study, the first in the sequence since the project employed a sequential mixed method approach. It is preceded by four chapters, introduction, study setting, literature review, and theoretical framework. Being the first study to be conducted in this project, this chapter begins by explaining the rationale for conducting this study, then presents the aims, followed by the methods, and lastly results section.

5.2 Rationale

The main reason for the pilot study was to test reliability and validity of the measures. Another reason was to rephrase questions in the questionnaire if need arose, and to replace measures with very weak psychometric properties. It was also meant to provide valuable insights into data collection for the researcher and research assistants. For example, best mechanisms of accessing the participants.

5.3 Aims

The first aim was to test validity and reliability of the questionnaires. The second aim was to rephrase demographic questions if needed and replace measures with very weak psychometric properties.

5.4 Methods

This section presents the methodology used in this study. It begins by explaining the design and procedure of the study, followed by participants and sampling procedures, then data collection. This is then followed by ethical consideration, data analysis, and lastly conclusion.

5.4.1 Design

The pilot study employed a cross-sectional study design and was conducted between September and October 2020 in Zambia. The study collected primary data and was a paper and pen version.

5.4.1.1 Procedure

The participants were met at either their respective public hospital/clinic (as they accessed their postnatal services and infant under five/vaccination clinic), or at non-governmental organisations working with young women, or safe mothers' shelters, and taken to a quiet place within the premises that was designated for research purposes. The data collection commenced by sharing the research and ethics information with the participants using the information sheet (in the language they could understand as this was also translated into local language, CiNyanja). This was then followed by getting their informed consent using informed consent certificates. Informed consent was asked from all the participants by allowing those who were 18 and above to fill-in the forms (by appending their names, signatures, and date); and from parents and guardians for those who were below 18 (as well as giving them a chance to assent). Afterwards, the paper-based questionnaires (together with a pen/pencil) were administered to them, and they were allowed to ask questions and seek clarification at any time.

The survey questionnaires were administered in a flexible manner, by giving the

participants an option to choose either the self-administered method or the researcher administered method. Those who chose the self-administered method, answered the survey on their own. While those who chose the researcher administered method, had the researcher reading to them and could say out their responses aloud, which were then written down on their behalf. The participants were allowed to ask questions during the process whenever they did not understand. They were also encouraged to answer all the questions in the survey, and to answer them as truthfully as they possibly could. However, they were also reminded of their right to skip questions they felt uncomfortable answering, or not answer at all, or withdraw from the study at any time. When they were done responding to the survey, they were given an opportunity to ask questions and seek clarifications about the survey and the whole study in general. They were also reminded to call (since they had retained a copy of the consent form with the researcher's contact details) the researchers at any point in the future in case they had queries after the research. Afterwards, they were thanked for their participation and given refreshments.

5.4.2 Participants and sampling procedure

5.4.2.1 Inclusion criteria

129 first time adolescent mothers, aged 14 to 19 years old, participated in the pilot study. The inclusion criteria were: First time adolescent mothers aged between 13 and 19 years old, with those less than 18 being recruited together with their parents/guardians to provide consent/assent. The girls needed to have babies aged zero to 36 months. The babies had to be first born children and developing normally All the girls were recruited from public health facilities during postnatal visits, NGOs, or safe mothering shelters because of the nature of study. The pilot study participants did not take part in the main survey.

5.4.2.2 Sampling methods

The sample was recruited from Lusaka, the capital city of Zambia, as it is one of the districts with the highest number of teenage pregnancies (Zambia Statistics Agency, 2019). It is also a district with adolescent mothers from all wealth quintiles. This made it possible to capture mental health outcomes on a more holistic front. The sample was recruited through three types of sampling methods namely, proportionate stratified random sampling, convenience sampling, and snowball sampling.

5.4.2.2.1 Proportionate stratified random sampling

The first and main sampling method was proportionate stratified random sampling. Proportionate stratified random sampling is a technique that samples each stratum proportional to its size in each population (Leary, 2001; Leary, 2014). This method was used to sample the public health clinics. The reason for using proportionate stratified random sampling was because it was anticipated that there would be more girls coming from high densely populated areas of Lusaka than from middle and low densely populated areas because the high densely populated areas are characterized by bigger populations. This method was executed successfully by first dividing Lusaka into three zones: Low density areas, middle density areas, and high-density areas. The process started by proportionately selecting public health clinics from the three types of residential areas, with a higher number being from high density areas, and a moderate number in the middle density areas, and lastly a lower number in the low-density areas.

This is because there were generally more numbers coming from high densely populated areas. After selecting the public hospitals (before commencement of the study), an official familiarization visit was then undertaken at all the selected public health hospitals/clinics to meet the Heads of Departments, officer's in-charge, and other healthcare staff. It turned out to be an opportunity for introductions and acquainting

ourselves with the health personnel, as we shared the purpose of the study. It was also an opportunity to create rapport with the health officers who subsequently helped in recruiting volunteers such as community health workers who assisted in sampling and managing of the participants. Subsequently, participants were recruited with the help of the health workers. The health workers also helped organise a comfortable and quiet place in which the study was conducted. Thus, facilitating a smooth data collection process.

5.4.2.2.2 Convenience sampling

Convenience sampling was another sampling method that was incorporated in this study. Convenience sampling is a technique that recruits easily accessible participants (Leary, 2014). It is a nonprobability sampling technique and one of the easiest to use compared to other sampling procedures. It was incorporated in this study to help recruit adolescent mothers who were readily available as they came for postnatal and infant vaccination services. And since this study was not aimed at describing various characteristics of a large population representing both female and males and probably their opinions, beliefs, and thoughts, it was therefore suitable for this study because it only focused on adolescent mothers with infants (Leary, 2014).

5.4.2.2.3 Snowball sampling

Snowball sampling was also incorporated in the sampling procedure for this study as an additional sampling technique. Snowball sampling is a technique in which participants recruit other participants, who also recruit others, thereby increasing the numbers just like a snowball becomes larger as it picks up more snow when rolling (Leary, 2014; Leedy & Ormrod, 2015). This was to maximise the numbers in case we had missed some adolescent mothers who had already visited the hospitals/clinics for postnatal or infant vaccinations earlier or on days we had visited other hospitals.

5.4.3 Data collection

The study collected primary quantitative data in form of a structured survey. The structured quantitative survey contained demographic questions and several measures as discussed below. The survey was a paper and pencil version and was either self-administered or researcher administered, the latter method involved the researcher reading out the content to the participants, and then recording the answers on their behalf. Below are the measures that were used in this study.

5.4.3.1 Parenting Stress Scale (PSS)

The parenting stress scale by Berry & Jones (1995) was used to measure the parenting stress of the adolescent mothers. It is "an 18-item self-report scale representing both positive (psychological rewards, self-enrichment, and individual growth) and negative (constrained resources, opportunity costs and limitations) components of the parenting role," subsequently measuring parenting stress (Berry & Jones, 1995). It contains items like "I am happy in my role as a parent" and one is asked to indicate the degree to which they agree or disagree to each statement by choosing from the following options: "1-Strongly disagree, 2-Disagree, 3-Undecided, 4-Agree, 5-strongly agree" (Berry & Jones, 1995). It is scored by first, "reverse scoring items 1, 2, 5, 6, 7, 8, 17 and 18 to 1=5, 2=4, 3=3, 4=2, 5=1 and then summing all item scores." This scale has in the past demonstrated satisfactory internal reliability of 0.83, and test-retest reliability of 0.81. It has also shown satisfactory convergent validity with several other measures of stress (Algarvio et al., 2018; Berry & Jones, 1995). It is suitable for mothers with either smaller or older children.

5.4.3.2 Positive Affect (PA)

A 10-item Positive Affect scale, a subscale of the "Positive and Negative Affect

Schedule (PANAS)" by Watson, Clark & Tellegan (1988) was used to measure positive affect. It is a scale comprising 10 positive mood-items. Positive Affect was created to measure the positive side of the affective component (Watson et al., 1988). The scale consists of 10 words that describe positive feelings and emotions. Participants are supposed to indicate the extent to which they generally feel that way on average on a scale of 1 to 5 as follows: "1 - Very slightly or not at all, 2 - A little, 3 – Moderately, 4 - Quite a bit, 5 – Extremely." The Positive Affect scale consists of items such as, "interested" and "exited" (Watson et al., 1988). The scale has demonstrated very high internal consistency (.88) and has demonstrated excellent convergent and discriminate validity with longer measures of similar mood factors, and measures of distress, respectively (Watson et al., 1988).

5.4.3.3 Depression, Anxiety and Stress Scale (DASS)

Depression Anxiety Stress Scales (DASS-21), "a 21-item short form self-report measure of depression, anxiety and tension / stress was used to measure distress" (Lovibond & Lovibond, 1995). An example of an item on the depression component is "I couldn't seem to experience any positive feeling at all." An example of an item on the anxiety component is "I was aware of dryness of my mouth." While an example of an item on the stress component is "I found it hard to wind down." Respondents indicate how much the statement applied to them over the past week. The rating scale is as follows: "0 - Did not apply to me at all – NEVER; 1 - Applied to me to some degree, or some of the time – SOMETIMES; 2 - Applied to me to a considerable degree, or a good part of time – OFTEN; 3 - Applied to me very much, or most of the time - ALMOST ALWAYS" (Lovibond & Lovibond, 1995). The 21 items DASS has demonstrated acceptable psychometric properties and good factor structure confirmed by both exploratory and confirmatory factor analysis. It has demonstrated better separation in

factor loadings than the Beck Depression Inventory (BDI) and the Beck Anxiety Inventory (BAI). It has been hailed for its discriminatory properties among the three constructs (depression, anxiety, and tension/stress) (Gomez et al., 2020; Lovibond & Lovibond, 1995; Scholten et al., 2017).

5.4.3.4 Positive and Negative Religious Copying Scale (Brief RCOPE)

"Positive and Negative religious coping (Brief RCOPE)" measure, consisting of "14 items that describe 7 positive, and 7 negative religious coping statements was used to measure positive and negative religious coping." An example of a statement on the positive religious coping subscale is "I focus on religion to stop worrying about my problems." While an example of a statement on the negative religious coping subscale is "I feel punished by God for my lack of devotion." Respondents are asked to indicate how normally they use the coping responses when faced with stressful situations. The scale consists of 4-point answers on a Likert scale as follows: "0 - Not at all, 1 – Somewhat, 2 - Quite a bit, and 3 - A great deal" (Pargament et al., 2011). Both the positive and negative religious coping sub scales have been found to have high and moderate internal consistencies, respectively (McGrady et al., 2021; Pargament et al., 2011).

5.4.3.5 Ruminative Response Scale (RRS)

"Ruminative Response Scale with 22 items, a component of the Response Styles Questionnaire (RQS)" was used to measure rumination. This scale requires respondents to rate how often they find themselves engaging in every single 22 thoughts or behaviours when feeling sad, or in a depressed mood. The items are phrased in self-focused ("I think why I react this way?"), symptom-focused ("I think about how hard it is to concentrate"), probable consequences and causes ("I think, 'I won't be able to do

my job if I don't snap out of this'") in response to depressed mood (Nolen-Hoeksema et al., 2008; Treynor et al., 2003). Each item is rated on a four-point Likert type scale, "1 - Almost never, 2 - Sometimes, 3 - Often, 4 - Almost always." Studies that have used this scale have reported high internal reliability and satisfactory convergent validity (Nolen-Hoeksema & Morrow, 1993; Nolen-Hoeksema et al., 1994; Nolen-Hoeksema et al., 2008; Roelofs et al., 2006; Treynor et al., 2003).

5.4.3.6 Brief Resilience Scale (BRS)

Brief Resilience Scale (BRS), a "six-item scale with three positively worded items, and three negatively worded items" (Smith et al., 2008) was used to measure resilience. This scale was chosen because it is usually used in non-clinical samples (Smith et al., 2008). It is an instrument consisting of six items, three of which are positively worded and three of which are negatively worded (Amat et al., 2014; Smith et al., 2008). The participants give their subjective rating of the extent to which they agree to the statements such as "'bouncing back', 'recover', 'snap back', or 'get over set-backs' after hard times." The Brief Resilience scale (BRS) has been found to be among the three measures that have the highest validity and reliability when it comes to resilience (Windle et al., 2011). It has also been found to be correlated with other measures of resilience (Windle et al., 2011). Besides it is easy to administer, and it saves time and resources.

5.4.3.7 Parental Responsibility (PR)

Parental responsibility is "a 10 items measure, particularly a sub scale of the Parental Locus of Control Scale (PLOC), a 47-item measure with five scales (parental efficacy, parental responsibility, child control of parents' life, parental belief in fate/chance, and parental control of child's behaviour)." However, the focus here was

Parental Responsibility (10-items sub scale) with items like “I am responsible for my child’s behaviour.” Participants are asked to respond on a “5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).” This measure has been found to be reliable especially when used in samples of parents with children who are in the same age range (Campis et al., 1986). This subscale was found to have a higher reliability alpha coefficient among the five subscales of the Parental Locus of Control Scale (Campis et al., 1986).

5.4.3.8 Multidimensional Scale of Perceived Social Support (MSPSS)

“Multidimensional Scale of Perceived Social Support” (Zimet et al., 1988) was used to measure social support. It is “a 12-item scale measuring perceived social support from family, friends, and significant other.” It has items like “there is a special person who is around when I am in need” and one is asked to indicate the degree to which they agree or disagree to the statements by choosing from the following options: “1 - Very Strongly Disagree, 2 - Strongly Disagree, 3 - Mildly Disagree, 4 - Neutral, 5 - Mildly Agree, 6 - Strongly Agree, 7 - Very Strongly Agree.” This measure has been reported to possess satisfactory test-retest and internal reliability as well as strong factorial validity and adequate construct validity (Zimet et al., 1988). It has also been used in different age groups and cultures.

5.4.4 Ethical considerations

Primary ethical clearance was sought from my Chief supervisor on behalf of the Research Ethics Committee at Lingnan University in Hong Kong. Further ethical clearance was then sought from Tropical Diseases Research Centre (TDRC) Ethics Review Committee in Zambia, then further approval was sought from the National Health Research Authority (NHRA) in Zambia since data for this study was collected

there. Thereafter, approval to conduct the study in public health facilities was sought from the Zambian Ministry of Health - Lusaka Province Office Director, and afterwards from the Ministry of Health - Lusaka District Office Director. Further, the approval letters were presented to Health Directors of individual public health facilities that I sampled, and subsequently to the health officers in charge of the maternity departments where my sample was drawn. Since the study involved adolescents aged between 13 to 19 years of age some of whom were minors (below 18 years of age), informed consent (using a consent form) was gotten from parents/guardians, as well as giving the participants a chance to assent. For those who were 18 and 19 years old, an informed consent form was presented to them for signing after they agreed to participate and all the information about the study had been shared.

Participants were informed of voluntary participation and right to withdraw, that is, participation was purely voluntary, and their decline to participate would not affect any services they received at the respective centers. Also, that they were free to withdraw from the study at any time without any penalty or termination of services they received at the respective centers. Participants were assured of confidentiality, and this was upheld by: First, keeping their identities anonymous (no names on the questionnaires, only numbers). Only the researchers (myself and research assistants) knew the information that participant identification numbers represented. Second, all personal hard copy information were secured in a safe place, while all electronic information were stored in a password protected folder on the computer. Third, all data that were collected were used for the study purposes only and were not shared with anyone outside the research team. Afterwards, all the information was to be discarded after 6 months from completion of study.

5.4.5 Data Analysis

The data for the current study was analysed as follows: Confirmatory factor analysis (CFA) was conducted in LISREL software version 8.80 to verify the factor structures of the variables and to test expected relationships between observed variables and their underlying latent constructs, as anticipated from the literature (Byrne, 2012). Internal reliability of the scales was analysed using Cronbach's alpha tests which were performed in SPPS version 26 software. Then descriptive analyses using SPPS version 26 software were conducted to report demographics, and describe the data generally in terms of means, standard deviation, and skewness. Afterwards, correlations, were done in SPPS version 26 software to check for associations and relationships between the dependent and independent variables (Field, 2013).

5.4.6 Conclusion

The methods section outlined the methodology used in this study. It began by explaining the design of the study, followed by participants and sampling procedures, then data collection, ethical consideration, and lastly data analysis. The next section is the results section that presents findings of this study.

5.5 Results

5.5.1 Introduction

This section presents findings for the pilot study. It begins by presenting the sociodemographic characteristics of the participants, followed by confirmatory factor analysis findings, then descriptive statistics and correlations, and lastly concluding statements about the psychometric properties of the measures.

5.5.2 Sociodemographic characteristics of the pilot study sample

Table 1 indicates the demographic characteristics of the pilot survey sample. The sample included all female adolescents (N = 129) aged between 14 – 19 years (*M* = 18.08, *SD* = 1.08). Among the participants sampled, 38% had the highest level of education of junior secondary school, while 25.6% had a highest level of education of senior secondary school, with 30.2% having a highest level of education of primary school, while the remaining 6.2% had dropped out of school. More than a third (79.8%) were never married while 20.2% were married. All except one were Christian by religion. Their infants' ages ranged from 1 week to 36 months (*M* = 6.92) with male infants accounting for 58.9%. More than half (60.5%) came from high densely populated areas, 30.2% from middle densely populated areas, and 9.3% from low densely populated areas.

Table 1 Sociodemographic Characteristics of Participants in the Pilot Survey (N = 129)

Characteristics	*M*	*SD*	N (%)
Gender			
All female			129(100)
Age			
14 – 19	18.08	1.08	
14			3(2.3)
15			1(0.8)
16			5(3.9)
17			19(14.7)
18			47(36.4)
19			5(47.8)
Education (Highest level)			
No Education			0(0.0)
Primary School			39(30.2)
Junior Secondary			49(38.0)
Senior Secondary			33(25.6)
Dropped Out			8(6.2)
Marital Status			
Never Married			103(79.8)
Married			26(20.2)
Religion			
Christian			128(99.2)
Muslim			1(0.8)
Infant Age			
1 week – 36 months	6.92	7.44	
Infant Gender			
Male			76(58.9)
Female			53(41.1)
Infant's Father Age			
15 – 38	22.61	3.27	
Infant's Father Education			
No Education			1(0.8)
Primary School			10(7.8)
Junior Secondary			15(22.4)
Senior Secondary			79(61.2)
'A' level			1(0.8)
College			9(7.0)
University			4(3.1)
Do not Know			10(7.8)
Infant's Father's Occupation			
Unemployed			30(23.3)
Informal employment			73(56.6)
Formal employment			12(9.3)
Student/pupil			8(6.2)
Do not Know			6(4.7)
Mother's Age			

31 – 63	41.86	6.38	
Mother's Age at first child			
13 – 35	19.19	3.47	
Mother's Highest Education			
No Education			5(3.9)
Primary school			35(27.1)
Junior secondary school			30(23.3)
Senior secondary school			30(23.3)
College			5(3.9)
University			1(0.8)
Do not know			12(9.3)
Deceased			11(8.5)
Mother's Occupation			
Unemployed			47(36.4)
Informal employment			64(49.6)
Formal employment			7(5.4)
Landlord/ Land Lady			1(0.8)
Deceased			10(7.8)
Mother's Annual Income (USD)			
$ ≤ 540			18(14.0)
$548.4 - 2680.44			13(10.1)
$2681.16 - 5361.24			1(0.8)
$5361.84 - 8042.04			0(0.0)
$8042.52 - 10722.96			0(0.0)
$ > 10722.96			1(0.8)
Do Not Know			62(48.1)
No income			24(18.6)
Deceased			10(7.8)
Father's Age			
35 – 79	47.14	10.16	
Father's Highest Educational			
No Education			2(1.6)
Primary school			13(10.1)
Junior secondary school			17(13.2)
Senior secondary school			34(26.4)
'A' Level			0(0.0)
Technical/Vocational			2(1.6)
College			7(5.4)
University			5(3.9)
Do not know			19(14.7)
Deceased			
30(23.3)			
Father's Occupation			
Unemployed			18(14.0)
Informal employment			46(35.7)
Formal employment			24(18.6)
Do not know			8(6.2)
Deceased			30(23.3)
Landlord/ Land Lady			2(1.6)

Retired			1(0.8)
Father's Annual Income (USD)			
$ ≤ 540			4(3.1)
$548.4 - 2680.44			15(11.6)
$2681.16 - 5361.24			2(1.6)
$5361.84 - 8042.04			0(0.0)
$8042.52 - 10722.96			0(0.0)
$ > 10722.96			1(0.8)
Do Not Know			69(53.5)
No income			8(6.2)
Deceased			30(23.3)
Number of siblings			
0 – 14	4.48	2.73	
Position among siblings			
0 – 12	2.81	2.10	
Family Arrangement			
Single parent			41(31.8)
Both parents			43(33.3)
Grandparent(s)			10(7.8)
Family relatives			16(12.4)
Partner			19(14.7)
Residential Area			
High densely populated area			78(60.5)
Middle densely populated area			39(30.2)
Low densely populated area			12(9.3)
Relationship with partner			
1 – 10	6.53	3.30	
Relationship with family			
1 – 10	8.04	2.65	
Abuse experience			
Yes			21(16.3)
No			108(83.7)
Serious health conditions			
Yes			15(11.6)
BP			*1(0.8)*
Heart disease			*1(0.8)*
HIV			*6(4.7)*
Asthma			*(1.6)*
Other			*2(1.6)*
Missing			*3(2.1)*
No			114(88.4)
Medications at present			
Yes			10(7.8)
HIV medication			*7(5.4)*
Asthma			*3(2.3)*
No			119(92.2)
Surgery			
Yes			10(7.8)
Cesarean section			*9(7.0)*

Other			1(0.8)
No			
119(92.2)			
Regular health checkups			
Yes			61(47.3)
No			68(52.7)
No reason			*52(40.3)*
Scared			*3(2.3)*
Ignorant			*1(0.8)*
Do not see need			*1(0.8)*
I am healthy			*2(1.6)*
Long queues			*1(0.8)*
Missing			*8(6.1)*
Psychiatric/psychological service			
Yes			2(1.6)
Suicide ideation			*1(0.8)*
Stress			*1(0.8)*
No			127(98.4)
Infant's birth weight(kg)			
0.60 – 4.50	2.90	0.55	
Serious health condition(s) at birth			
Yes			7(5.4)
Chronic			*1(0.8)*
Non-Chronic			*3(2.3)*
Premature birth			*2(1.6)*
Missing			*1(0.8)*
No			122(94.6)
Infant's current health condition			
Poor			2(1.6)
Non-chronic			*2(1.6)*
Good			127(98.4)

Note: M = Mean, *SD* = Standard Deviation, *N* = Number of participants, *%* = Percentage

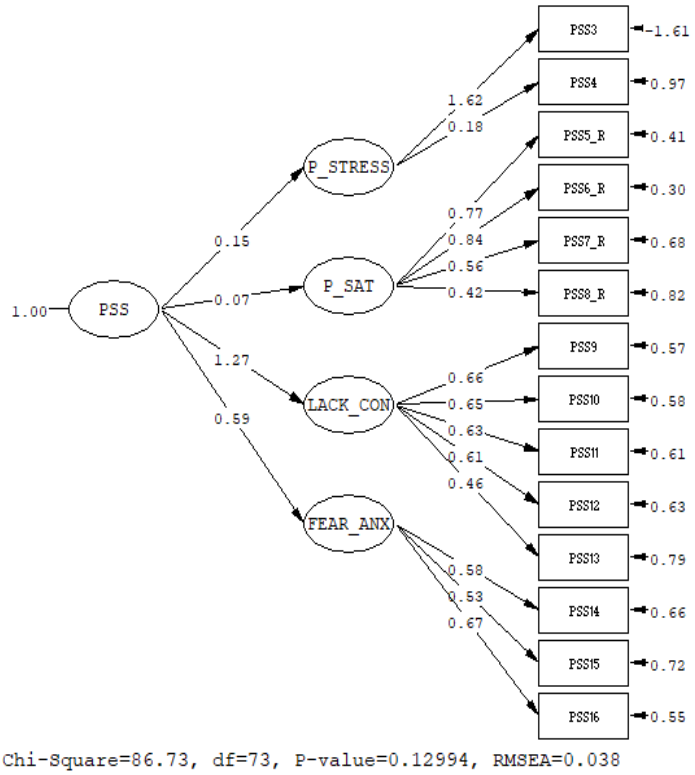
5.5.3 Confirmatory factor analysis

This section presents confirmatory factor analyses (CFA) for the pilot study. CFAs were conducted to confirm if the factor structures of the constructs were consistent with literature, and our understanding, and if they would fit out data (Byrne, 2012). All CFA models reported in the pilot were examined for factor structure using LISREL version 8.80, a software package for Structural Equation Modelling. Overall model fit to the data for all models were evaluated using Hu and Bentler's widely used and

recommended cut-off values for fit indices (Hu & Bentler, 1999). These indices included the chi-square test ($\chi 2$), comparative fit index (CFI), Tucker-Lewis index (TLI), root mean squared error of approximation (RMSEA). Hu and Bentler's criteria consider CFI and TLI values $\geq .95$ to be excellent fit, those ranging from .90 to .95 to be adequate, and anything $< .90$ as poor fit (Byrne, 2012). RMSEA values $< .06$ are considered to be excellent, those between .06 and 08 as good, while those between .08 and .10 as acceptable (Cudeck, 1993; Hu & Bentler, 1999).

Table 2 below shows fit indices for all CFA models tested in the pilot study. The first model 'PSS' represents the parenting stress scale items that were examined as a "second order four-factor model of 14 items by removing items: One, two, seventeen, and eighteen" (Algarvio et al., 2018). The four factors comprised parental stressors, parental satisfaction, lack of control, and fears and anxiety. The model was a good fit for the present data (though the loadings of some items were low) as shown by the values; $\chi 2 = 86.73$ ($p > .05$), $df = 73$, CFI = 97, TLI = .97, RMSEA = .038 at 90% confidence interval (.0; .066). The Standardized factor loadings for the items ranged between .18 and 1.62 as seen in figure 3 below.

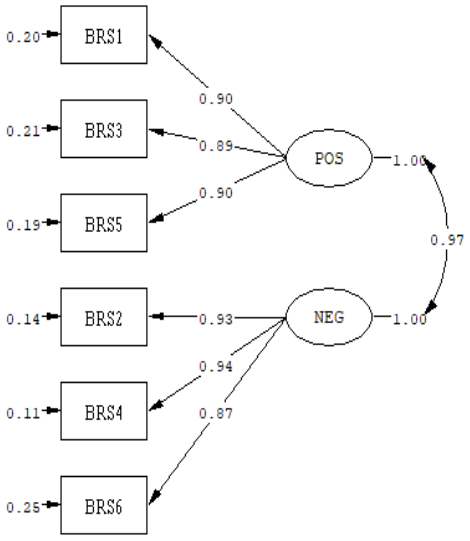
Figure 3 Confirmatory Factor Analysis for the Parenting Stress Scale (PSS)



Note. P_STRESS = Parental Stress factor; P_SAT = Parental Satisfaction factor; LACK_CON = Lack of Control; FEAR_ANX = Fear and Anxiety.

'BRS' shows confirmatory fit indices for the brief resilience scale modelled as "a two-factor correlated model" as tested by Fung and others (Fung, 2020). The two factors were positive and negative factors, representing positive and negatively worded items respectively. The model was an acceptable fit for my data as shown by the following fit values $\chi 2 = 9.77$ ($p > .05$), $df = 8$, CFI = 1.00, TLI = 1.00 and RMSEA of .042 at 90% confidence interval (.0; .117). The standardized factor loadings for the items ranged between .87 and .94 as shown in figure 4 below.

Figure 4 Confirmatory Factor Analysis for the Brief Resilience Scale (BRS)

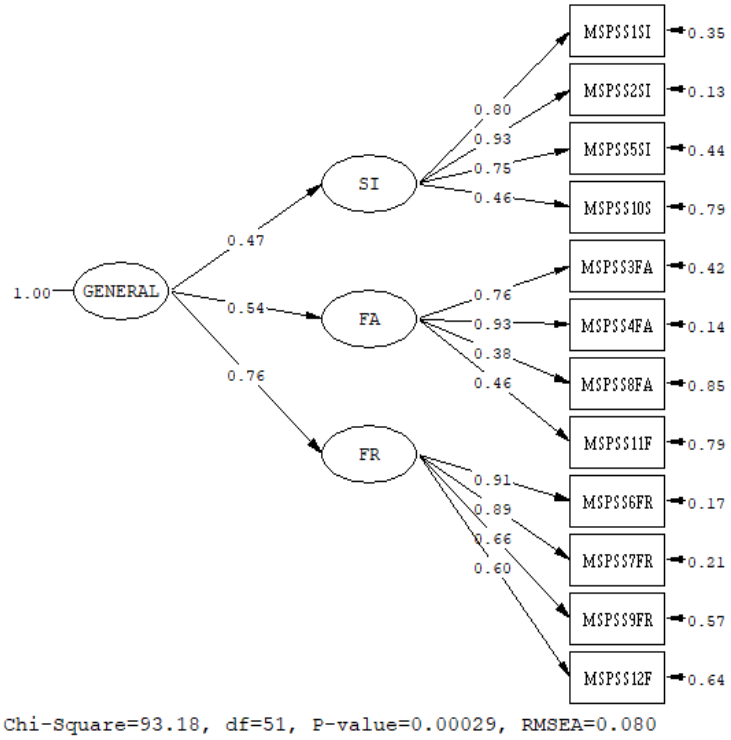


Chi-Square=9.77, df=8, P-value=0.28190, RMSEA=0.042

Note. POS = Positive factor; NEG = Negative factor.

'MPSS' shows confirmatory fit indices for the "multidimensional scale of perceived social support modelled as a second order three-factor model comprising three factors - significant other, family, and friends" (Başol, 2008; Teh et al., 2019). The model demonstrated a very good fit for the data as seen in the values $\chi 2 = 93.18$ ($p < .001$), $df = 51$, CFI = .96, TLI = .94, RMSEA = .080 at 90% confidence interval (.054; .106). The standardized factor loadings for the items ranged between .38 and .93 and were all significant as shown in figure 5 below.

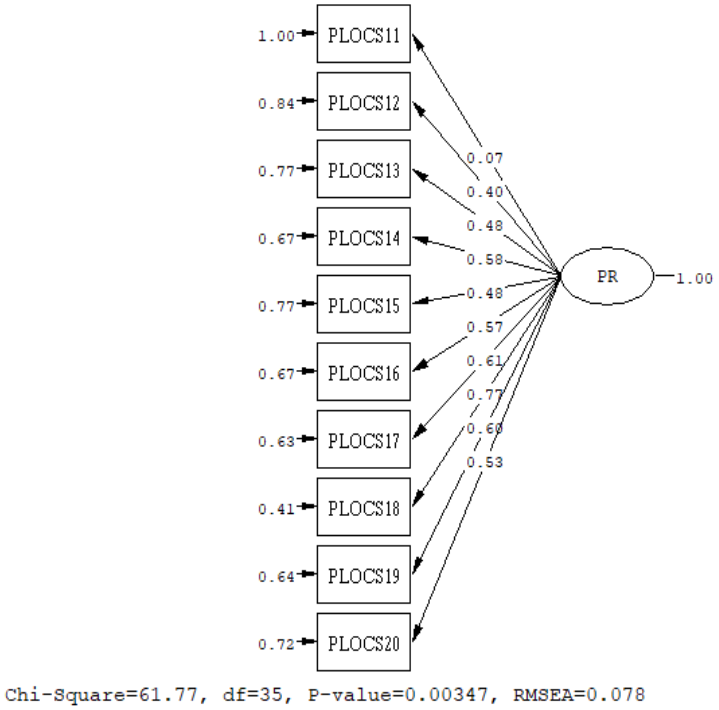
Figure 5 Confirmatory Factor Analysis for the Multidimensional Scale of Perceived Social Support (MPSS)



Note. SI = Significant other, FA = Family, FR = Friends.

'PR' shows confirmatory model fit indices for the "parental responsibility scale (a subscale of the Parental Locus of Control) modelled as a one-factor model" (Campis et al., 1986). The model indicated an adequate fit for the data (though the loadings of some items were low); $\chi 2 = 61.77$ ($p < .01$), $df = 35$, CFI = .94, TLI = .93, and RMSEA = .078 at 90% confidence interval (.044; .109). The standardized factor loadings for the items ranged between .07 and .77 as shown in figure 6 below.

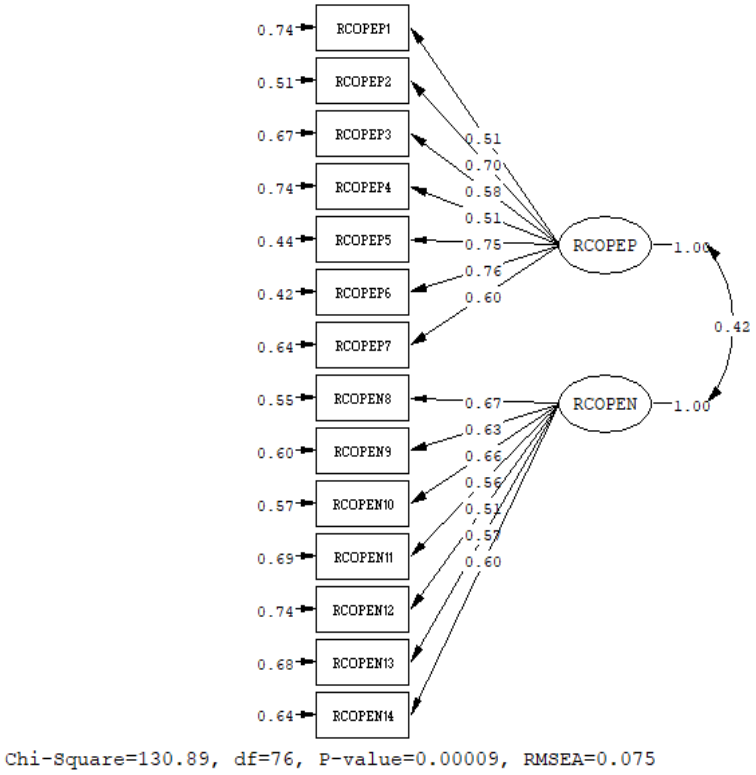
Figure 6 Confirmatory Factor Analysis for the Parental Responsibility Scale (PR)



Note. PR = Parental Responsibility.

'RCOPE' shows confirmatory model fit indices for the "brief religious coping scale (with positive and negative religious coping subscales) as a two-factor correlated model" as originally modelled by the developers (Pargament et al., 2011) and as tested or validated by other users (McGrady et al., 2021; Mohammadzadeh & Najafi, 2016; Pargament et al., 2011). The two-factor CFA model for the brief RCOPE indicated a good fit for the current data; $\chi 2 = 130.89$ ($p < .001$), $df = 76$, CFI = .94, TLI = .93, and RMSEA = .075 at a confidence interval of 90% (.053; .097). The standardized factor loadings for the items ranged between .51 and .76 and were all significant as shown in figure 7 below.

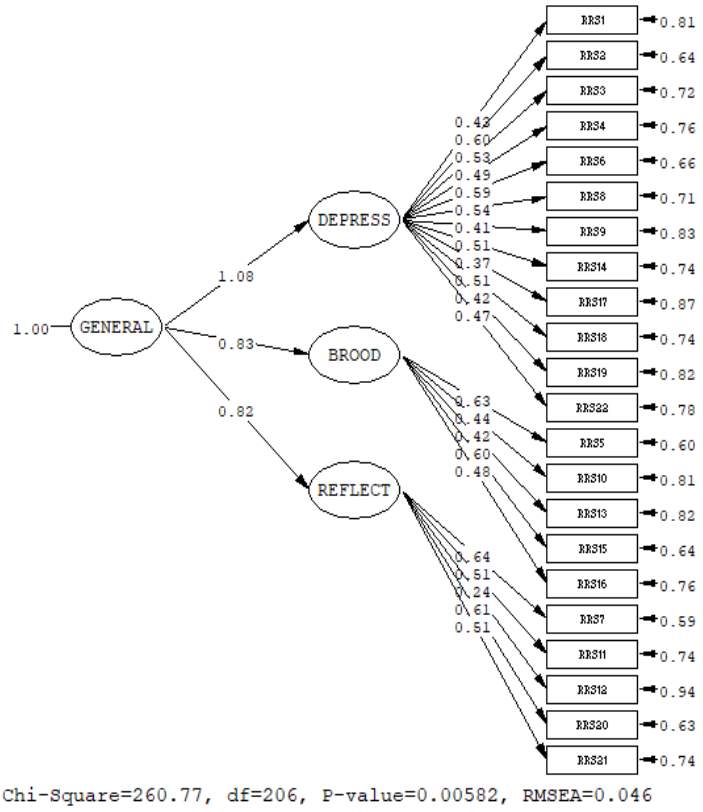
Figure 7 Confirmatory Factor Analysis for the Brief Religious Coping Scale (RCOPE)



Note. RCOPEP = Positive Religious Coping; RCOPEN = Negative Religious Coping.

'RRS' shows confirmatory model fit indices for the "rumination response scale as a second order three-factor model" as modelled by Treynor (Treynor et al., 2003). The model was a very good fit (though the loadings of some items were low) with values $\chi 2 = 260.77$ ($p < .01$), $df = 206$, CFI= .97, TLI = .96, and RMSEA = .046 at 90% confidence interval (.026; .062). The standardized factor loadings for the items ranged between .24 and .64 and were all significant as shown in figure 8 below.

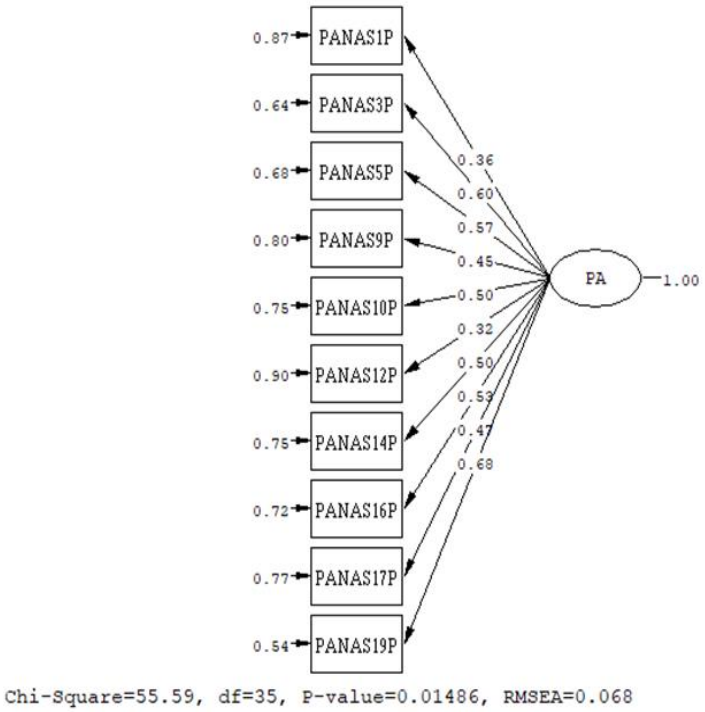
Figure 8 Confirmatory Factor Analysis for the Rumination Response Scale (RRS)



Note. DEPRESS = Depression; BROOD = Brooding; REFLECT = Reflection.

'PA' shows model fit indices for the "positive affect schedule which was modelled as a one factor model" (Watson et al., 1988). The model fit the data adequately, $\chi 2$ = 55.59 ($p < .01$), df = 35, CFI = .94, TLI = .93, and RMSEA = .068 at 90% confidence interval (.030; .100). The standardized factor loadings for the items ranged between .32 and .68 and were all significant as shown in figure 9 below.

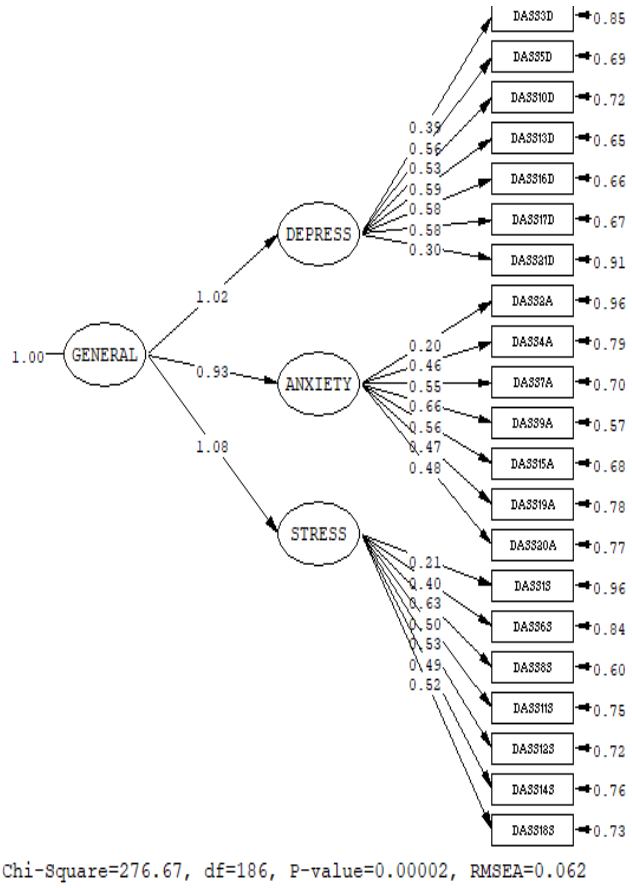
Figure 9 Confirmatory Factor Analysis for the Positive Affect Scale (PA)



Note. PA = Positive affect.

'DASS' shows confirmatory fit values for the "depression anxiety and stress scales (DASS-21) that was modelled as a second order three-factor model" (Lovibond & Lovibond, 1995) like in other studies (Gomez et al., 2020; Oei et al., 2013; Ruiz et al., 2017; Scholten et al., 2017; Sinclair et al., 2012). The three-factor model fit the data well (though the loadings of some items were low); $\chi 2 = 276.67$ ($p < .001$), $df = 186$, CFI = .95, TLI = .94, and RMSEA = .062 at 90% confidence interval (.046; .077). The standardized factor loadings for the items ranged between 0.20 and 0.66 as shown in figure 10 below.

Figure 10 Confirmatory Factor Analysis for the Depression Anxiety and Stress Scale (DASS)



Note. DEPRESS = Depression; ANXIETY = Anxiety; STRESS = Stress.

From above, it is important to note that although the fit indices were satisfactory, the loadings of some items or first order factors were low. The sample size of the pilot study was small. The psychometric properties of the scales were examined further in the main study.

Table 2 Fit Indices for all CFA Models Examined in the Pilot Study (N = 129)

Models	$\chi 2$	*df*	RMSEA	CFI	TLI
PSS	86.73	73	.038	.97	.97
BRS	9.77	8	.042	1.00	1.00
MPSS	93.18***	51	.080	.96	.94
PR	61.77**	35	.078	.94	.93
RCOPE	130.89***	76	.075	.94	.93
RRS	260.77**	206	.046	.97	.96
PA	55.59**	35	.068	.94	.93
DASS	276.67***	186	.062	.95	.94

Note. ** $p < .01$, *** $p < .001$, $\chi 2$ = Chi-square test, *df* = Degrees of freedom, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, RMSEA = Root Mean Square of Approximation, F = Factor, PSS = Parenting Stress Scale, BRS = Brief Resilience Scale, MSPSS = Multidimensional Scale of Perceived Social Support, PR = Parental Responsibility, RCOPE = Brief Religious Coping Scale (Positive, and Negative Religious Coping Scales), RRS = Rumination Response Scale, PA = Positive Affect, DASS = Depression Anxiety and Stress Scales.

5.5.4 Descriptive Statistics and Internal Consistency Reliability of the Scales (Pilot Study)

Table 3 shows Descriptive statistics and internal consistency of the scales used in this study. It shows that all the scales had internal consistency ranging from acceptable to very good (Cronbach's alphas ranged from .66 - .96). All scales were in the acceptable skewness ranges (below ± 1) except for one, positive religious coping. Positive religious coping was initially negatively skewed at -1.48, this was corrected by first transforming the figure using the reflection function and then the Log10 function, this helped to lower the value to an acceptable level of below ± 1 as can be seen in table 3 below with a value of .43.

Table 3 Psychometric Properties for Scales in the Pilot Study (N = 129)

Scale	*k*	*M(SD)*	*α*	*Skew*
Parenting Stress	14	43.33(8.84)	.73	-.33
Parental Responsibility	10	25.12(7.49)	.78	.61
Resilience	6	18.62(6.96)	.96	-.12
Social Support	12	63.27(12.69)	.85	-.78
Positive Religious coping	7	18.76(2.92)	.81	.43
Negative religious coping	7	9.88(5.59)	.80	.12
Rumination	22	52.60(10.51)	.87	.24
Positive Affect	10	37.59(7.52)	.76	-.68
Depression	7	6.49(3.95)	.68	.66
Anxiety	7	5.86(3.75)	.69	.64
Stress	7	6.91(3.79)	.66	.38
DASS	21	19.18(10.14)	.86	.50

Note. k = Number of items, *M* = Mean, *SD* = Standard Deviation, *α* = Cronbach's Alpha Coefficient, DASS = Depression-Anxiety-stress combined

5.5.5 Correlations among Main Variables

Table 4 shows correlations among the main variables of the study: Parenting stress, parental responsibility, resilience, social support, positive religious coping, negative religious coping, rumination, positive affect, depression, anxiety, stress and DASS.

Findings from Pearson correlation analysis revealed that adolescent mothers who had reported high parenting stress were likely to exhibit lower levels of social support, and higher usage of negative religious coping. With regards associations between parenting stress and outcome variables, those who reported high parenting stress reported lower levels of positive affect, higher depressive, higher anxiety, and higher overall distress (dass) symptoms. However, no association was found between parenting stress and parental responsibility, resilience, positive religious coping, rumination, and

tension, even though the directions of the relationships were as expected. All associations were examined further in the main survey.

5.5.6 Conclusion

As can be seen in this chapter, the results supported the psychometric properties of all measures to be used in the main survey. They were all satisfactory considering the small sample size. They were all promising for use in the main survey study, and as such the pilot gave a go ahead for the main survey presented in the next chapter where all psychometric properties were examined further.

Table 4 Correlations among Variables in the Pilot Study (N = 129)

	Variable	1	2	3	4	5	6	7	8	9	10	11	12
1	Parenting Stress	-											
2	Parental Responsibility	-.07	-										
3	Resilience	-.07	.16	-									
4	Social Support	-.21*	-.04	-.04	-								
5	Positive religious coping	-.14	-.20*	-.18*	.13	-							
6	Negative religious coping	.26**	-.19*	-.28**	.08	.38***	-						
7	Rumination	.10	-.17*	-.23**	-.07	.25**	.38***	-					
8	Positive Affect	-.18*	-.19*	.19*	.17	.44***	.07	-.10	-				
9	Depression	.23*	-.12	-.46***	.12	.08	.42***	.40***	-.19*	-			
10	Anxiety	.22*	-.15	-.43***	.13	.10	.34***	.43***	-.19*	.64***	-		
11	Stress	.14	-.10	-.36***	.23*	.11	.38***	.34***	-.17	.72***	.67***	-	
12	DASS	.22*	-.13	-.47***	.17	.11	.42***	.45***	-.21*	.88***	.87***	90***	-

Note: DASS = Depression-Anxiety-Stress combined, *** = $p < .001$, ** = $p < .01$, * = $p < .05$

CHAPTER 6: STUDY TWO – MAIN SURVEY STUDY

6.1 Introduction

This chapter presents study two, the main survey study of this project. It is preceded by five chapters: Introduction, study setting, literature review, theoretical framework, and pilot study. The main survey study was the second study of this project following the pilot study in which instruments were finalised. It was conducted to test the hypothesised model presented in section 4.8 above, and 6.5 below. It builds on the pilot study discussed in the previous chapter. The sample size was larger than the pilot sample to create an opportunity to run more sophisticated analyses. This chapter begins by explaining the rationale for conducting this study, followed by the aims, then the hypotheses, then the methods section, followed by the results section, then the discussion, and lastly conclusion.

6.2 Rationale

The rationale of the main survey was to attempt to fill up the identified research gaps in existing literature outlined in section 3.9 of chapter 3. Thus, by considering the literature (empirical and theoretical), the current study also attempts to enrich the "Lazarus and Folkman's Stress and Coping model" by proposing that parenting stress would predict religious coping and rumination, which in turn would predict adolescent mothers' mental health outcomes, and that these effects would differ by levels of resilience, parental responsibility, and social support. Below are the aims of study two, followed by proposed hypotheses, and the hypothesized model.

6.3 Aims

The first aim of the present study was to examine the relationship between parenting stress and mental health (positive affect and mental distress) of adolescent mothers. The second was to examine the mediating role of religious coping in the relationship between parenting stress and mental health (positive affect and mental distress) of adolescent mothers. The third was to examine the mediating role of rumination coping in the relationship between parenting stress and mental health (positive affect and mental distress) of adolescent mothers. The fourth was to examine the moderating role of resilience in the indirect relationships between parenting stress and mental health (positive affect and mental distress) of adolescent mothers. The fifth was to examine the moderating role of parental responsibility in the indirect relationships between parenting stress and mental health (positive affect and mental distress) of adolescent mothers. The sixth was to examine the moderating role of social support in the indirect relationship between parenting stress and mental health (positive affect and mental distress) of adolescent mothers.

6.4 Hypotheses

Hypothesis 1: Parenting stress would negatively predict positive affect (H1a), and positively predict mental distress (H1b). High parenting stress would predict low positive affect and high mental distress, while low parenting stress would predict high positive affect and low mental distress.

Hypothesis 2: Religious coping style would mediate the relationship between parenting stress and positive affect, and mental distress. Specifically, positive religious coping style would mediate the relationship between parenting stress and positive affect (H2a), and mental distress (H2b). Also, that negative religious coping style would mediate the relationship between parenting stress and positive affect (H2c), and mental

distress (H2d).

Hypothesis 3: Rumination would mediate the relationship between parenting stress and positive affect (H3a), and mental distress (H3b).

Hypothesis 4: Resilience would moderate the indirect effect of parenting stress through negative religious coping on positive affect (H4a), and on mental distress (H4b), the indirect effect of parenting stress through rumination on positive affect (H4c), and on mental distress (H4d). For instance, higher levels of rumination would only predict lowest positive affect in adolescent mothers with the lowest resilience levels.

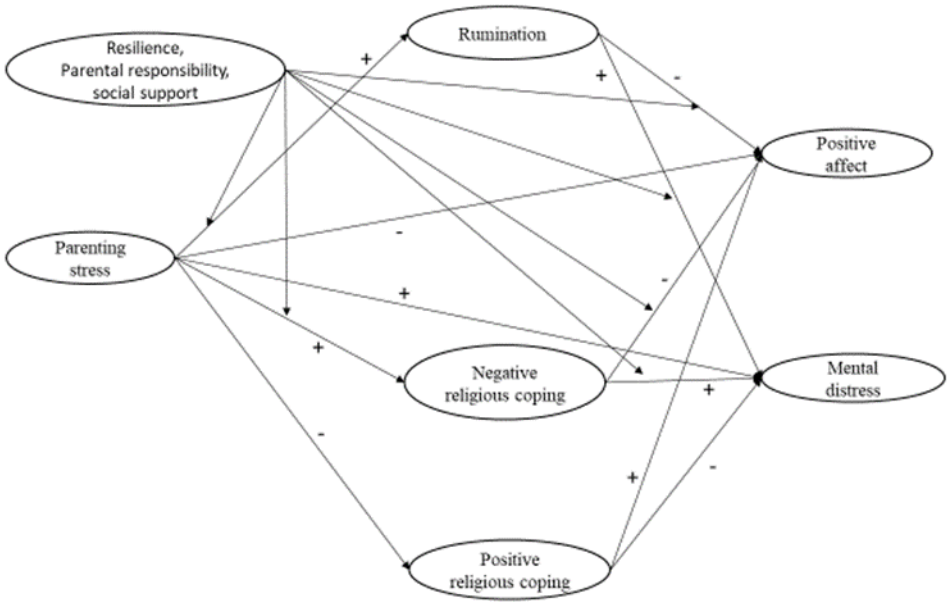
Hypothesis 5: Parental responsibility would moderate the indirect effect of parenting stress through negative religious coping on positive affect (H5a), and on mental distress (H5b), the indirect effect of parenting stress through rumination on positive affect (H5c), and on mental distress (H5d). For instance, high parenting stress would predict high rumination, which would then predict lowest positive affect at lowest levels of parental responsibility.

Hypothesis 6: Social support would moderate the indirect effect of parenting stress through negative religious coping on positive affect (H6a), and on mental distress (H6b), the indirect effect of parenting stress through rumination on positive affect (H6c), and on mental distress (H6d). For instance, when social support levels are high, the effect of rumination on mental distress would weaken.

Using the above hypotheses, the hypothesized model below in section 6.5 was formulated.

6.5 Hypothesized Moderated Mediation Model

Figure 11 Hypothesized Moderated Mediation Model for the Main Survey. Author's Paradigm



6.6 Methods

This section presents and explains the methodology used in this study. It begins by explaining the design of the study, followed by participants, then data analysis and lastly conclusion of the section. Note that sampling methods, data collection measures, and ethical considerations are omitted here as they are presented in the pilot study in chapter 5.

6.6.1 Design

The present study employed a non-experimental cross-sectional survey design and was quantitative in nature. Cross-sectional survey is a design that allows researchers to quantify or make numeric conclusions and accounts of attitudes, beliefs, opinions of a wider population from a representative sample (Creswell, 2018). This method was employed in this study to understand the dynamics and mechanisms through which parenting stress would affect the mental health of adolescent mothers. Also, to test variables that would be anticipated to be playing a role in this relationship. This design was best suited for this study because of its capability to test the hypothesized model shown above in section 6.5. Additionally, to examine the relationships among the variables in question as set out in the aims and hypotheses of the study in section 6.3 and 6.4, respectively. Quantitative methods or approach were used in this study because they permit for the use of more robust and complex strategies such as structural equation models that can integrate various causal pathways and test the combined effects of multiple variables (Creswell, 2018). The next section was supposed to be the procedure of how the survey was conducted, this is outlined in the pilot study, thus the next is participants.

6.6.2 Participants

571 first time adolescent mothers aged 13 to 19 years old (those below 18 were recruited together with their parents/guardians) were recruited between October and December 2020. The inclusion criteria were adolescent mothers aged 13 to 19, with babies between zero and 36 months old. Another criterion was that the babies had to be first born children and developing normally (without any medical problems) to have a homogenous sample. They were recruited from public hospitals/clinics (during postnatal and infant vaccination visits), NGOs or safe mothering shelters because of the nature of study. However, large numbers were recruited from the hospitals. *See sampling methods, data collection measures, and ethical considerations in pilot study.

6.6.3 Data Analysis

The data for the current study was analysed as follows: Confirmatory factor analysis (CFA) was conducted in LISREL software version 8.80 to verify the factor structure of the variables and to test expected relationships between observed variables and their underlying latent constructs, as anticipated from the literature (Byrne, 2012). Internal reliability of the scales was analysed using Cronbach's alpha tests which were performed in SPPS version 26 software. Then descriptive analyses using SPPS version 26 software were conducted to report demographics, and describe the data generally in terms of means, standard deviation, and skewness. Afterwards, correlations, were done in SPPS version 26 software to check for associations and relationships between the dependent and independent variables prior to testing the hypothesised model (Field, 2013). Correlations are important as they help to figure out the need for further analyses, and which analyses to perform going forward. They also help anticipate the outcome of the analyses in general. Which in turn gives researchers the power to make decisions about the variables to maintain or drop. Finally, Structural equation modelling (SEM),

a multivariate analysis technique that combines factor analysis and multiple regression analysis was used to analyse structural relationships between measured variables and latent constructs (Byrne, 2012). It was also used to test the moderated mediation model and roles of the various psychological mechanisms under examination in this study.

6.6.4 Conclusion

The methods section outlined the methodology used in this study. It began by explaining the design of the study, followed by participants, and lastly data analysis. Note that sampling methods, data collection measures, and ethical considerations are omitted here as they are presented in the pilot study. The next section is the results section that presents findings of this study.

6.7 Results

Having covered the rationale, aims, hypotheses, and methodology of the current study in the preceding sections, this segment presents findings for the current study. It begins by presenting the demographic characteristics of the participants, followed by confirmatory factor analysis findings, descriptive statistics, and reliabilities, then correlations, followed by structural equation modelling findings showing moderated mediation findings, and lastly conclusion of findings.

6.7.1 Sociodemographic characteristics of the main survey sample

Table 5 below indicates the sociodemographic characteristics of the main survey sample. The sample included all-female adolescent mothers (N = 571) aged between 13 – 19 years (M = 18.21, SD = 0.94). Among the participants sampled, 42.9% had a highest level of education of junior secondary school, while 26.1% had a highest level of education of senior secondary school, with 28.4% having a highest level of education of primary school, while the remaining had either dropped out or had no education. More than a third (76.2%) were never married, 22.1% were married, 1.2% were separated, and 0.5% were cohabiting. All except one were Christian by religion. Their infants ages ranged from 1 week to 9 months (M = 3.51), with female infants accounting for 50.6%. More than half (66.2%) of the adolescent mothers came from high densely populated areas, while 28.5% from middle densely populated areas, and 5.3% from low densely populated areas.

Table 5 Sociodemographic Characteristics of Participants in the Main Survey (N = 571)

Characteristics	*M*	*SD*	*N* (%)
Gender			
All female			571(100)
Age			
13 – 19	18.21	0.94	
13			1(0.2)
15			6(1.1)
16			25(4.4)
17			80(14)
18			186(32.6)
19			273(47.8)
Education (Highest level			
No Education			6(1.1)
Primary School			162(28.4)
Junior Secondary			245(42.9)
Senior Secondary			149(26.1)
Dropped Out			9(1.6)
Marital Status			
Never Married			435(76.2)
Married			126(22.1)
Separated			7(1.2)
Cohabiting			3(0.5)
Religion			
Christian			570(99.8)
Muslim			1(0.2)
Infant Age			
1 week – 9.2 months	3.51	2.80	
Infant Gender			
Male			282(49.4)
Female			289(50.6)
Infant's Father Age			
14 – 37	23.10	2.85	
Infant's Father Education			
No Education			5(0.9)
Primary School			45(7.9)
Junior Secondary			128(22.4)
Senior Secondary			313(54.8)
'A' level			2(0.4)
Technical / Vocational			2(0.4)
College			35(6.1)
University			11(1.9)
Do not Know			30(5.3)
Infant's Father's Occupation			
Unemployed			138(24.2)
Informal employment			367(64.3)
Formal employment			28(4.9)

Student/pupil			11(1.9)
Other (specify)			1(0.2)
Do not Know			25(4.4)
Missing			1(0.2)
Mother's Age			
30 – 70	42.56	7.40	
Mother's Age at first child			
11 – 37	18.51	3.36	
Mother's Highest Education			
No Education			45(7.9)
Primary school			166(29.1)
Junior secondary school			129(22.6)
Senior secondary school			120(21.0)
College			7(1.2)
University			1(0.2)
Do not know			66(11.6)
Deceased			37(6.5)
Mother's Occupation			
Unemployed			108(18.9)
Informal employment			385(67.4)
Formal employment			22(3.9)
Do not know			15(2.6)
Deceased			41(7.2)
Mother's Annual Income (USD)			
$\$ \leq 540$			105(18.4)
\$548.4 - 2680.44			73(12.8)
\$2681.16 - 5361.24			7(1.2)
\$5361.84 - 8042.04			1(0.2)
\$8042.52 - 10722.96			0(0.0)
$\$ > 10722.96$			1(0.2)
Do Not Know			257(45)
No income			87(15.2)
Deceased			40(7)
Father's Age			
35 – 87	49.03	8.71	
Father's Highest Educational			
No Education			21(3.7)
Primary school			62(10.9)
Junior secondary school			96(16.8)
Senior secondary school			149(26.1)
'A' Level			1(0.2)
Technical/Vocational			
2(0.4)			
College			21(3.7)
University			9(1.6)
Do not know			88(15.4)
Deceased			122(21.4)
Father's Occupation			
Unemployed			36(6.3)
Informal employment			310(54.3)

Formal employment			46(8.1)
Do not know			50(8.8)
Deceased			126(22.1)
Retired			3(0.5)
Father's Annual Income (USD)			
$ ≤ 540			27(4.7)
$548.4 - 2680.44			72(12.6)
$2681.16 - 5361.24			8(1.4)
$5361.84 - 8042.04			5(0.9)
$8042.52 - 10722.96			1(0.2)
$ > 10722.96			1(0.2)
Do Not Know			300(52.5)
No income			30(5.3)
Deceased			127(22.2)
Number of siblings			
0 – 14	4.94	2.16	
Position among siblings			
0 – 14	2.91	2.03	
Family Arrangement			
Single parent			182(31.9)
Both parents			183(32.0)
Grandparent(s)			45(7.9)
Family relatives			38(6.7)
Partner			120(21.0)
Other (specify)			3(0.5)
Residential Area			
High densely populated area			378(66.2)
Middle densely populated area			163(28.5)
Low densely populated area			30(5.3)
Relationship with partner			
1 – 10	6.63	3.35	
Relationship with family			
1 – 10	8.62	2.22	
Abuse experience			
Yes			77(13.5)
No			494(86.5)
Serious health conditions			
Yes			36(6.3)
BP			8(1.4)
Heart disease			2(0.4)
HIV			14(2.5)
Asthma			2(0.4)
Anemia			2(0.4)
Liver problem			1(0.2)
Other			2(0.4)
Missing			7(1.2)
No			535(93.7)
Medications at present			
Yes			45(7.9)
BP medication			4(0.7)

Heart disease medication			1(0.2)
HIV medication			14(2.5)
Contraceptives			17(3.0)
Other			1(0.2)
Missing			
8(1.4)			
No			526(92.1)
Surgery			
Yes			52(9.1)
Cesarean section			52(9.1)
No			519(90.9)
Regular health checkups			
Yes			332(58.1)
No			239(41.9)
No reason			204(35.7)
Scared			1(0.2)
Do not see need			5(0.9)
I am healthy			10(1.8)
Long queues			2(0.4)
Missing			15(2.6)
Psychiatric/psychological service			
Yes			60(10.5)
Depression			3(0.5)
Missing			56(9.8)
No			
511(89.5)			
Infant's birth weight(kg)			
1.10 – 4.90	2.93	0.53	
Serious health condition(s) at birth			
Yes			18(3.2)
Chronic			4(0.7)
Jaundice/Yellow fever			7(1.2)
Premature birth			1(0.2)
Seizures			1(0.2)
Missing			5(0.9)
No			553(96.8)
Infant's current health condition			
Poor			6(1.1)
Chronic			2(0.4)
Non-chronic			1(0.2)
Malnutrition			2(0.4)
Missing			2(0.4)
Good			565(98.9)

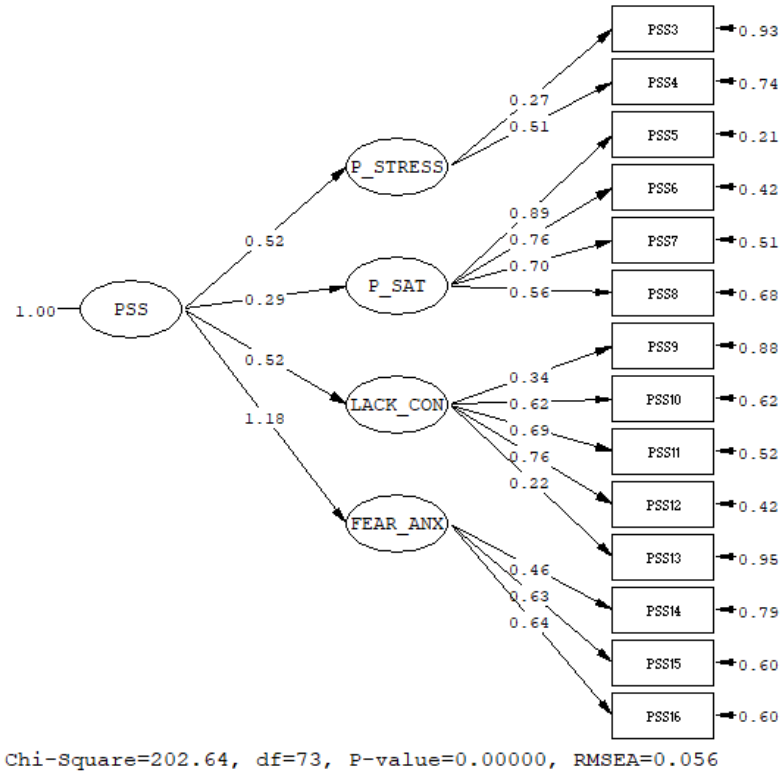
Note. M = Mean, *SD* = Standard Deviation, *N* = Number of participants, *%* = Percentage

6.7.2 Confirmatory factor analysis

This section presents confirmatory factor analyses (CFA) for the main survey. CFA was conducted again in this study to cross validate the factor structures of the constructs using the main survey sample. This is because the sample size in study one was quite small seeing that it was just a pilot study. All CFA models reported here were examined for factor structure using LISREL 8.80 software package for Structural Equation Modelling. Overall model fit to the data for all models were evaluated using Hu and Bentler's widely used and recommended cut-off values for fit indices (Hu & Bentler, 1999). These indices included the chi-square test ($\chi 2$), comparative fit index (CFI), Tucker-Lewis index (TLI), root mean squared error of approximation (RMSEA). Hu and Bentler's criteria consider CFI and TLI values ≥ .95 to be excellent fit, those ranging from .90 to .95 to be adequate, and anything < .90 as poor fit (Byrne, 2012). RMSEA values < .06 are considered to be excellent, those between .06 and 08 as good, while those between .08 and .10 as acceptable (Cudeck, 1993; Hu & Bentler, 1999).

Table 6 below shows fit indicators for all CFA models tested in the current study. The first model 'PSS' represents the "parenting stress scale items that were examined as a second-order four-factor model based on the four-factor structure of the 14 items" by Algarvio and others (Algarvio et al., 2018). The four factors comprised "parental stressors, parental satisfaction, lack of control, and fears and anxiety." The replicated model was a very good fit for the present data as shown by the values; $\chi 2 = 202.63$ ($p < .001$), $df = 73$, CFI = 95, TLI = .94, RMSEA = .056 at 90% confidence interval (.055; .066). The Standardized factor loadings of the items ranged between .22 and .89 and were all significant as shown in figure 12 below.

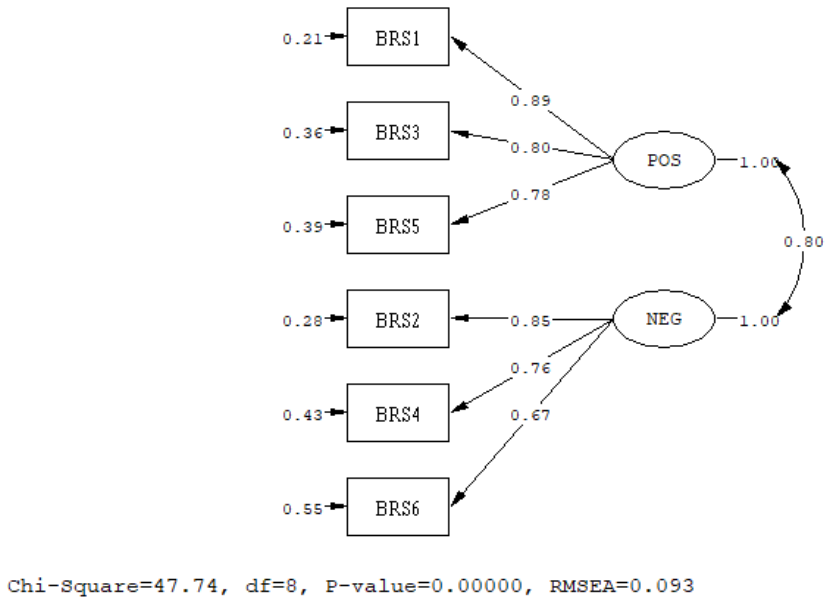
Figure 12 Confirmatory Factor Analysis for the Parenting Stress Scale (PSS)



Note. P_STRESS = Parental Stress factor; P_SAT = Parental Satisfaction factor; LACK_CON = Lack of Control; FEAR_ANX = Fear and Anxiety

'BRS' shows confirmatory fit indices for the "brief resilience scale modelled as a two-factor correlated model" as tested by Fung and others (Fung, 2020). The two factors were positive and negative factors, representing positively and negatively worded items respectively as shown below in figure 13. The model was a good fit for the data as shown by the following fit values $\chi 2 = 47.74$ ($p < .001$), $df = 8$, CFI = 98, TLI = .97 and RMSEA of .093 at 90% confidence interval (.069; .120). The standardized factor loadings ranged between .67 and .89 as shown in figure 13 below and were all significant.

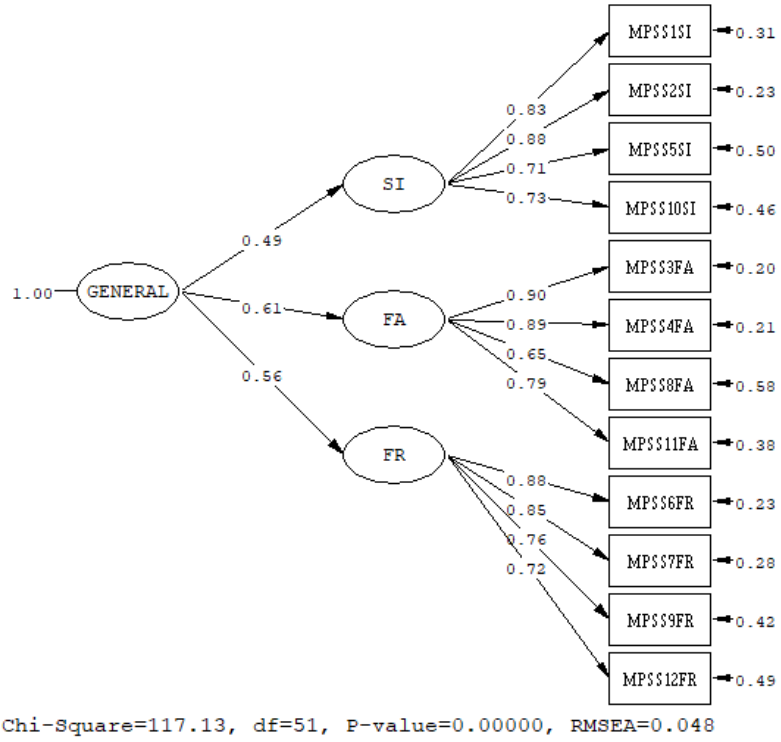
Figure 13 Confirmatory Factor Analysis for the Brief Resilience Scale (BRS)



Note. POS = Positive factor; NEG = Negative factor.

'MPSS' shows confirmatory fit indices for the "multidimensional scale of perceived social support modelled as a second-order three-factor model comprising three factors - significant other, family, and friends" (Başol, 2008; Teh et al., 2019). The model demonstrated an excellent fit for my data as seen in the values $\chi 2 = 117.13$ ($p < .001$), $df = 51$, CFI = .99, TLI = .98, RMSEA = .048 at 90% confidence interval (.036; .059). The standardized factor loadings for the items ranged between .65 and .90 and were all significant as shown in figure 14 below.

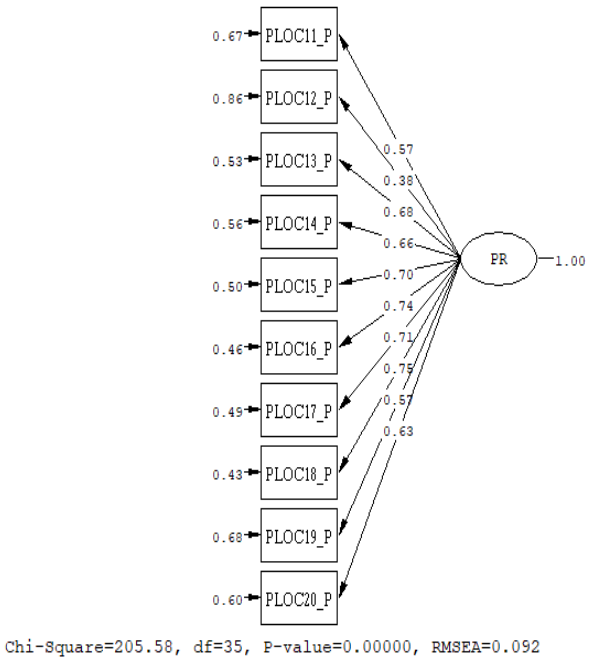
Figure 14 Confirmatory Factor Analysis for the Multidimensional Scale of Perceived Social Support (MPSS)



Note. SI = Significant other, FA = Family, FR = Friends.

'PR' shows confirmatory model fit indices for the "parental responsibility scale (a subscale of the Parental Locus of Control) modelled as a one-factor model" (Campis et al., 1986). The model indicated an excellent fit for the current data; $\chi 2 = 205.58$ ($p < .001$), $df = 35$, CFI = .96, TLI = .95, and RMSEA = .092 at 90% confidence interval (.080; .105). The standardized factor loadings for the items ranged between .38 and .75 and were all significant as shown in figure 15 below.

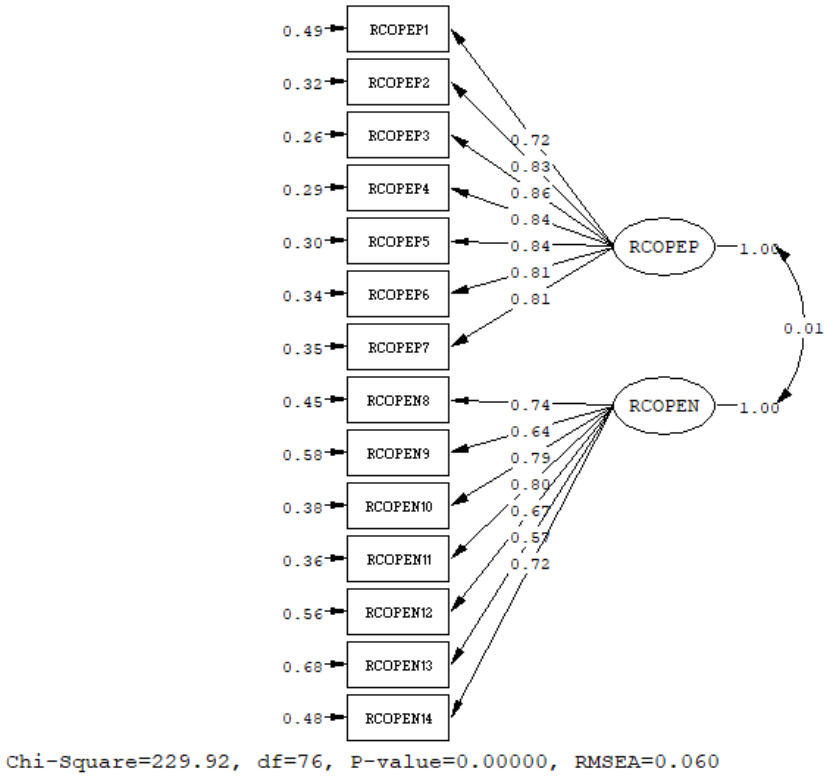
Figure 15 Confirmatory Factor Analysis for the Parental Responsibility Scale (PR)



Note. PR = Parental Responsibility.

'RCOPE' shows confirmatory model fit indices for the "brief religious coping scale (with positive and negative religious coping subscales) as a two-factor model" as originally modelled by the developers (Pargament et al., 2011) and as tested or validated by other users (McGrady et al., 2021; Mohammadzadeh & Najafi, 2016; Pargament et al., 2011). The two-factor CFA model for the brief RCOPE indicated an excellent fit for the current data; $\chi 2 = 229.92$ ($p < .001$), $df = 76$, CFI = .98, TLI = .97, and RMSEA = .060 at a confidence interval of 90% (.051; .069). The standardized factor loadings for the items ranged between .57 and .86 and were all significant as shown in figure 16 below.

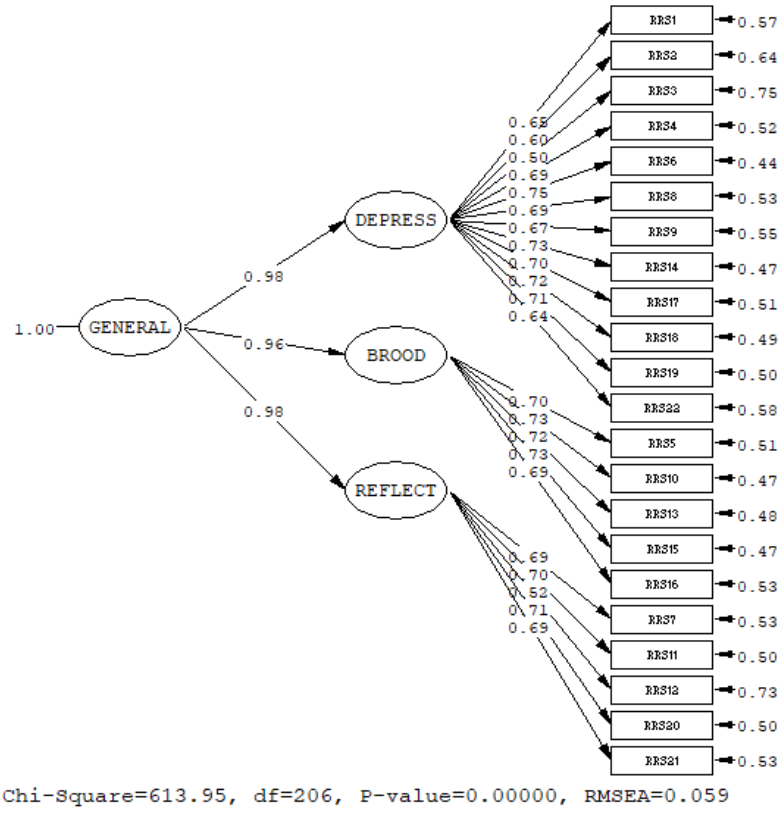
Figure 16 Confirmatory Factor Analysis for the Brief Religious Coping Scale (RCOPE)



Note. RCOPEP = Positive Religious Coping; RCOPEN = Negative Religious Coping.

'RRS' shows confirmatory model fit indices for the "rumination response scale as a second-order three-factor model" as modelled by Treynor and colleagues (Treynor et al., 2003). The model was an excellent fit, $\chi 2 = 613.95$ ($p < .001$), $df = 206$, CFI= .98, TLI = .98, and RMSEA = .059 at 90% confidence interval (.054; .064). The standardized factor loadings for the items ranged between .50 and .75 and were all significant as shown in figure 17 below.

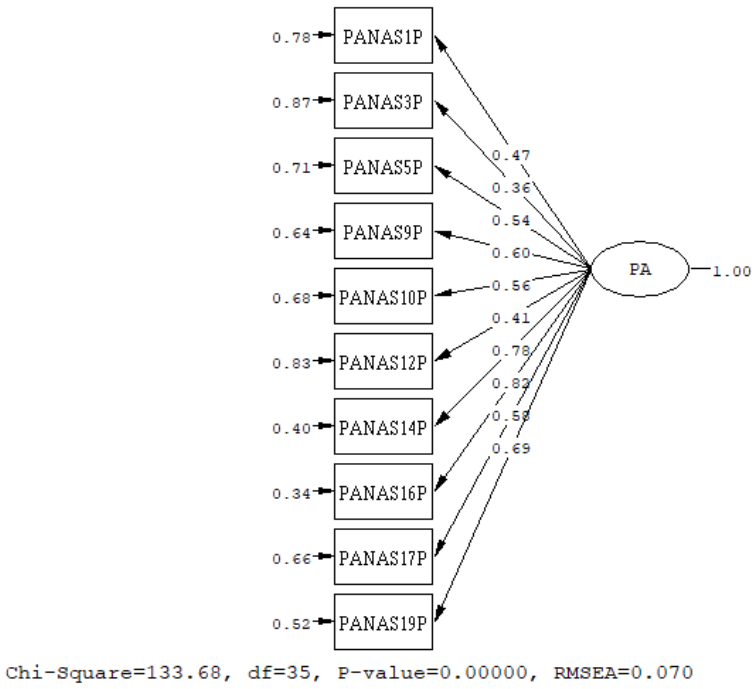
Figure 17 Confirmatory Factor Analysis for the Rumination Response Scale (RRS)



Note. DEPRESS = Depression-Related; BROOD = Brooding; REFLECT = Reflection.

'PA' shows model fit indices for the positive affect schedule which was modelled as a one factor model as this was the only variable of interest (Watson et al., 1988). The model fit the data very well, $\chi 2 = 133.68$ ($p < .001$), $df = 35$, CFI = .95, TLI = .94, and RMSEA = .070 at 90% confidence interval (.058; .083). The standardized factor loadings for the items ranged between .36 and .82 and were all significant as shown in figure 18 below.

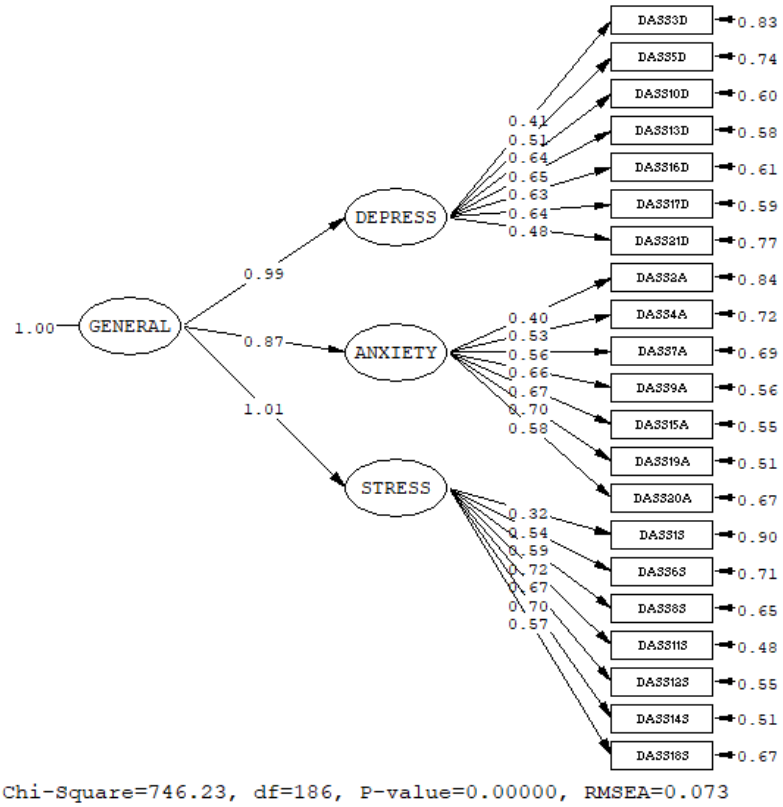
Figure 18 Confirmatory Factor Analysis for the Positive Affect Schedule (PA)



Note. PR = Parental Responsibility.

'DASS' shows confirmatory fit values for the "depression anxiety and stress scales (DASS-21) that was modelled as a second-order three-factor model" as originally modelled by the developers of the scale Lovibond and Lovibond (Lovibond & Lovibond, 1995) and in other studies (Gomez et al., 2020; Oei et al., 2013; Ruiz et al., 2017; Scholten et al., 2017; Sinclair et al., 2012). The three-factor model fit the data for this study very well; $\chi 2 = 746.23$ ($p < .001$), $df = 186$, CFI = .96, TLI = .95, and RMSEA = .073 at 90% confidence interval (.067; .078). The standardized factor loadings ranged from 0.32 to 0.72 as shown in figure 19 below.

Figure 19 Confirmatory Factor Analysis for the Depression Anxiety Stress Scale (DASS)



Note. DEPRESS = Depression; ANXIETY = Anxiety; STRESS = Stress.

Table 6 Fit Indices for all CFA Models Examined in the Main Survey (N = 571)

Models	$\chi 2$	*df*	RMSEA	CFI	TLI
PSS	202.63***	73	.056	.95	.94
BRS	47.74***	8	.093	.98	.97
MPSS	117.13***	51	.048	.99	.98
PR	205.58***	35	.092	.96	.95
RCOPE	229.92***	76	.060	.98	.97
RRS	613.95***	206	.059	.98	.98
PA	133.68***	35	.070	.97	.96
DASS	746.23***	186	.073	.96	.95

Note. *** $p < .001$, $\chi 2$ = Chi-square test, *df* = Degrees of freedom, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, RMSEA = Root Mean Square of Approximation, F = Factor, PSS = Parenting Stress Scale, BRS = Brief Resilience Scale, MSPSS = Multidimensional Scale of Perceived Social Support, PR = Parental Responsibility, RCOPE = Brief Religious Coping Scale (Positive, and Negative Religious Coping Scales), RRS = Rumination Response Scale, PA = Positive Affect, DASS = Depression Anxiety and Stress Scales.

6.7.3 Descriptive Statistics and Internal Consistency Reliability of the Scales

Table 7 shows Descriptive statistics and internal consistency of the scales used in this study. It shows that all the scales had internal consistency ranging from acceptable to very good (Cronbach's alphas ranged from .70 - .95). All scales were in the acceptable skewness ranges (below ± 1) except for one, positive religious coping. Positive religious coping was initially negatively skewed at -1.31, this was corrected by first transforming the figure using the reflection function and then the Log10 function, this helped to lower the value to an acceptable level of below ± 1 as can be seen in table 7 below with a value of .59.

Table 7 Psychometric Properties of the Scales in the Main Survey (N = 571)

Scale	*k*	*M(SD)*	Min	Max	*α*	*Skew*
Parenting Stress	18	46.49(8.39)	18	78	.70	-.39
Parental Responsibility	10	27.23(10.16)	10	50	.88	.42
Resilience	6	18.47(7.14)	6	30	.88	.00
Social Support	12	58.20(15.02)	12	84	.86	-.65
Positive Religious coping	7	18.43(3.60)	0	21	.93	.59
Negative religious coping	7	7.78(.35)	0	21	.87	.35
Rumination	22	48.61(13.13)	22	88	.95	.62
Positive Affect	10	36.96(7.67)	20	50	.84	-.05
Depression	7	5.32(3.68)	0	21	.75	.83
Anxiety	7	4.56(3.72)	0	18	.78	.98
Stress	7	5.10(3.58)	0	18	.78	.77
DASS	21	17.97(9.93)	3	56	.90	.78

Note. k = Number of items, *M* = Mean, *SD* = Standard Deviation, *α* = Cronbach's Alpha Coefficient, DASS = Depression-Anxiety-Stress

6.7.4 Prevalence of depressive, anxiety, and stress/tension symptoms among participants

Table 8 below shows the prevalence of depressive, anxiety, and stress/tension symptoms among the participants in the current study as measured by the DASS. The results reveal that 20.9% had mild depressive symptoms, while 26.3% had moderate depressive symptoms, whereas 5.7% had severe depressive symptoms, and 3.2% had extremely severe depressive symptoms. In terms of anxiety symptoms, 19.6% had mild anxiety symptoms, while 17.2% had moderate anxiety symptoms, whereas 8.9% had severe anxiety symptoms, and 9.6% had extremely severe anxiety symptoms. For stress/tension, 8.6% had mild stress/tension symptoms, while 7.8% had moderate stress/tension symptoms, whereas 3.5% had severe stress/tension symptoms, and 0.7% had extremely severe stress/tension symptoms.

Table 8 Prevalence of depressive, anxiety, and stress symptoms among participants (N = 571)

	Depression		Anxiety		Stress/tension	
Degree of severity	score	%	score	%	score	%
Normal	0 - 4	44.2	0 - 3	44.9	0 - 7	79.5
Mild	5 - 6	20.9	4 - 5	19.6	8 - 9	8.6
Moderate	7 - 10	26.3	6 - 7	17.2	10 -12	7.8
Severe	11 - 13	5.7	8 - 9	8.9	13 - 16	3.5
Extremely Severe	14 +	3.2	10 +	9.6	17 +	.7

Note. The DASS is not a categorical measure of clinical diagnosis. The labels are used to describe the full range of scores in the population, so 'mild' for example may mean the person is above the population mean but does not outrightly mean a mild level of disorder, hence referred to as symptoms. It should be used in conjunction with all clinical information available to determine appropriate treatment for any individual.

6.7.5 Correlations among Main Variables

Table 9 shows correlations among the main variables of the study: Parenting stress, parental responsibility, resilience, social support, positive religious coping, negative religious coping, rumination, positive affect, depression, anxiety, stress, and DASS.

Findings from Pearson's correlation revealed that adolescent mothers who reported high parenting stress were likely to report significantly lower levels of parental responsibility, lower levels of resilience, lesser usage of positive religious coping, greater usage of negative religious coping, and higher levels of rumination. With regards associations between parenting stress and outcome variables, those who reported high parenting stress reported lower levels of positive affect, higher depressive, anxiety, tension, and overall distress (DASS) symptoms. However, no association was found between parenting stress and social support.

Meanwhile, parental responsibility was likely to be higher in older adolescents than younger ones. And higher parental responsibility was associated with lower parenting stress, lower positive affect, and lower distress (depressive, anxiety, and tension) symptoms. However, no associations were found between parental

responsibility and resilience, social support, religious coping (positive and negative), and rumination.

Likewise, adolescent mothers with higher levels of resilience were likely to report lower parenting stress, greater usage of positive religious coping, lower usage of negative religious coping, higher levels of positive affect outcomes, and lower levels of distress (depressive, anxiety, and tension) symptoms. However, no associations were found between resilience and parental responsibility, social support, and rumination.

Equally, adolescent mothers who reported having social support were likely to engage in greater use of negative religious coping. However, social support was not associated with parenting stress, parental responsibility, resilience, positive religious coping, rumination, or any of the outcome variables.

Similarly, adolescent mothers who reported greater use of positive religious coping were likely to report lower parenting stress, higher levels of resilience, were likely to report greater rumination, higher positive affect outcomes, and lower anxiety symptoms. However, positive religious coping was not associated with parental responsibility, social support, negative religious coping, depression, and stress/tension symptoms.

Meanwhile, adolescent mothers who reported greater use of negative religious coping were likely to report higher parental stress, lower levels of resilience, stronger social support, likely to report greater rumination, lower positive affect outcomes, and higher distress (depressive, anxiety, and stress) symptoms. However, negative religious coping was not associated with parental responsibility, and positive religious coping.

Correspondingly, adolescent mothers who reported greater use of rumination were likely to report higher parental stress, greater use of positive and negative religious

coping, likely to report lower positive affect outcomes, and higher distress (depressive, anxiety, and stress) symptoms. However, rumination was not associated with parental responsibility, resilience, and social support.

Table 9 Correlations among Variables in the Main Survey (N = 571)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1 Parenting Stress	-											
2 Parental Responsibility	-.15***	-										
3 Resilience	-.19***	.01	-									
4 Social Support	-.03	-.04	.04	-								
5 Positive religious coping	-.14***	-.04	.12**	.08	-							
6 Negative religious coping	.35***	-.08	-.14**	.11*	.03	-						
7 Rumination	.26***	.01	-.08	-.03	.24***	.35***	-					
8 Positive Affect	-.23***	-.25***	.11**	-.01	.38***	-.23***	-.14**	-				
9 Depression	.36***	-.13**	-.22***	-.00	-.04	.38***	.44***	-.24***	-			
10 Anxiety	.31***	-.18***	-.17***	-.04	-.21***	.27***	.28***	-.17***	.70***	-		
11 Stress	.26***	-.14***	-.17***	.00	.02	.33***	.40***	-.06	.78***	.71***	-	
12 DASS	.34***	-.16***	-.21***	-.01	-.08*	.37***	.41***	-.17***	.91***	.89***	91***	-

Note. DASS = Depression-Anxiety-Stress combined, *** = $p < .001$, ** = $p < .01$, * = $p < .05$

6.7.6 Moderated Mediation Model

The model for this study was tested using moderated mediation with SEM using Mplus version 8.3, whilst controlling for demographic characteristics like adolescent mother's age, baby's age, and baby's gender. The following steps were taken leading up to this. First, item parceling technique was used for the moderated mediation model. Item parceling was used because of the small sample size relative to the number of measurement items (Kwan et al., 2022; Little et al., 2002). Moreover, parcels have higher reliability than individual items, and the use of item parceling can enhance the accuracy of parameter estimates (Kwan et al., 2022; Little et al., 2002).

Three item parcels were created for each variable. For each of the unidimensional measures (PR, RCOPEP, RCOPEN, and PA), balanced parcels were formed based on the factor loadings of a one-factor model. In particular, the three items with the strongest loadings were used to anchor the three parcels, the three items with the next strongest loadings were assigned to the anchors in a reversed order. The strongest loading items among the anchors were joined to the weakest loading items from among those selected in the second round, and so on if there were more items available (Little et al., 2002; Matsunaga, 2008).

For each of the multidimensional measures (PSS, BRS, MPSS, RRS, DASS), three item parcels were formed using the domain-representative approach (Little et al., 2002), such that items from each dimension or subscale were assigned to different parcels. For instance, each parcel was created by combining items from the different dimensions or subscales of a particular variable. For example, when it came to the three parcels of the DASS, each contained items from the depression subscale, items from the anxiety subscale, and items from the stress subscale. It was justifiable to parcel the DASS because

the subscales (depression, anxiety, stress scales) were very strongly correlated. Moreover, they all loaded on one general factor during CFA (see figure 19 under section 6.7.2, page 135 showing the second order factor structure) to form a single dimension, thereby meeting the requirements of unidimensionality which is a prerequisite for parceling (Matsunaga, 2008). And this was the same for other scales like social support (MPSS), rumination (RRS), and parenting stress (PSS), which also loaded on a general factor in the higher order confirmatory factor analysis.

Control Variables

Control variables included mother's age, baby's age, and baby's gender (1 = male, 0 = female), and were added when estimating each path.

Mediation Models (without interaction effects)

The latent moderated structural equations (LMS) method (Maslowsky et al., 2015) was used to examine the moderated mediation model. First, models without interaction effects were estimated. Next, models with interaction effects were estimated. The fit of the models was compared.

Following the suggestion by James et al. (2006), partial mediation and full mediation models were tested (James et al., 2006). The partial mediation model showed a good fit, $\chi^2(366) = 826.39$, $p < .001$, CFI = .96, TLI = .95, RMSEA = .047, 90% CI (.043, .051). The direct effects from parenting stress (PSS) on positive affect (PA) and mental distress (depression anxiety stress - DASS) were not significant (β = -.04, S.E = .06, p = .496) and (β = -.01, S.E = .05, p = .855), respectively. Therefore, H1 which hypothesized that parenting stress would directly negatively predict positive affect (H1a), and positively predict mental distress (H1b) was supported before mediation but not supported by the results after mediation. The full mediation model (without the direct

effects from PSS on PA and DASS) also showed a good fit, $\chi^2(368) = 826.89$, $p < .001$, CFI = .96, TLI = .95, RMSEA = .047, 90% CI (.042, .051). The full mediation was not significantly worse than the partial mediation model, $\Delta\chi^2(2) = .50$, $p = .778$. Therefore, the more parsimonious full mediation model was retained.

Latent Moderated Structural Equations (LMS) Models

LMS models with latent interaction terms were estimated. The latent interaction terms were formed using the XWITH command of Mplus (Maslowsky et al., 2015). Because fit indices were not available for LMS models, log-likelihood tests were performed to compare the model fit between LMS models and the full mediation model. A significant log-likelihood test indicated that adding the latent interaction term led to a significantly improved model fit. See latent interaction terms below in table 10.

Table 10 Log-likelihood Tests of Latent Interaction Terms

IV	Moderator	DV	$\Delta\chi^2(1)$	*p*
PSS	MPSS	RRS	1.20	.274
PSS	MPSS	RCOPEN	1.16	.281
RRS	MPSS	PA	2.71	.100
RRS	MPSS	DASS	.30	.581
RCOPEN	MPSS	PA	.05	.830
RCOPEN	MPSS	DASS	.15	.695
PSS	BRS	RRS	.00	1.000
PSS	BRS	RCOPEN	.50	.480
RRS	BRS	PA	.95	.329
RRS	BRS	DASS	.48	.490
RCOPEN	BRS	PA	.50	.478
RCOPEN	BRS	DASS	1.02	.313
PSS	PR	RRS	1.00	.318
PSS	PR	RCOPEN	.11	.740
RRS	PR	PA	10.05	.002
RRS	PR	DASS	3.67	.055
RCOPEN	PR	PA	2.64	.104
RCOPEN	PR	DASS	.21	.650

Note. PSS = Parenting stress, RRS = Rumination, RCOPEN = Negative religious coping, PA = Positive Affect, DASS = Depression-Anxiety-Stress, MPSS = Social Support, BRS = Resilience, PR = Parental Responsibility

Adding most of the latent interaction terms did not significantly improve the model fit, those interaction terms were not included in the model. Thus, H4 and H6 were not supported. H4 hypothesised that resilience would moderate the indirect effect of parenting stress through negative religious coping on positive affect (H4a), and on mental distress (H4b), the indirect effect of parenting stress through rumination on positive affect (H4c), and on mental distress (H4d). H6 hypothesised that social support would moderate the indirect effect of parenting stress through negative religious coping on positive affect (H6a), and on mental distress (H6b). The indirect effect of parenting stress through

rumination on positive affect (H6c), and on mental distress (H6d).

Also, important to note that the interaction terms were not estimated on direct paths from PSS to PA and DASS, as RSS, RCOPEN and RCOPEP fully mediated these paths. Hence, interaction terms were only estimated on indirect paths.

Adding the RRS × PR interaction effect on PA significantly improved the model fit, $\Delta\chi^2(1) = 10.05$, $p = .002$. The LMS model with this interaction effect was retained as the final model (see figure 20 below for the illustration of the final moderated mediation model), and all mediation effects remained significant (as shown in table 11 and 12 below). This model's latent variables had strong standardized factor loadings which ranged from .62 to .90. The model indicates that rumination, negative religious coping, and positive religious coping were positively predicted by parenting stress. Positive affect was negatively predicted by rumination and negative religious coping, and positively predicted by positive religious coping. Mental distress (DASS) was positively predicted by rumination and negative religious coping, and negatively predicted by positive religious coping. All path coefficients for the final moderated mediation model in Mplus are reported in table 11 below.

Table 11 Path Coefficients for the Final Moderated Mediation Model

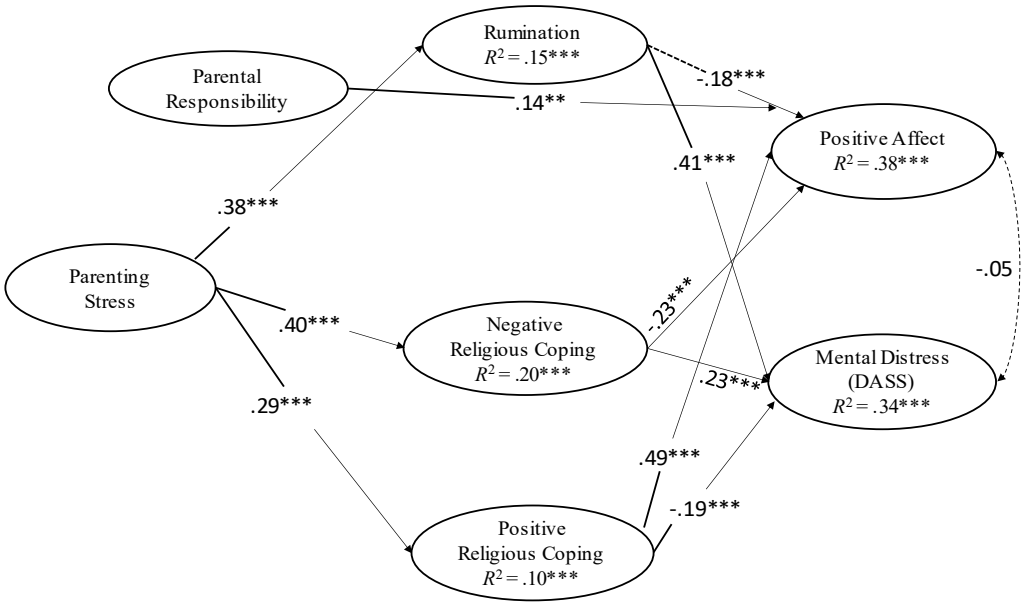
Variable	Estimate	S.E.	Est./S.E.	*p*
Dependent variable: PA				
PR	.29	.04	7.34	.000
BRS	.02	.04	.55	.583
MPSS	-.03	.41	-.63	.527
RRS	-.18	.04	-4.14	.000
RRS × PR	.14	.05	3.07	.002
RCOPEP	.49	.04	13.08	.000
RCOPEN	-.23	.05	-5.02	.000
Mother's age	-.04	.04	-1.03	.305
Baby's age	.00	.02	.01	.995
Baby's gender	-.14	.08	-1.78	.076
Dependent variable: DASS				
PR	.14	.04	3.65	.000
BRS	-.13	.04	-3.24	.001
MPSS	-.01	.04	-.30	.765
RRS	.41	.04	10.47	.000
RCOPEP	-.19	.04	-4.88	.000
RCOPEN	.23	.04	5.36	.000
Mother's age	.02	.04	.36	.720
Baby's age	-.03	.01	-2.03	.042
Baby's gender	.07	.07	.97	.333
Dependent variable: RRS				
PSS	.38	.05	8.49	.000
PR	-.07	.05	-1.66	.098
BRS	-.05	.04	-1.03	.301
MPSS	-.02	.04	-.39	.696
Dependent variable: RCOPEP				
PSS	.29	.05	6.21	.000
PR	-.05	.05	-.99	.322
BRS	.17	.04	3.83	.000
MPSS	.03	.04	.60	.546
Dependent variable: RCOPEN				
PSS	.40	.05	8.80	.000
PR	.01	.05	.25	.802
BRS	-.12	.04	-2.67	.008
MPSS	.13	.04	3.02	.003

Correlations				
PR with PSS	.19	.05	3.70	.000
BRS with PSS	-.10	.05	-2.04	.041
BRS with PR	-.01	.05	-.29	.776
MPSS with PSS	.05	.05	1.05	.292
MPSS with PR	.06	.05	1.29	.196
MPSS with BRS	.04	.05	.88	.379
DASS with PA	-.05	.05	-.95	.341

Note. PA = Positive Affect, DASS = Mental distress, PSS = Parenting stress, RCOPEP = Positive religious coping, RCOPEN = Negative religious coping, RRS = Rumination, PR = Parental responsibility, BRS = Resilience, MPSS = Social support, Mother's age = Adolescent mother age, RRS × PR = Interaction term of Rumination & Parental Responsibility, S.E. = Standard error, *p* = p value

Having reported all path coefficients in the table above, figure 20 below illustrates the final moderated mediation model. Non-significant moderators, control variables, and parceled indicators are omitted in the figure below for clarity purposes.

Figure 20 Final Latent Moderated Mediation Structural Equation Model Predicting Positive Affect and Mental Distress



Note. Standardized coefficients are reported. Solid lines represent significant paths. Broken lines represent non-significant paths. Mother's age, baby's age, and baby's gender (1 = male, 0 = female), were included as control variables for each path. Non-significant moderators (resilience, and social support), measurement errors, parceled indicators, factor loadings, control variables, and direct paths from moderators are omitted for clarity. $^{**}p < .01$. $^{***}p < .001$

Indirect effects of parenting stress (PSS) on positive affect (PA), and mental distress (DASS) through rumination (RRS), positive religious coping (RCOPEP), and negative religious coping (RCOPEN)

As shown in table 12 below, bootstrapping (1000 resamples) at bias-corrected 95% confidence interval were used to examine indirect effects. As hypothesized in H2 that positive religious coping would mediate the relationship between parenting stress and positive affect (H2a), and mental distress (H2b). And that negative religious coping would mediate the relationship between parenting stress and positive affect (H2c), and mental distress (H2d). The indirect effect of parenting stress through positive religious coping on positive affect (b = .17, BC 95% CI [.11, .24], β = .14), and mental distress (b = -.04, BC

95% CI [-.06, -.02], β = -.06) were significant. Also, the indirect effect of parenting stress through negative religious coping on positive affect (*b* = -.11, BC 95% CI [-.19, -.06], β = -.09), and mental distress (*b* = .07, BC 95% CI [.04, .10], β = .09) were significant. Thus, these results fully supported H2. As hypothesized in H3 that Rumination would mediate the relationship between parenting stress and positive affect (H3a), and mental distress (H3b). The indirect effect of parenting stress through rumination on positive affect (*b* = .06, BC 95% CI [.02, .10], β = .04), and mental distress (*b* = .11, BC 95% CI [.07, .16], β = .16) were significant. Thus, these results fully supported H3.

Table 12 Bootstrapping Mediation Analyses at Bias-Corrected 95% Confidence Interval

Indirect Path	Indirect Effect		BC 95% CI		
	b	β	Lower	Upper	
PSS→RCOPEP→PA	.17	.14	.11	.24	significant
PSS→RCOPEP→DASS	-.04	-.06	-.06	-.02	significant
PSS→RCOPEN→PA	-.11	-.09	-.19	-.06	significant
PSS→RCOPEN→DASS	.07	.09	.04	.10	significant
PSS→RRS→PA	.06	.04	.02	.10	significant
PSS→RRS→DASS	.11	.16	.07	.16	significant

Note. PSS = Parenting stress, PA = Positive Affect, DASS = Mental distress, RCOPEP = Positive religious coping, RCOPEN = Negative religious coping, RRS = Rumination, BC = Bias-Corrected Bootstrap, CI = Confidence Interval,
b = Unstandardized coefficient, *β* = Standardized coefficient

Moderation of parental responsibility on the indirect effects of parenting stress (PSS) on positive affect (PA), and mental distress (DASS) through rumination (RRS)

The rumination (RRS) × parental responsibility (PR) interaction effect on positive affect (PA) was significant (b = .14, β = .11, p = .002). The conditional effect of RRS on PA was significant when PR was low (b = -.34, β = -.29, p < .001) or medium (b = -.21, β = -.18, p < .001), but not when PR was high (b = -.09, β = -.07, p = .206). See table 13 below.

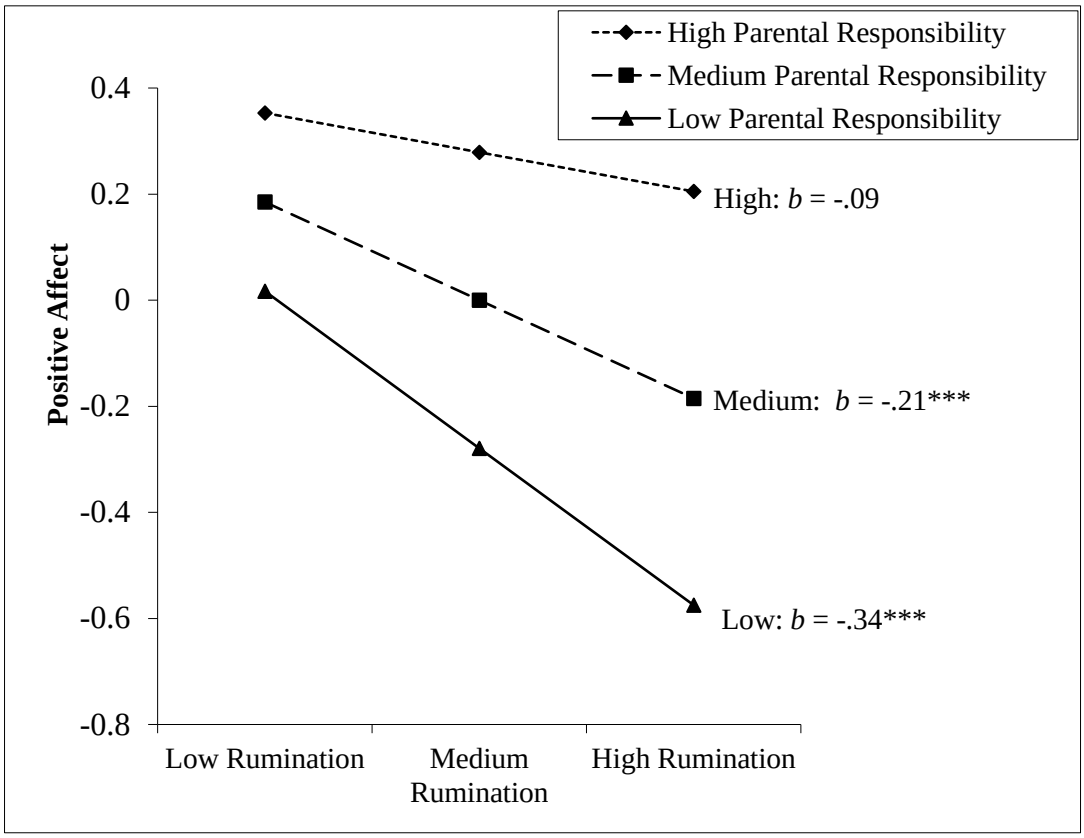
Table 13 Conditional effects of rumination on positive affect at low, medium, and high levels of parental responsibility

Parental Responsibility	*b*	*β*	*p*
Low	-.34	-.29	.000
Medium	-.21	-.18	.000
High	-.09	-.07	.206

Note. b = Unstandardized coefficient, β = Standardized coefficient, p = p value

The simple slopes analysis below shows that rumination was negatively related to positive affect at low and medium (average) levels but not at high levels of parental responsibility. That is, engaging in high levels of rumination only predicted low (less) positive affect among adolescent mothers who had low levels of parental responsibility (less responsible as parents). Conversely, high levels of parental responsibility could bridge the gap between adolescent mothers who are high ruminators compared to low ruminators. As observed in figure 21 below, the simple slopes suggest that low levels of rumination have the potential to compensate for low levels of parental responsibility, such that even adolescent mothers scoring low on parental responsibility were protected from lower levels of positive affect if they ruminated to a lesser extent.

Figure 21 Simple slopes for the effect of rumination on positive affect at low, medium, and high levels of parental responsibility



The bootstrapping technique was used to estimate the index of moderated mediation and conditional indirect effects. Bias-corrected 95% confidence intervals (BC 95% CIs) were computed based on 1000 bootstrap resamples. The index of moderated mediation was significant (b = .06, BC 95% CI [.02, .10], β = .04). The conditional indirect effect of PSS on PA through RRS was significant when PR was low (b = -.13, BC 95% CI [-.21, -.08], β = -.11) or medium (b = -.08, BC 95% CI [-.14, -.04], β = -.07), but not when PR was high (b = -.03, BC 95% CI [-.10, .02], β = -.03). That is, high parenting stress led to engaging in high levels of rumination, which only predicted lowest positive affect among adolescent mothers who had low levels of parental responsibility (less responsible as parents). Conversely, high levels of parental responsibility could bridge the gap between adolescent mothers who reported high rumination compared to low rumination.

As observed in figure 21, the simple slopes suggest that low levels of rumination have the potential to compensate for low levels of parental responsibility, such that even adolescent mothers scoring low on parental responsibility were protected from lower levels of positive affect if they ruminated to a lesser extent.

Thus, H5 was partially supported when the results supported H5c. H5 hypothesised that parental responsibility would moderate the indirect effect of parenting stress through negative religious coping on positive affect (H5a), and on mental distress (H5b), the indirect effect of parenting stress through rumination on positive affect (H5c), and on mental distress (H5d). However, only H5c was supported.

6.7.7 Conclusion

This section presented findings for the main survey (study 2). Hypothesis 1 was supported by the results before mediators were introduced to the model. Parenting stress negatively predicted positive affect and positively predicted mental distress before the mediators were introduced to the model, but these effects became non-significant after mediators were introduced signifying full mediation. Hypotheses 2 or 3 were supported by the results as shown by the significant mediations. Religious coping (both positive and negative religious coping) and rumination were all significant mediators. However, hypotheses 4 and 6 were not supported, because both resilience and social support were not significant moderators. Hypothesis 5 on the other hand was partly supported as shown by the results that revealed that parental responsibility significantly moderated the indirect effect of parenting stress on positive affect through rumination. Having presented the findings, the next section presents the discussion of the current study.

6.8 Discussion

6.8.1 Introduction

Having reviewed theories and empirical studies related to stress and coping in general (Lazarus & Folkman, 1984), parenting stress (Berry & Jones, 1995) in particular, positive and negative religious coping (Pargament et al., 2011), rumination (Nolen-Hoeksema, 1991), resilience (Hurd, 2010a, 2010b), parental responsibility (Campis et al., 1986), and social support (Huang et al., 2014); the current study aimed at contributing to extant literature by attempting to enrich the "Lazarus and Folkman's Stress and Coping model" by incorporating extra variables like rumination, religious coping, resilience, parental responsibility, and social support. Specifically, the current study's objectives were to test a hypothesized moderated mediation model in which I predicted that the effects of parenting stress on adolescent mothers' mental health (positive affect and distress) would be mediated by positive and negative religious coping, and rumination, and that the indirect effects would be moderated by resilience, parental responsibility, and social support. The results from this study adequately supported the moderated mediation model for positive affect, and mental distress.

First, parenting stress negatively predicted positive affect and positively predicted mental distress outcomes after accounting for demographic variables and before mediators were introduced. Second, positive religious coping, negative religious coping, and rumination all independently and significantly, in a concurrent manner, mediated the parenting stress – mental health relationship. Moreover, it was observed that the direct effects of parenting stress on both positive affect, and mental distress became non-significant after mediators were introduced to the model, signifying that the mediators fully explain the effect of parenting stress on mental health (positive affect, and mental distress). Confirming my prediction that parenting stress influences the mental health of

adolescent mothers through positive religious coping, negative religious coping, and rumination.

Third, parental responsibility was a significant moderator in one of the mediation paths of the model. However, both resilience and social support were not significant moderators of any of the mediation paths in this model. Overall, the results put together deliver an advancement to extant literature which has previously predominantly focused on direct effects of parenting stress on adolescent mothers' mental health and overlooked possible mediating and moderating processes. The findings in this study offer a different dimension and pathways for understanding the effects of parenting stress on the mental health of adolescent mothers from a different social perspective. The findings also enrich "Lazarus and Folkman's 1984's classic stress and coping model."

Next, I discuss the findings in detail.

6.8.2 Main effect of parenting stress on mental health (positive affect and mental distress)

As hypothesised in H1, it was found that parenting stress negatively predicted positive affect (H1a), and positively predicted mental distress (H1b). Adolescent mothers with low parenting stress had a higher likelihood of attaining higher positive affect, and low mental distress than their counterparts with high parenting stress after controlling for covariates. These findings are consistent with previous findings which found a negative relationship between stress and positive affect (Diener et al., 1999; Hurd, 2010a; Watson et al., 1988). They are also consistent with findings that found a positive relationship between parenting stress and mental distress (Barnet et al., 1996; Emery et al., 2008; Hans & Thullen, 2009; Huang et al., 2014; Jaffee, 2002; Venkatesh et al., 2014; Zeiders et al., 2015).

The negative relationship between parenting stress and positive affect could be related to environmental or contextual effects. It is possible that adolescent mothers coming from advantaged socio-economic backgrounds may experience for example less parenting stress perhaps because they are assisted with baby provisions, thereby have less worries. This would then translate into higher positive affect as their burdens are somehow alleviated and they would not have to fend for their baby alone (Edwards et al., 2012). Also, it is possible that adolescent mothers with supportive partners (regardless of marital status) that help with baby maintenance may experience lower parental stress. This is because stressors would have been reduced, thereby they would be happier as they would have less things to worry about (Diener et al., 1999). Additionally, it is also probable that adolescent mothers coming from supportive families and tightly knit communities (as is common in the Zambian setting) may not experience much parenting stress. This is because they may have strong support systems in place that may offset adverse effects of stress, in turn keeping positive affect at higher levels (Rocca et al., 2010). It is also plausible that even when they are coming from poor backgrounds, advise on parenting as well as assistance in caring for the baby would contribute to having a lower stress environment which is associated with higher positive affect (Huang et al., 2014).

Thus, participants with high parenting stress might have reported low positive affect probably because of the absence of the above contextual factors, which may imply for example that some adolescent mothers could find themselves in various life challenging situations that could breed or exacerbate parenting stress in turn leading to low positive affect and high negative affect (being upset, disinterested, irritable) (Allgöwer et al., 2001; Diener et al., 1999; Lee et al., 2016; Watson et al., 1988).

On the other hand, the positive relationship between parenting stress and mental

distress could probably be related to the absence of the above contextual factors, which may imply, for example, that some adolescent mothers may find themselves in various life challenging situations that could breed or exacerbate parenting stress in turn leading to high mental distress. Adolescent mothers, especially those from disadvantaged backgrounds, may face various challenges for example parenting alone, inexperience in the parenting role because of age, unemployment status, solely providing for their infants (in cases of run-away fathers), single or double orphaned (especially in LMIC's such as Zambia). Besides, adolescent mothers may for example face a lot of ridicule and discrimination from their family, friends, schoolmates, and community. They may also likely have tensions with parents or guardians because of the perceived shame/ and or further financial burden brought on the family. This could be because they lack partners/ or husbands, are still young and not in employment, making them financially unstable (Goodman & Brand, 2011; Emery et al., 2008; Hans & Thullen, 2009; Huang et al., 2014).

Furthermore, this finding is consistent with previous studies which found high parenting stress to be associated with heightened depression, anxiety, post-traumatic stress disorder, self-destruction thoughts, temperament issues, concentration troubles, appetite loss, trouble sleeping, among others (Deal & Holt, 1998; East & Barber, 2014; Huang et al., 2014; Mukwato et al., 2017; Milan et al., 2004; Plotnick, 1992; Socolov et al., 2017; Tam & chung, 2007; Turkyilmaz & Hesapcioglu, 2019; Venkatesh et al., 2014; Zeiders et al., 2015). This finding contributes to extant literature arguing that adolescent mothers with high parenting stress are likely to experience high mental distress. They also further confirm assertions of adverse effects of parenting stress on adolescent mothers' mental health outcomes. A scenario more pronounced in adolescent mothers from poorer backgrounds and in those with strained relationships with partners [Infant's father] (Emery et al., 2008; Jaffee, 2002). Thus, those with low parenting stress might have

reported low mental distress probably due to more conducive contextual scenarios.

6.8.3 Mediating role of religious coping

As hypothesised in H2, it was found that the effect of parenting stress on mental health was mediated by religious coping. Particularly, as hypothesized in H2a and H2b, positive religious coping mediated the relationship between parenting stress and positive affect, and mental distress, respectively. Also, as hypothesized in H2c and H2d, negative religious coping mediated the relationship between parenting stress and positive affect, and mental distress, respectively. In the next section, I discuss positive religiosity and then negative religiosity follows.

6.8.3.1 Mediating role of positive religious coping

The present study found that the effect of parenting stress on positive affect was mediated by positive religious coping. Suggesting that parenting stress had an indirect influence on positive affect, through positive religious coping, such that higher parenting stress led to greater use of positive religious coping, which in turn was associated with higher positive affect. Interestingly, contrary to a negative association found between parenting stress and positive religious coping in Pearson correlation, and contrary to our prediction that parenting stress would negatively predict positive religious coping (on one side of this indirect path), parenting stress positively predicted positive religious coping. This finding is consistent with a smaller fraction of studies which found a rare positive association between a negative construct and positive religious coping (Pargament et al., 2011; Pearce et al., 2006).

An explanation for this could be that adolescent mothers who are greatly stressed are highly likely to resort to more positive constructs of religion as a way of coping. For

example, they could likely turn to a higher power for strength as they grow wary, and as a way of refraining from worries. This in turn is likely to lead to higher positive affect which could come in form of improved mood; more positive emotions such as greater happiness; pleasant feelings such as feeling more hopeful, and greater optimism, among others. Thus, positive religious copying could explain why some adolescent mothers experienced high positive affect despite having faced high parenting stress. This is plausible considering Zambia is a relatively religious country, predominantly Christian. Perhaps it could be further argued that engaging in positive religious coping helped them perceive the stress as a challenge or tribulation or a passing phase, designed to make them stronger. Alternatively, positive religious coping may have instilled a sense of available assistance from an invisible higher authority. This then may probably help increase their faith and boost their confidence to deal with the stress by drawing upon their capabilities such as personal and social resources, leading to higher positive affect (Pargament & Brant, 1998; Park et al., 2018).

Moreover, literature argues that positive religious beliefs foster a sense of purpose, deepens one understanding, and cultivates psychological support (Park et al., 2018). These findings go on to argue that people are likely to engage in positive coping when they believe they have capabilities (personal and social resources) to deal effectively with the stressful situation, impacting positively on their affect (Park et al., 2018). Suffice to note that even though a large body of literature occasionally found a relationship between negative constructs such as stress and positive religious coping, and that when they did it was usually negative (Pargament et al., 2011), the current study found a positive relationship (meaning increased parenting stress was associated with increased religious coping) which in turn resulted into higher positive affect despite the higher stress among some adolescent mothers. Thereby, highlighting the protective role of positive religious

coping in the mental health of adolescent mothers. This in turn informs theoretical, practical and policy implications to the adolescent mothers' parenting stress and mental health discourse as well as religious coping literature.

However, even though plausible explanations have been given above for the current findings, I will not rule out yet another alternative explanation for the inconsistent direction of relations between parenting stress and positive religious coping in the correlation and SEM analysis. This inconsistent could be because of the suppression effect of mediation analysis. This could come about when the direct and indirect effects of an independent variable on the dependent variable have opposite signs (MacKinnon et al., 2000; Preacher & Hayes, 2008).

Additionally, as hypothesised in H2b, the present study also found that positive religious coping mediated the relationship between parenting stress and mental distress. It was revealed that parenting stress had an indirect influence on mental distress, through positive religious coping, such that higher parenting stress led to greater use of positive religious coping, which in turn was associated with lower mental distress (lesser depressive, anxiety, and stress symptoms). These findings are consistent with a smaller fraction of studies which found a negative association between positive religious coping and mental distress indicators like depression, and anxiety (Bjorck & Thurman, 2007; Cole, 2005; Park et al., 2018). This is because most studies found no association between positive religious coping and negative constructs like anxiety and depression, and if they did, it was usually non-significant (Carpenter et al., 2012; Pargament et al., 2011). Drawing on the "Lazarus and Folkman's (1984) stress and coping model," these findings suggest that higher parenting stress might have prompted some adolescent mothers to turn to God for strength, for hope, for elimination of fear or worry, for holy meaning, for help, for wisdom, for clarity on the course of action, as a way of coping, which may have

resulted into less distress (depressive and/or anxiety symptoms). It may also be possible that during periods of increased parenting stress, adolescent mothers would turn to religion in the form of seeking help from a higher power (sacred strength) or from fellow church members which in turn would result in lesser distress. Alternatively, engaging in positive religious coping during stressful periods might have helped the young mothers perceive the stress as a challenge rather than a threat, which they could capably take on and overcome, in turn leading to low mental distress (depression, anxiety, and stress). Moreover, it could be that turning to God/positive religion probably brought a sense of awareness into possible availability of resources, both social (such as a higher power, loved ones, friends, community and many more), and personal (capabilities and strengths) to meet various demands and deal effectively with the different stressful situations, resulting in less distress.

More notably, the current findings suggest that engaging in positive religious coping such as building a stronger relationship with God and seeking strength in him, seeking love, care, and help in dealing with anger, involving God when executing plans, asking forgiveness, and turning to religion to refrain from worries is important in promoting adolescent mother's mental health, specifically increasing positive affect, and reducing mental distress. The current findings highlight the protective role of positive religious coping in the mental health of adolescent mothers regardless of the magnitude of parenting stress, such that even amid increased parenting stress, the influence of positive religious coping on mental health remains vital. Hence, while previous studies focused on religious coping mostly with chronic medical patients or major trauma victims (of which most were on adult samples), and a few among university students (we cannot assume the dynamics mirror those in adolescents, and adolescent mothers in particular), thus, the current study explored it in young mothers, particularly from LMIC context that

has been narrowly explored. Therefore, future research could focus on interventions aimed at deliberately increasing the use of positive religious coping.

6.8.3.2 Mediating role of negative religious coping

Also, the present study found that the effect of parenting stress on positive affect was mediated by negative religious coping. Suggesting that parenting stress had an indirect influence on positive affect through negative religious coping, such that higher parenting stress led to greater use of negative religious coping, which in turn was associated with lower positive affect. This finding is consistent with other studies which found negative religious coping to be associated with a decline in positive emotions, self-esteem, optimism, self-efficacy, and overall wellbeing mostly in terminally ill patients and in a general African American sample (Cole, 2005; Park et al., 2018; Pearce et al., 2006). Probably, some adolescent mothers who reported high stress might have reacted to this stress by perceiving that God did not love them, feeling abandoned by him, thinking he was punishing them for getting pregnant at a tender age, or maybe questioning his superpowers. All this is likely to result in decreased positive affect. Moreover, negative religious coping reappraisals such as perceived punishment from God, abandonment, spiritual discontentment, diminishing God's power, blaming the devil, and demonic reappraisals, seem to weigh down one's capabilities to use their strengths to stay above their challenges. Instead leaves them vulnerable to self-pity, blame, feelings of abandonment, shame, feeling incapable of being loved, feeling discontent, feeling worthless, and helpless, all resulting into lower positive affect, as also previously reported (Bjorck & Thurman, 2007; Cole, 2005; Pargament et al., 2011; Pearce et al., 2006). Important to note that even though these findings are consistent with previous findings, they are unique in that they reveal unique mediation pathways in which religious coping

affects the adolescent motherhood stress and mental health relationship from LMIC's perspective. Making them different from previous studies in which religious coping (positive and negative) mostly played direct roles in predicting mental health outcomes, in mostly terminally ill, or trauma victims in western societies. Of which most of the above cited studies assumed the unaccounted-for variance might have been caused by stress or other negative life events. Informing important theoretical, practical and policy implications.

The results also revealed that parenting stress through negative religious coping promoted increase in mental distress (higher depressive, anxiety, and stress-tension symptoms). This finding suggests that higher parenting stress led to greater use of negative religious coping, which in turn led to increased mental distress (higher depressive, anxiety, and stress-tension symptoms). The findings are supported by literature which argues that negative religious coping is maladaptive and acts as a risk factor for mental distress (Carpenter et al., 2012; Park et al., 2018), including other studies which document the negative effects of negative religious coping (Ano & Vasconcelles, 2005; Park et al., 2018), and those that have linked it to depressive symptoms (Abu-Raiya et al., 2016; Abu-Raiya et al., 2015; Bjorck & Thurman, 2007; Park et al., 2018; Pearce et al., 2006). It is possible that high parenting stress could have caused some adolescent mothers to question God's love, question his power, feel abandoned by God, or feel punished by God. And in turn were more likely to report increased mental distress such as increased depressive, and anxiety symptoms. Usually, during stressful situations or when faced with other negative life situations, people engage in negative religious coping when they believe that they have no control over the situation they are faced with or when the feel totally helpless. This has particularly been found to intensify poor mental health (Bjorck & Thurman, 2007; Carpenter et al., 2012; Pargament et al., 1998). These findings

underline the risk factor role that negative religious coping plays in the parenting stress-mental health relationship. Future research could therefore devise interventions to deliberately discourage negative religious coping.

Overall, it was observed that the direct effects of parenting stress on both positive affect and mental distress became non-significant after all mediators were added to the model signifying that the mediators (positive and negative religious coping, and rumination) are mediums through which parenting stress affects mental health (positive affect, and mental distress). Confirming the study prediction that parenting stress influences the mental health of adolescent mothers through positive religious coping, negative religious coping, and rumination. Among the strengths of this study is that we examined positive and negative religious coping concurrently (alongside rumination) in one model and both accounted for unique variance in outcomes, and they did not seem to offset each other. However, even though both were positively associated with parenting stress, each showed strongest associations with expected outcome constructs, that is, positive religious coping was more strongly associated with measures of positive constructs, while negative religious coping was more strongly associated with measures of negative constructs.

Additionally, even though all three mediators were independent and significant mediators, negative religious coping accounted for a larger amount of variance on the mental health outcomes in the model than positive religious coping and rumination. Also, as consistent with other studies, negative religious coping more strongly predicted mental distress compared to positive affect, while positive religious coping more strongly predicted positive affect than mental distress (Ano & Vasconcelles, 2005; Park et al., 2018). Interestingly, a rare and unique finding was that parenting stress positively predicted positive religious coping. This was attributed to a possibility of high parenting

stress having triggered the adolescent mothers to turn to a higher power for help. This is because experiencing high parenting stress in the first place meant that the parenting demands must have exceeded available resources, hence the need to mobilise more help through religion and belief in the transcendence of a higher being. Notably important, the current findings highlight the protective role of positive religious coping in the mental health of adolescent mothers regardless of the magnitude of parenting stress, such that even amid increased parenting stress, the influence of positive religious coping on mental health remains vital. Thus, adolescent mothers with high parenting stress but engage in positive religious coping are more likely to be protected from mental distress symptoms (such as depressive and anxiety symptoms) compared to adolescent mothers with high parenting stress but engage in negative religious coping. As such, the findings underscore the need to promote positive religious coping and discourage negative religious coping. Therefore, future research could focus on interventions aimed at deliberately increasing the use of positive religious coping and reducing the use of negative religious coping especially in LMIC's where poverty levels remain high.

6.8.4 Mediating role of rumination

As hypothesised in H3a, it was found that the effect of parenting stress on positive affect was mediated by rumination. Suggesting that parenting stress had an indirect influence on positive affect, through rumination, such that higher parenting stress led to higher rumination, which in turn was associated with low positive affect. This finding is consistent with studies which found self-rumination to be a mediator in the relationship between self-reflection and happiness (Elliott & Coker, 2008). Higher self-reflection led to higher levels of self-rumination which in turn led to lower levels of happiness (Elliott & Coker, 2008). The current findings are also consistent with literature which linked rumination in stressful situations to lower positive affect (positive emotions), and high

negative affect (Nolen-Hoeksema et al., 2008). The current findings suggest that parenting stress and rumination are detrimental in fostering positive affect. Highly stressed adolescent mothers have a difficult time staying away from the rumination process which in turn is detrimental to their positive affect outcomes. This could be because adolescent mothers (especially in the current sample with majority coming from low SES) are likely to make unhealthy insinuations coupled with more worry and despair when faced with highly stressful parenting situations (considering most came from difficult circumstances) which in turn are likely to result in low positive effect (low joy, low contentment) and more negative emotions (anger, guilt, shame, sadness) (Nolen-Hoeksema et al., 2008).

Furthermore, as hypothesized in H3b, the present study found that the effect of parenting stress on mental distress was mediated by rumination. Parenting stress had an indirect influence on mental distress, through rumination, such that higher parenting stress led to higher rumination, which in turn was associated with higher mental distress. These findings are consistent with literature which has linked rumination in stressful situations to mental distress such as depression (Robinson & Alloy, 2003). The current findings are also consistent with literature which argues that rumination is maladaptive and a risk factor for increased mental distress like depression, anxiety, and negative mood (Miranda & Nolen-Hoeksema, 2007; Nolen-Hoeksema et al., 2008). Also, that people who make unhealthy insinuations when faced with stressful situations are more likely to develop depression than individuals with more healthy cognitions (Spasojevic et al., 2004). The current findings suggest that adolescent mothers with high parenting stress may tend to ruminate more on their situation which in turn would lead to high mental distress. This is because a highly stressed adolescent mother from a disadvantaged home

may continuously and excessively think and despair about their circumstances which would then lead to excessive negative outcomes like heightened depressive or anxiety symptoms. It could be that parenting stress encourages rumination and inhibits abilities to draw upon adaptive ways of dealing with the stress such as engaging in problem-focused coping, and so lead to high mental distress. Parenting stress reinforces rumination which then breeds poor mental health outcomes. It appears rumination does not solve the problem or to help change or make the symptoms of parenting stress go away (as the one engaging in it would usually think), but rather, it keeps the victim fixated on the problem and feelings, without any necessary steps to engage towards a course of action leading to more negative thoughts (Nolen-Hoeksema, 1991; Nolen-Hoeksema et al., 2008).

These findings therefore have serious implications for the future. Efforts and future interventions should focus on reducing rumination in adolescent mothers, especially those from disadvantaged backgrounds in LMICs. This is imperative as it has a promising chance of also mitigating the negative effects of higher levels of parenting stress on adolescent mothers' mental health outcomes. Moreover, preventing negative mental health outcomes in adolescent mothers would translate into promising futures for themselves, their infants, and families at large. Additionally, these findings are of great importance as they demonstrate the role of rumination in adolescent mothers' mental health outcomes from LMICs, considering adolescent mothers from poorer backgrounds have a greater chance of suffering from mental distress than their counterparts from wealthier backgrounds (Emery et al., 2008; Huang et al., 2014; Jaffee, 2002). Furthermore, the findings give urgency for future research to focus on devising interventions and ways of reducing rumination, parenting stress and mental distress.

6.8.5 Moderating role of resilience

Contrary to H4, resilience was not a significant moderator in any of the mediational

relationships involving rumination and negative religious coping. Hence, none of the moderation hypotheses involving resilience were supported by the current study despite resilience being significantly associated with parenting stress, negative religious coping, positive affect, depressive, anxiety, and stress-tension symptoms. These findings are in line with studies that found non-significant moderation effects of resilience in the relationship between life events and depressive symptoms in adult pregnant women (Kishore et al., 2018).

One probable reason for non-significant resilience moderation findings could be that adolescent mothers who are low on resilience might have been more likely to struggle with their religious standing in God, such that they probably questioned God's existence, such that it became difficult for negative religious coping to interact with resilience to form a moderating effect on negative religious coping - mental health outcomes relationship. In the same vein, similar weaknesses would have caused failure for resilience to form an interaction effect with parenting stress that could have a moderating effect on parenting stress - negative religious coping relationship. Alternatively, it could be that those who were less resilient did not engage in neither of the religious coping styles failing to form moderation effects. Another probable reason could be that adolescent mothers who were less resilient were more likely to be excessive ruminators such that it failed to interact with resilience to cause a moderating effect on rumination-mental health outcomes relationship. Similarly, this could have caused failure for resilience to form an interaction effect with parenting stress that could have a moderating effect on parenting stress-rumination relationship. Another plausible explanation could be that even though the role of resilience as a moderator was arrived at based on theoretical and empirical evidence (Lee et al., 2016), alternative theoretical and model explanations are possible. For instance, resilience could be a medium through which

parenting stress influences mental health outcomes of adolescent mothers like in other studies (Anyan & Hjemdal, 2016). It is possible that resilience can serve as a mediator, but that was not the focus of this study. The current study focused on the moderating effects of resilience. It is also possible that resilience can serve as a predictor, playing a more direct influence on mental health.

Future studies could therefore try to examine resilience in adolescent mothers in the alternative capacities mentioned. Also, non-significant resilience moderation effects could indicate that because it might not be emphasised much in this culture, there could be other strengths or prominent personal resources such as creativity, and self-esteem that could give significant moderating effects. Hence, these assumptions call for future studies to further investigate the role of resilience in adolescent mothers' parenting stress-mental health relationship, as this remains unclear in literature compared to the more established adult motherhood literature on resilience. Or better yet also examine other closely related concepts to resilience such as hope, optimism, self-esteem, and perseverance (Fredrickson, 2001; Luthans, Youssef, et al., 2007; Siu et al., 2021).

6.8.6 Moderating role of parental responsibility

As hypothesised in H5, findings partly supported this hypothesis when they revealed that the indirect effect of parenting stress on positive affect through rumination was moderated by parental responsibility. Suggesting that parental responsibility had significant conditional effects on this indirect relationship at low and medium levels, such that parenting stress was positively related to rumination, which in turn only predicted poorest positive affect in adolescent mothers who had low levels of parental responsibility. It was also revealed in this study that high levels of parental responsibility had the potential to bridge the gap between high ruminator adolescent mothers and low ruminators. This highlights the buffering role of parental responsibility which also

confirms its protective role even in adverse conditions, such as increased stress conditions. These findings are in line with literature that showed that parents with high internal locus of control which included a component of high internal parental responsibility, reported low psychological distress (Coleman & Karraker, 1998; Grolnick et al., 1997; Hassall et al., 2005). An explanation for our results could be that adolescent mothers who are high in parental responsibility tend to exhibit internal locus of control and tend to accept that they played a part in their situation and that they should make efforts to make amends. This could act as a driver for one to take a course of action and not worry or blame themselves, thereby reducing processes like rumination, which in turn have a bearing on wellbeing such as increasing positive emotions and reducing mental distress. Thus, high Parental responsibility seems to promote ability to engage in adaptive coping (Fredrickson, 2001; Hassall et al., 2005).

Another explanation could be that adolescent mothers may have been more responsible so as not to further strain their relationship with family members such as mothers. In this regard other studies have shown that parental responsibility has been linked to high perceived support just like parental efficacy, and in turn to high mental wellbeing and low distress (Hassall et al., 2005). Alternatively, adolescent mothers may have exhibited parental responsibility so as not to repeat falling pregnant and this might have also compelled them to resort to more responsible behaviour to show their families how remorseful they are for falling pregnant. Change of behaviour has in some instances been linked to more positive actions and more positive thoughts, in turn resulting into better mental health outcomes (Siu et al., 2021; Wagner & Ruch, 2015).

It is also possible that those receiving social support from the significant other or infant's father might have felt empowered and thus perceived a certain level of parental

responsibility because they were able to cater for the needs of the baby with their partner. It is plausible to suggest that this translates into lesser burden on their family and themselves, and likely to buffer adversity and maladaptive coping, in turn leading to better mental health. This finding is consistent with studies linking parental responsibility to high perceived support, and in turn to high mental wellbeing and low distress (Hassall et al., 2005).

Then an explanation for failure to moderate the indirect path from parenting stress to positive affect, and to mental distress through negative religiosity could be that adolescent mothers who are generally high in parental responsibility are also likely to engage in increased religious coping such as seeking God's love, care, forgiveness, and stronger connection, as mirrored by other studies (Pearce et al., 2006). So, those who used negative spiritual strategies might have also been low on parental responsibility hence an inverse effect is probable, such that those who were low in positive attributes were likely to struggle with the belief in God (Pearce et al., 2006). Therefore, the opposite seems plausible.

Accordingly, parental responsibility is crucial in buffering the effects of rumination on mental health outcomes. Its protective capabilities could be used to bridge mental health inequalities. Therefore, future research could focus on interventions aimed at deliberately increasing the use of parental responsibility. Teaching adolescent mothers the benefits of parental responsibility could help them uphold this important virtual which would then translate into better mental health.

6.8.7 Moderating role of social support

Contrary to H6, that social support would moderate the mediational relationships involving rumination, and negative religious coping, none of the moderated mediations hypothesized with social support were supported by the results. Findings of lack of social

support interactional effects were in line with literature indicating that some adolescent mothers may be low on social support in comparison to their older counterparts (Edwards et al., 2012; Logsdon et al., 2002; Maynard, 1996). Studies have cited among other reasons, conflictual relationships with family, mainly parents, precisely mothers (Edwards et al., 2012). The current findings here are not surprising seeing that social support was only associated with negative religious coping. One explanation for our findings could be derived from our demographics which show that about 22% had lost their fathers and about 7% had lost their mothers. This indicates that a few adolescents in this context were either double or single orphans or coming from single parent headed households or living with distant relatives who are not very supportive, raising questions about sufficient support. Hence, failure of the social support variable to form interaction effects. Further studies are welcome to examine the moderating role of social support in such home and family setup dynamics.

Another probable explanation for non-significant social support moderation could be that adolescent mothers may have other support systems apart from the ones that were captured in this study such as other members of the extended family or close neighbours, essentially having multiple sources of supports. These could be helping them meet parenting demands such as assistance with child provisions and care. This is probable considering that this sample is from a largely collective society in which living in extend family, or commune arrangements are common (Rocca et al., 2010). Moreover, it is possible they could also be exposed to other forms of social support such as those emanating from the community and religious context like church groups. However, this social support may not have been captured by the measures used here. Therefore, future research could further examine social support moderation effects among adolescent

mothers from such an LMIC context by using measures that could capture other types of social support.

Another explanation for the findings here is that the adolescent mothers may enjoy some support from friends, but it might not be compared to the support non-pregnant adolescent girls might get from their peers. This is because adolescent mothers are usually stigmatised against by their friends and might lack sufficient support from peers. An example can be drawn from the Zambian context in which even though the country currently has a 'go back to school' policy for parenting adolescents, they might not receive the same inclusivity benefits they did before they had a baby. Hence, future research could focus on interventions that advocate more inclusive activities for adolescent mothers to receive sufficient social support. This could involve sensitization programmes among others to teach other pupils in schools and communities at large to support these young mothers and give them the same support as before or even more.

Additionally, adolescent mothers are less likely to have a spouse or committed partner because they are still young as can be seen in this study in which majority were never married. They are also unlikely to receive support from the partner regardless, looking at the mean index when asked to rate their 'relationship with partner.' Hence, they are likely to have compromised social support (Logsdon et al., 2002). Future research could therefore endeavour to use measures that could capture partner social support regardless of whether married or not because it seemed those who were not married but had partners struggled to indicate the support they received especially if it was irregular and especially if the current partner was not really the father of the infant. Hence, future studies could investigate and endeavour to capture social support from the infant's father as well as from the infant's father's family and beyond, such as including the infant's paternal grandfather and grandmother, since studies have shown great benefits emanating

from social support from this context (Edwards et al., 2012). This would help capture all forms of support in case an adolescent mother has a partner who is different from the father of their infant.

6.9 Conclusions

Previous research has largely investigated the direct effects of parenting stress on adolescent mother's depression, mostly from wealthier country perspective. The current study investigated the psychological mechanisms underlying the relationship between parenting stress and mental health among adolescent mothers in Zambia. Particularly, the current study investigated whether the effects of parenting stress on adolescent mothers' mental health (positive affect, and mental distress) are mediated by religious coping (positive, and negative religious coping) and rumination, and whether these mediational relationships are moderated by resilience, parental responsibility, and social support. The findings revealed that the parenting stress-mental health (positive affect, and mental distress) relationship was mediated by positive religious coping, negative religious coping, and rumination. And that the rumination mediation path was moderated by parental responsibility. However, resilience and social support were not significant moderators.

The current study contributes and advances our understanding of the adolescent mothers' mental health discourse by demonstrating through moderated mediational relations that positive religious coping and parental responsibility are crucial factors in the effects of parenting stress on the mental health of adolescent mothers, especially those from LMICs regardless of increased adverse parenting stress conditions. Positive religious coping is crucial for adolescent mothers' mental health. The impact of parenting stress on adolescent mothers' mental health might be more damaging in the absence of the mediating effects of positive religious coping, and without parental responsibility

moderating the mediational effects of rumination on positive affect.

The current study emphasises that positive religious coping such as building a stronger relationship with God; seeking strength, love, and care in him; seeking help from him in dealing with anger; involving God when executing plans; asking forgiveness; and turning to religion to refrain from worries, coupled with parental responsibility, are important in promoting adolescent mother's mental health. Specifically, they are vital in increasing positive affect, and reducing mental distress. Thus, positive religious coping, and parental responsibility are protective resources which can be referred to as parenting stress threat absorber medium (mediator), and buffer (moderator), respectively.

Furthermore, the study demonstrates that rumination and negative religious coping on the other hand are maladaptive and risk factors in the parenting stress-mental health (positive affect, and mental distress) relationship. They are detrimental in the parenting stress - mental health (positive affect, and mental distress) relationship, and are associated with lower positive affect and higher mental distress. Parenting stress reinforces rumination which then breeds poor mental health outcomes. Rumination does not solve the problem or help change or make the symptoms of parenting stress go away, but rather, it keeps the victim fixated on the problem and feelings, without any necessary steps to engage towards a course of action leading to more negative thoughts. Additionally, high parenting stress caused some adolescent mothers to engage in negative religious coping by questioning God's love, his power, feeling abandoned or punished by him. And in turn reporting less positive affect, and increased mental distress such as increased depressive, and anxiety symptoms. Thus, rumination and negative religious coping are risk mediums (mediators) that should be discouraged.

The findings in this study therefore differ in part from studies on adolescent mothers done in more wealthier countries in that this study moved away from the typical

investigation of the direct effect of parenting stress on adolescent mother's depression, to investigating the pathways through which parenting stress affects the mental health of adolescent mothers using a moderated mediation model. The study has theoretical, practical and policy implications for health, educational, and community contexts. Efforts and future interventions should be aimed at deliberately increasing the use of positive religious coping, and parental responsibility. This is because of their protective mechanisms in the mental health of adolescent mothers regardless of the magnitude of parenting stress, such that even amid increased parenting stress, the influence of positive religious coping on mental health remains vital. And even in the presence of rumination, the buffering mechanisms of parental responsibility supersede the risks. Likewise, efforts and future interventions should focus on reducing rumination and negative religious coping in adolescent mothers, especially those from disadvantaged backgrounds in LMICs. This is because adolescent mothers from poorer backgrounds have a greater chance of suffering from mental distress than their counterparts from wealthier backgrounds. Moreover, promoting positive mental health outcomes while preventing negative mental health outcomes in adolescent mothers would translate into promising futures for themselves, their infants, families, communities, and nations at large.

The next section is a qualitative study that was conducted to triangulate the findings of the first two quantitative studies by examining adolescent mothers' in-depth lived experiences of parenting stress, coping mechanisms, and mental health. Overall, doing a qualitative study tends to make up for some weaknesses of the quantitative study.

CHAPTER 7: STUDY THREE - QUALITATIVE STUDY

7.1 Introduction

Chapter seven presents study three, a qualitative study that took a Phenomenological interpretative approach. A Phenomenological interpretative approach is a qualitative approach rooted in Philosophy and Psychology, where a researcher gives an account of the participants' individual lived experiences of a particular phenomenon through their lens (Creswell & Poth, 2016). This account provides a collective or broader picture of the lived experiences given by several individuals or participants according to how they experienced the phenomenon. The researcher learns of these lived accounts by typically interviewing participants who have experienced the phenomenon of interest. Therefore, interviews are the commonly used data collection method in this approach (Creswell, 2018; Leedy, 2001).

This chapter begins by presenting the rationale for this study, followed by the aim, then the methods, through to the findings and discussions, and lastly but not the least, the conclusion.

7.2 Rationale

First, to triangulate findings from the surveys above to better understand them. This is because quantitative studies due to their nature have limitations of failing to provide the true picture of a phenomenon. This study would therefore help to cross check, supplement, and provide explanations for the findings in the quantitative studies above.

Second, predominant focus on protective roles of resilience and social support in wealthier countries inspired this study to explore other resources that could be playing buffering and protective roles in the relationships between parenting stress and mental health in LMICs since the context differs from wealthier countries.

Third, the need to collect in-depth adolescent mothers' lived experiences of parenting stress, coping mechanisms, and mental health was another reason for this study. It would be informative to hear individual circumstances that influence parenting stress, coping mechanisms, and subsequent mental health outcomes (positive affect and mental distress). This knowledge would be useful in informing policy and programmes on how best to help the young mothers. It would also be useful in devising tailor made programmes that would help prevent and/or manage parenting stress to avoid adverse outcomes.

Fourth, scarce literature in LMICs makes it difficult to devise comprehensive conclusions about this discourse globally. Thus, incorporating qualitative findings from this context would help give a clearer picture of this discourse.

7.3 Aim

This study set out to triangulate findings from the two quantitative surveys above by examining adolescent mothers' lived experiences of parenting stress, coping mechanisms, and mental health. Specifically, to examine (1) sources of parenting stress; (2) effects of parenting stress on mental health (positive affect and mental distress); and (3) coping mechanisms (styles and resources) employed.

7.4 Methods

This section presents and explains the methodology used in this study. It begins by explaining the design of the study, followed by participants and sampling procedures, then goes on to discuss data collection measures. This is then followed by ethical considerations, and lastly, data analysis.

7.4.1 Design

The current study was qualitative and employed the phenomenological interpretive study design. Phenomenological interpretative design is a qualitative approach that focuses on participants' subjective lived narratives of a particular phenomenon (Leary, 2014). The rationale behind this design was to explore personal views and experiences of adolescent mothers' parenting stress and how it affects their mental health, and the coping mechanisms used. Parenting stress, mental health, and coping strategies can be complex in adolescent mothers. Thus, the design above was ideal for understanding their parenting stress and its effects on their mental health and how they cope with it.

7.4.2 Participants

A total of 25 first time adolescent mothers aged between 16 and 19 years old were recruited for this qualitative study. The inclusion criteria were that the young mothers be parenting for the first time and be aged between 13 and 19 years, with infants 0 to 36 months old. The participants were primarily recruited using convenience sampling supplemented with snowball sampling. Convenience sampling is a non-probability sampling method that recruits easy-to-find target participants (Leary, 2014). Similarly, snowball sampling is also a non-probability sampling approach in which initial participants refer the researcher to potential participants possessing similar traits or undergoing similar phenomena (Leedy & Ormrod, 2015). In this case, adolescent mothers were conveniently sampled in hospitals /clinics as they attended postnatal and under-five-clinic services (infant vaccination/ regular check-ups). These participants later referred me to other adolescent mothers in their respective communities.

7.4.3 Ethics

Ethical clearance protocols are the same as explained in chapter 5 above. However,

in addition to the written consent obtained as explained in chapter 5, I also obtained verbal consent for the audio recording (since interviews were audio recorded) from the participants to ensure they were comfortable being recorded. The reason for recording was also explained. They were also reminded of their freedom to withdraw at any point and not to mention any identification details when interviews had commenced. So, these were obtained before the recording began.

Also, in case any of the participants needed counseling after the interview or the near future, provision for counseling services were made in the hospitals/clinics within their communities and with private practitioners. This agreement was welcomed by the hospitals and clinics involved to encourage young mothers to access various services at these centres. Further details are provided in the next section below.

7.4.4 Procedure

Participants' first point of recruitment for this study was in the hospital/clinics when the adolescent mothers attended postnatal services or brought in their babies for vaccinations or routine under-five check-ups. The recruited participants later referred me to other eligible adolescent mothers. At our first point of contact, I screened all the young mothers for eligibility. Screening and subsequent recruitment was made possible with the help of the health care workers. Adolescent mothers who met the criteria and were 18 or 19 years old were given details of the study and told its purpose so they could make an informed decision of whether to participate or not. Adolescent mothers below the age of 18 were given the details and purpose of the study together with their guardians. This was so they could make an informed decision together of whether to participate in the research or not. And whether the guardian had agreed to let their child participate, we still got assent from the would-be participant. Afterward, I asked the recruited eligible participants for permission to conduct the interviews from their homes. I made appointments for this

to be done at their convenient dates and times as these interviews required a comfortable and quiet environment and could not be conducted in the hospitals. For this purpose, I collected contact details and addresses and assured participants of confidentiality and that I would only use the details for the intended research purpose such as making and rescheduling appointments.

Before the interviews, I took each participant through the informed consent procedures by explaining the purpose of the study and giving all the necessary details. I did this by providing them a copy of the information sheet and informed consent form in their preferred language (English or CiNyanja) and then walking them through it. After that, I allowed the participants to ask questions or seek clarification on any issues concerning the research. If everything was clear, the participants were asked to sign on two consent forms that I the interviewer signed. Participants below 18 years old did this exercise with their parents/guardians. The guardian signed the consent form while the participant signed the assent form. Finally, the participants and the interviewer both retained a copy.

All interviews began by getting additional verbal consent for the audio recording to ensure the participant was comfortable being recorded. I then advised the participant to desist from mentioning their identification details anywhere in the interview for confidentiality. I began by asking for demographic information, followed by background information, to create rapport and make them as comfortable as possible to express themselves openly and in-depth. I later asked the actual research questions following that. At the end of each interview, I allowed the participant to review their remarks and modify or remove uncomfortable portions. I also gave them a chance to ask questions and reminded them to contact me if queries emerged using my contact details on the informed consent form. Afterward, I briefed them about how the findings would be used and

disseminated, and I thanked them for their participation and offered refreshments (Mineral water and local maize drink).

7.4.5 Data collection

Employing the phenomenological interpretive design, the current study used unstructured in-depth interviews to collect adolescent mothers' lived experiences, views, and beliefs regarding parenting stress, coping, and mental health. The interviews were audio-recorded using a digital audio recorder. The interviews allowed for the participants to express their opinions, beliefs, and experiences of parenting stress, coping, and mental health freely and openly. More so, the unstructured interviews elicited rich, in-depth, varied responses embedded in specific cultural, socioeconomic status, and religious contextual backgrounds. In addition, the emphasis on non-judgment and confidentiality encouraged adolescent mothers to share their lived experiences openly and in their own words.

The interview guide comprised demographic information, an introductory statement, a verbal consent question (in addition to the separate written consent form), background information, actual research questions, and concluding remarks. The demographic questions included age, highest education class level, marital status, number of children, infant's age and gender, religion, and guardian. The research questions included questions such as, "Could you share with me your understanding of parenting stress?" or "In your view, what effect does parenting stress have on the mental health of adolescent mothers?" or "How do you cope with parenting stress?" or "Share with me if any, your personal attributes that help you deal with parenting stress" and if you have, do they help you deal with your parenting stress?

Additionally, I also used probing statements and questions when necessary to stimulate detailed responses and for clarification purposes. The interviews were

conducted either in English, Nyanja, or Bemba (native languages) and were all audio recorded. Each interview lasted between 35 minutes and 1 hour. Afterward, I transcribed all interviews verbatim. Important to note that the ones conducted in the native Nyanja or Bemba were translated into English and afterward back translated to either Nyanja or Bemba to ensure respondents' meaning in the scripts were not lost in translation.

7.4.6 Data Analysis

All the audio-recorded interview data were transcribed verbatim. However, important to note that all the interviews that were conducted in the native Nyanja or Bemba were first translated into English and afterward back translated to either Nyanja or Bemba to ensure respondents' meaning in the scripts were not lost in translation. After all the data were transcribed and translated (if necessary), I conducted a second check through each individual recorded interview and its corresponding transcript to make sure all the conversations in the recording were captured and that all the translated transcripts reflected the interviewees communicated message. This highlighted both general and specific crucial information emerging.

Finalized transcripts were then analyzed using thematic content data analysis. Thematic content analysis was done by isolating the descriptions and then scrutinizing the underlying meaning emerging. All this was done with the help of NVivo 12 plus. First, NVivo 12 plus assisted me in organizing my transcripts and then classifying the responses according to the sections/research questions in the interview guide. It helped to sort the data into respective categories (by grouping all participants' responses about a particular question into nodes (sections) and further into smaller units). After this was done, I started the thematic content analysis by repeatedly reading the transcriptions to get an overall impression and specific important information embedded in the text (Creswell, 2018). This also involved identifying relevant statements in relation to the

subject matter (Leary, 2014). Afterward, I condensed the text, and created code labels to summarize/highlight content and meaning emerging from the text. Then I grouped the emerging codes with similar meaning into categories as I continued reading the text repeatedly to understand the underlying meaning. The final step involved reflecting on the findings by considering the aims and the questions in the interview guide and then finalizing the themes that had emerged (Leary, 2014). A picture of the NVivo analysis summary is provided in appendix 11.

Having outlined the methodology of this study, the next section presents findings and discussions of the study.

7.5 Findings and Discussion

7.5.1 Introduction

This section presents findings and discussions of the qualitative phenomenological interpretive study. This section differs from the finding's sections in the two studies above. This is because it has combined findings and discussions, a widespread practice in qualitative studies, to avoid repetition. The aim in section 7.3 guided my presentation of findings in this section. Thus, this section first presents findings and discussions of the adolescent mothers' family backgrounds. Second, findings about parenting stress of adolescent mothers. Third, effects of parenting stress on the mental health of adolescent mothers. Fourth, coping strategies of adolescent mothers, and lastly, conclusions of this section. Important to note that all names used to represent participants in this study are not real but pseudonyms. Also, some totals of the themes may not tally with the number of participants as some gave more than one response to the questions. Thus, the next section below presents the sociodemographic characteristics of the participants, followed by family background.

7.5.2 Sociodemographic characteristics of the qualitative sample

Table 14 below indicates the demographic characteristics of the qualitative sample. The sample included all female adolescents (N = 25) aged between 16 – 19 years (M = 18.32, SD = 0.90). Among the participants sampled, 60% had a highest level of education of junior secondary school, while 28% had a highest level of education of senior secondary school, with 12% having a highest level of education of primary school. Majority (92%) were never married while 8% were married. All were Christians by religion. Their infants ages ranged from 1 week to 12 months (M = 7.96) with female infants accounting for 76%. About 28% lived with a single parent, 44% lived with both

parents, 8% lived with grandparents, 12% lived with family relatives, while another 8% lived with a partner.

Table 14 Sociodemographic Characteristics of Participants in the Qualitative study (*N* = 25)

Characteristics	*M*	*SD*	*N* (%)
Gender			
All female			25(100)
Age			
16 – 19	18.32	0.90	
16			2(8)
17			1(4)
18			8(32)
19			14(56)
Education (Highest level)			
Primary School			3(12)
Junior Secondary			15(60)
Senior Secondary			7(28)
Marital Status			
Never Married			23(92)
Married			2(8)
Religion			
Christian			25(100)
Infant Age			
1 week – 12 months	7.96	3.43	
Infant Gender			
Male			6(24)
Female			19(76)
Family Arrangement			
Single parent			7(28)
Both parents			11(44)
Grandparent(s)			2(8)
Family relatives			3(12)
Partner			2(8)

Note. M = Mean, *SD* = Standard Deviation, *N* = Number of participants, *%* = Percentage

7.5.3 Family Background of respondents

Background plays a crucial role in the mental health of adolescent mothers. This is because it shapes ones thinking, aspirations, problem-solving strategies, access to resources and many more. Evidence continues to show that adolescent mothers coming from disadvantaged backgrounds were more likely than their counterparts coming from well-to-do backgrounds to experience poorer mental health (Goodman & Brand, 2009).

For instance, a study conducted in the United States among European, African, and Latin American adolescent mothers showed that African and Latin Americans were mostly from poorer backgrounds. They were also the most affected by adversity and showed higher levels of distress compared to their European counterparts (Huang et al., 2014).

Therefore, it was important for this study to capture the background of the participants to appreciate their context and better understand their circumstances. Thus, two themes emerged under family background, and these were low SES background, and middle SES background. Majority of the participants (16) indicated coming from low SES background, while 9 indicated coming from middle SES background. For instance, among those who indicated low SES background, one participant, 18-year-old Carol (pseudo name) said:

I come from a broken home my parents divorced since 2005. From then I have been kept by my mother and there was no support from my father. It is just my mother that has been making efforts and even when I had my baby, it is my mother that has been supporting me since the father to my baby is also going to school and we are in the same grade. So I just live with my mother that is all (Carol, participant 19).

Another participant, 19-year-old Womba indicated:

It was very difficult…I have passed through a lot of different things such that I cannot explain them all. I grew up with my father as my mother died a long time ago. When I was growing up, we were just suffering throughout (Womba, participant 8).

A critical look at the verbatim narratives of those who indicated low SES background show several sub-themes. Majority indicated coming from a single parent headed household caused by either separation, divorce, or death of a parent. While only one out of the 16 from low SES background came from a home with both parents. This

shows that single parent headed households were prone to poverty and that poverty is a risk factor for teenage pregnancy/parenting. This is consistent with other findings that show that adolescent girls coming from disadvantaged backgrounds are more at risk of teenage pregnancy/parenting (Jahromi et al., 2012). One possible explanation for current findings could be that these adolescents lack supervision, lack necessary basic needs, and so fall into wrong vices to make ends meet hence fall pregnant at a tender age. Lack of supervision in most homes could be because of long hours of work by parents to make ends meet. And because it's a single parent household, when that parent is out looking for means to take of the family, children are left alone to their own vices, in the process make wrong decision. Also, cultural aspects which consider sex education from parents to their adolescents as taboo, leaves adolescents without safe sex education which in turn leads to unplanned pregnancies.

Another explanation for adolescent motherhood could be lack of access to sexual reproductive health information. This is because even though sexual reproductive health services are available at no cost in all public health facilities, adolescents seem to shy away from accessing these services partly because they are not youth friendly. Thus, even though health facilities assure confidentiality, adolescents seem reluctant to access these services. This finding is in line with a number of studies that show that majority of adolescent mothers are likely to come from low SES households and mostly lack access to basic sexual reproductive health services (Jahromi et al., 2012). Having given a brief background of the adolescent mothers in this study, the next section presents findings and discussions of the adolescent mothers' parenting stress.

7.5.4 Parenting Stress

This section presents findings and discussions for adolescent mothers' parenting stress. Firstly, I present findings and discussions for adolescent mothers' understanding of parenting stress. Secondly, sources of their parenting stress. Thirdly, their perceived parenting stress on a scale 1-10.

7.5.4.1 Adolescent mothers' understanding of parenting stress

When asked about their understanding of parenting stress, several themes emerged. They included rumination (having a lot on one's mind) (14), being tired (12), experiences of a single mother (9), stress did not exist because of acceptance (6), feeling helpless (4), burden to care for the baby (4), bothers your heart (4), unexplainable, l do not experience it directly (3), not wanting to be a mother (1), multitasking (1), lack of alone time (1), lack of child spacing (1), raising children who are difficult (1). *Important to note that the responses might not tally with number of participants as some gave more than one response. Also, themes might overlap.*

From above, it can be observed that 'rumination' was the most popular theme with a frequency of 14 respondents. In narrating her understanding of parenting stress, 19-year-old Dora said:

The way I am, a mother when I am still young, and the father ran away so I think about a lot of things. I tend to think about the child needing soap and when I start thinking of that, I usually stress to an extent of feeling sick, and headache and I end up crying (Dora, participant 11).

Another respondent, 19-year-old Violet recounted:

I can say parenting stress is the situation your child is going through and what is giving you stress. What you are thinking about mostly and your thoughts about your child. That is what I can say is parenting stress (Violet, participant 16).

From the number of respondents who said stress involved thinking a lot, and from the above quoted narratives, there was an indication that majority of the adolescent mothers had a similar understanding of the term parenting stress. Most of them suggested that parenting stress was having a lot of thoughts (rumination) which emanated from a myriad of factors such as young age, first-time parenting, single parenting, financial instability/burden, disruption with school, among others. Additionally, they cited tough experiences and overwhelming responsibilities that come with parenting which made them feel like they did not have enough capacity to cope. Among these were responsibilities such as catering for the needs of the baby, caring for the baby, lack of social support (lack of help when it comes to caring for the baby). These findings are in line with literature that define parenting stress as stress that arises when demands associated with the parenting role exceed available resources (Emery et al., 2008; Hayes & Watson, 2013).

With regards 'being tired' the second most popular theme with a frequency of 12, parenting stress according to half of the participants was a mental state of 'being tired' from taking care of the child alone, without help from anyone (without social support). They cited among several reasons such as inexperience, numerous demands like cooking, feeding, washing, clothing, caring for the baby, dealing with a difficult baby, taking the baby to the hospital when ill, not enough time for schoolwork, and lack of free time. For instance, 18-year-old Tamara narrated:

Being stressed as a mother is about the ways of taking care of the child, feeding the child, clothing the child, those are the things that are difficult for the child that I see as tiring and stressing (Tamara, participant 21).

Another respondent, 19-year-old Towela reported that:

I think I would say it as being constantly tired like that, you find that you have no time to look after yourself or care for yourself. Then even time to like, like those others who are schooling, maybe they find that they do not have any time to touch their books so they can study, that is how I understand parenting stress (Towela, participant 4).

The findings above show that some adolescent mothers understood parenting stress as being tired because of pressures of being a young mother. These findings are in line with many studies that argue that adolescent mothers by virtual of being young, inexperienced and in most cases single parents, are likely to experience heightened general stress on average (Hans & Thullen, 2009), high parenting stress (Emery et al., 2008) and financial related stress (Knitzer & Perry, 2009).

7.5.4.2 Views on sources of parenting stress or how it comes about

When asked about their views of how parenting stress comes about, several themes emerged. They included lack of social support/provision for the baby (18), shortage of necessary baby requirements (14), money constraints/financial problems (12), hunger/shortage of food for the baby (10), desertion by partner/father of the child (8), being a single parent (8) lack of care (8), difficult/troublesome child (5), sick child (4), lack of a helping hand/social support (3), bad parenting (1), feelings of regret (1), talking is tiring (1), do not know (1), and no stress (1). *Important to note that the responses might*

not tally with number of participants as some gave more than one response. Also, themes may overlap.

With regards to 'lack of social support or provision for the baby,' majority of the participants (18) complained that the infant's father was not supportive in providing for the baby and that this was one of the major reasons for stress. One young mother said, *"you are raising the child by yourself with no support, you are the mother and father to your child"* (18-year-old Choolwe, participant 17). Another young mother said, *"maybe the father does not support…and the child troubles you more, then you will think through and stress"* (18-year-old Chongo, participant 20). Further, other participants also narrated about run-away 'baby daddies,' absentee fathers or fathers that seldom provided for their infants, leaving the young mothers to fend for their small babies. For instance, in one interview with the first participant, 19-year-old Mwansa, narrated in her own words that:

I think it happens when there is not so much care, like the way the baby's father acts, the way I earlier said I feel like he is not supporting me in providing for the baby, sometimes he does not give the baby support, it gives me stress. That is the only way he troubles me (Mwansa, participant 1).

Another participant, 19-year-old Dora recounted:

The way I am, a mother when I am still young, and the father ran away so I think about a lot of things. I tend to think about the child needing soap and when I start thinking of that, I usually stress to an extent of feeling sick and headache and I end up crying (Dora, participant 11).

From the accounts given above as well as the number of participants who said that lack of social support gave them stress, it appears that lack of social support especially

from the father of the baby took a serious toll on the adolescent mothers. It gave them immense pressure leading to parenting stress as they had to fend for their babies on their own. Adolescent mothers are so stressed seeing that they are young, unprepared, inexperienced and in most cases single parents. From the narratives, it was also clear that many of them were unmarried, single with no partner. Furthermore, most of them reported that the father of the baby had either ran away, denied responsibility of the baby, or was in the baby's life but seldomly provided. Leaving them to fend for the baby on their own. These findings are in line with studies that found that adolescent mothers are likely to experience heightened parenting stress on average than their older counterparts because they are young, inexperienced and socio-economically constrained (Emery et al., 2008; Hans & Thullen, 2009; Knitzer & Perry, 2009). Furthermore, most of them are coming from disadvantaged backgrounds where parents are usually constrained to support adequately as they have several other children to fend for (Jahromi et al., 2012).

With regards to 'shortage of baby requirements' the second common theme, mothers narrated having little to nothing to offer their baby gave them a lot of stress. Important to note that [*this theme might seem like the earlier one but some participants who gave this response did receive child support, except it was inadequate]*. Therefore, the codes that emerged under this theme revealed that parenting stress stems from numerous babies' needs that were difficult to meet by the young mothers alone, and for some even when they had support, it was inconsistent. The codes included lack of washing soap, shortage of baby food, shortage of baby clothes among others. They recounted failure to meet these and other needs as the cause of their stress. For instance, 18-year-old Tamara said:

Being stressed as a mother is about the ways of taking care of the child, feeding the child, clothing the child, those are the things that are difficult for the child that I see. So if you do not have it is a problem (Tamara, participant 17).

Another respondent, 19-year-old Towela recounted:

Mmmm things that bring thoughts, having a lot to think about, mmm like what is my baby going to eat, what will I buy for him, what does he need as at now, or if you do not have money, you ask yourself, just where am I going to get money from? So that I buy my baby such things (Towela, participant 4)

Another respondent 19-year-old Ingutu said:

A lot of things are needed, like washing every day then sometimes you find that there is no soap then the clothes will stay just like that until you find soap that is when you will wash. Then even food is difficult at home (Ingutu, participant 7).

The quoted narratives above indicate challenges by the young mothers to provide for their babies' needs on their own as majority were not married and the men responsible for their babies were likely to have denied, ran away, or seldomly provided baby support. This finding is in line with studies that show that adolescent mothers are likely to be underprivileged, parent alone with no husband nor partner, and likely to have deficient social support (Logsdon et al., 2002; Maynard, 2018).

With regards money/financial constraints, the third most common theme that emerged, majority of adolescent mothers mentioned that they experienced this. It was because they were young, unemployed, single, lacked social support, they were financially constrained, leading to parenting stress. For example, 18-year-old Inonge said *"maybe the one that you had a child with does not support you, that is what makes you*

have parenting stress." Others reported that failure to afford baby needs due to limited money and support was incredibly stressful. For instance, 18-year-old Carol said, *"like the things she wants also bring stress when you cannot afford to give her, and you become stressed especially if you only have one side where you seek help from that is also stressful."* Others cited that because they were school going children coming from poor backgrounds which for some were single parent headed homes, they failed to support their baby. 18-year-old Lushomo narrated that *"I fail to support my child because I spend most of the time at school and then my mother also does not work."*

Other young mothers said they failed to support their babies because of money constraints, as they could not go looking for a job because there was no one to look after their baby. For instance, 19-year-old Kalumbu said *"…you wish to find something to do but then there is no one you could leave the child with so that you can find some money to buy her things and all that."* Others said that being a single mother at a young age with no source of income, caused a lot of parenting stress to a point of serious distress and contemplation of self-harm. For instance, one recounted that stress that came with being a single adolescent parent was suicidal to some adolescent mothers. She said *"you will see the child at the neighbour has been bought for clothes and they tell you about it. Then you will have thoughts of, why don't I buy my child such things? Why did the father run away from her? That is why a mother's heart hurt and become thoughtful and reach a point where you say I will kill myself"* (18-year-old Lilly, participant 24).

The above narratives show that money constraints were among the major reasons why parenting stress came about. These findings are in line with studies that show that adolescent mothers are likely to face financial constraints because they are still young, without careers or jobs and likely to be without a partner (Maynard, 2018). Also,

adolescent mothers are likely to have a bad relationship with their parents or guardians because of the shame brought on the family and the extra burden caused (Edwards et al., 2012).

From the themes highlighted above and the quoted narratives, parenting stress was brought about by a myriad of factors with lack of social support, shortage of necessary baby requirements, and money constraints being dominant factors. Although the themes were stand alone, they were similar, overlapping, and interrelated in many ways. This implies that even though the themes were independent, they sometimes led to other themes, while some themes were co-existing with others. They were independent in the sense that, for example, a single mother whose baby was denied by the father may have lacked social support, therefore, faced shortage of baby requirements. While another participant would have not lacked support, yet still had a shortage of baby requirements because the support was insufficient. Thus 'lack of support' and 'shortage of baby requirements' were independent themes. They were interrelated in that money constraints were linked to shortage of baby requirements. For instance, if a single mother and their only guardian were both unemployed, it was likely they faced money constraints which probably were linked to shortage of baby requirements.

This means that these factors may stand alone yet be interrelated. Implying that these factors influenced each other to cause extra burden on the young mother. These findings are in line with other studies that reported that adolescent mothers were likely to be more stressed with their parenting role compared to adult mothers. This was because they were likely to be young, less educated, unmarried, inexperienced, unemployed, and likely to have conflictual relationships with their parents, leading to socio-economic challenges

(Goodman & Brand, 2009; Hans & Thullen, 2009; Leadbeater, 1999; Maynard, 2018; Spencer et al., 2002)

7.5.4.2 Perceived parenting stress on a scale of 1-10

When asked whether they had experienced parenting stress and to rate it on a scale of 1-10, with 1 representing low stress and 10 representing high stress, and give a reason for their answer (high, moderate, or low), they all agreed to having experienced parenting stress. All twenty-five participants admitted to experiencing parenting stress and five themes emerged. They were as follows: High parenting stress – 10/10 (7), high parenting stress – 8/10 (1), high parenting stress – 7/10 (1), moderate stress – 5/10 (11), low parenting stress – 2/10 (1), and low parenting stress 1/10 (4).

With regards high parenting stress reported at 10/10, the results revealed that a considerable number of participants (7) reported that they were very stressed. Majority cited lack of social support especially from the father of the baby to meet the baby's needs. This seemed to lead to insurmountable pressures and stress which some described as too high leading to suicidal thoughts of taking one's life, as well as that of the baby. For instance, 19-year-old Dora narrated:

I say 10 because the father ran away so I am the one that is there. The thoughts never finish because the child has new needs in a day, and she will need something, yet I do not even have a coin (Dora, participant 11).

Another participant 18-year-old Matildah narrated:

10/10. I get very stressed. I have a lot of thoughts. I think of bad things sometimes like I can take drugs and give the child I have the medicine because this child makes me suffer (Matildah, participant 18).

These findings suggest that a good fraction of young mothers were very stressed, and this might have been because of their new role and the many pressures it came with. For many it would have also been because of the limited social support they got. Many were left to fend for their babies on their own because the father to the child denied responsibility or if they accepted responsibility, then they provided very little support. None or a little support from the fathers would have been due to young age, unemployment (could still be in school), low SES background, coming from a big family among others. These findings are consistent with studies that show that adolescent mothers are likely to experience high parenting stress because of their young age (Hans & Thullen, 2009), inexperience (Maynard, 2018), likely to be financially unstable because they are still in school with no career or job yet (Goodman & Brand, 2009; Knitzer & Perry, 2009; Leadbeater, 1999), and most of them are likely to come from disadvantaged backgrounds where their parents are struggling financially to make ends meet for their big families (Jahromi et al., 2012; Logsdon et al., 2002). Unplanned babies could be added pressure on the already struggling household (Singh & Darroch, 2000).

With regards moderate stress captioned at 5/10, results revealed that nearly half of the participants reported to be moderately stressed. Some of the codes emerging out of this were that the young mothers chose not to dwell so much on the stress no matter how intense it was because they thought it would not yield anything instead being strong about the situation would help better. For instance, 18-year-old Choolwe narrated that:

I can pick five (5) because even if I stress so much, I do think that now if I stress so much, there is nothing I am going to achieve so it is better I just let it go and do something to be strong (Choolwe, participant 18).

Another code that came out was that they admitted to stress but pointed out that it was not very high because they had social support. For instance, 18-year-old Tamara narrated that,

I say 5 Because I was going through a lot but still, I had people that were helping me. So, I was not suffering much (Tamara, participant 21).

The findings suggest that most adolescent mothers admitted to being stressed and that this stress was intense, but they were optimistic and refused to give up. This is in line with a fraction of studies that found that adolescents with positive attributes will pull through no matter the troubles they go through (Fergus et al., 2005; Masten & Obradović, 2006). It was a situation where they did not let it get to them so they could concentrate on figuring out how they could take care of their baby. This is in line with studies that show that individuals with positive attributes will engage in behaviours that promote emotional well-being (DeRosier et al., 2013; Gupta & Kumar, 2015; Masten et al., 1999; Sood et al., 2013). For some, it may have been because of the social support they received that cushioned stress and its effects. This is consistent with findings that argue that adolescent mothers who had social support were less stressed compared to those who did not have (Hurd & Zimmerman, 2010b). This is because social support buffers the effects of stress on mental health (Chao, 2011).

With regards low stress, the results emerging showed that the participants who reported low stress cited for instance, the teachings by the elders to lessen the burden on their new role. For instance, 19 -year-old Womba narrated:

I can choose number 2 because if you think of what people from home used to teach you, even if you have a child, it is not very difficult on how to do things and you will not have

so much stress since you know how to massage a baby or handle a baby. So, you will not stress a lot (Womba, participant 8).

While others cited social support from the father of the baby. For instance, 19-year-old-Mwisa narrated that, *"one (1), no, I do not have. Because things are normal. I do not have stress because there is nothing I get troubled about and the man does not give me pressure even at home they do not give me pressure so I am okay"* (Mwisa, participant 5). Others cited that they avoided stress to avoid getting into wrong vices and end up leaving the child suffering in the end. For instance, 17-year-old Luyando narrated:

I can choose number one because I do not stress very much, I do not think very much; through thinking you can find that you end up doing wrong things. You even leave your child suffering, and you die. So, stress is not good sometimes (Luyando, participant 22).

Other said that they avoided stress because it would not yield anything positive, so they decided not to let it get to them. For instance, 19 -year-old Mary reported that, *"I can choose one because again if you stay too stressed it is not good so like now, I just have less stress"* (Mary, participant 18).

These findings suggest that young mothers with low parenting stress had several factors that were cushioning them from the heightened stress such that they could not feel it. This is in line with studies which show that even though parenting stress is inevitable, they will not feel it that much because of the social support and help with the provision of baby needs (Hurd & Zimmerman, 2010b), as well as their parental responsibility towards their child (Perälä-Littunen & Böök, 2012). This also resonates with Lazarus and Folkman's theory which states that during secondary appraisal, one will know whether they have the resources to deal with the threat of not and if they do they will appraise it as non-threatening (Lazarus & Folkman, 1984). Thus, if one has pressures of raising a

baby, their resources (personal or social) will help them appraisal their parental challenges as less stressful.

Having looked at parenting stress in this section, the next section discuses effects of parenting stress on the mental health of adolescent mothers. And since the majority indicated that they experienced parenting stress, it was important to hear how it affected their mental health.

7.5.5 Effects of parenting stress on mental health

Literature continues to link parenting stress in adolescent mothers to negative mental health outcomes (Huang et al., 2014; Patricia et al., 2017; Turkyilmaz & Hesapcioglu, 2019; Venkatesh et al., 2014; Zeiders et al., 2015). This section therefore gives an account of the effects of parenting stress on the mental health of adolescent mothers. I begin by highlighting adolescent mothers' views of the effects of parenting stress on the mental health of adolescent mothers. Then I give an account of whether parenting stress has ever affected their mental health. I then address whether the parenting role has ever put a strain on the young mothers in any way. Followed by examining whether the parenting role does stimulate any emotions in the adolescent mothers. After which I examine whether the parenting role does stimulate any thoughts in them. Lastly but not the least, I examine whether the parenting role does stimulate any behaviours in them.

7.5.5.1 Adolescent mothers' views of the effects of parenting stress on the mental health of adolescent mothers

When asked about their views concerning the effects of parenting stress on the mental health of adolescent mothers, several themes emerged. These included

rumination/thinking too much (22), ill mental health (18), headache (14), poor physical health/sick often (9), weight loss (7), dizziness (6), blood pressure (5), disruptions to normal routines like going to school (5), feeling abandoned, forsaken, and unloved by God (5), feelings of regret (4), black out/collapse/fall/pass out (3), sleep loss/ difficult sleeping (3), poor child care (3), leads to alcohol abuse (2), depression (2), passing out (2), appetite loss (2), frustrated parent/parenting the baby poorly/ harshly (1), I cry easily/ emotional (1), poor child mental health (1), nosebleed (1), promotes loneliness/ isolation (1), resort to wrong vices like promiscuity (1), can lead to death (1), weak (1), contemplate suicide (1), heart beats fast (1), lose one's mind (1), it hurts (1), dropping out of school (1), failing to function (1), disturbs thinking (1), loss of concentration at school (1). **Important to note that themes overlap.*

With regards rumination/thinking too much which was the most popular theme, codes emerging were that parenting stress brought rumination/a lot of thinking which led to feeling sick. Some participants stated that parenting stress brought thoughts of how they would raise their baby. Others said that parenting stress kept them constantly thinking which consequently made them mentally distressed. For instance, one participant, 18-year-old Choolwe (pseudonym) reported that:

Yes, in terms of health it affects health, the more you are thinking the more your body is becoming weaker, and you are getting slimmer, and people will start saying you have HIV. You will find that you are not sleeping, and you are stressing all the time. You cannot sleep, you have headaches, and there is a lot that happens (Choolwe, participant 17).

Another participant, 19-year-old Chishala said:

Like us the adolescent mothers, we would want people to support us. Parenting stress affects my mental health, it disturbs my thinking. Us at our age, when you look at your

child, the thing that makes us stressed is that sometimes you might even have forgotten but when you just look at the child, from nowhere you just feel… I do not know how I can say it honestly…sometimes it even irritates, surely at 19 I have a child… ah no…you complain within yourself…it hurts…ah I do not even know how I can put it to be honest…yeah honestly (Chishala, participant 2).

Another participant, 19-year-old Mary narrated that:

The health of a parent is affected badly because you will find that you are thoughtful and for others you will find that they will not even take care of the baby as they spend too much time thinking. The health is affected and those are the ones we see who just resort to taking alcohol and they get their child and go out to drink with the child (Mary, participant 18).

The findings above indicate that adolescent mothers are faced with rumination/a lot of thinking due to their new role and this seems to affect their lives negatively. It takes a toll on their lives as well as the lives of their babies. This is because parenting stress causes them to ruminate/think a lot, as well as engage in negative religious coping, consequently affecting their mental health as well as the care for their baby. Thus, due to the high demands placed on them in their new role, some resort to alcohol drinking, a sign of mental distress. It seems most adolescents are caught unaware and hit hard by the responsibilities that come with having an unplanned baby. These findings are in line with studies that show that adolescent mothers are likely to be thrown offset with the unexpected new parenting role and that they are likely more than non-parenting adolescents or adult parenting women to experience higher parenting stress (Emery et al., 2008; Hans & Thullen, 2009), ruminating/thinking a lot leading to negative mental health (Barnet et al., 1996) and poor physical health (Olpin & Hesson, 2015).With evidence

from psychoneuroimmunology related studies, parenting stress like any other stress affects physical health in that it weakens the immune system because when you are stressed the sympathetic nervous system is constantly aroused which then calls for most body resources such as increased blood flow to muscles and limbs (in readiness for fight or flight) which then suppresses other bodily functioning like the digestive system and weakens the body‘s immunity, leaving the body susceptible to illness (Friedman, 2011; Straub, 2014).

With regards to affecting mental health negatively (mental distress), codes emerging under this theme were that parenting stress led to feeling depressed, disturbance in one’s thoughts, lack of concentration at school, failing to function normally, failure to care for the baby properly, and prefer to be alone (one starts isolating themselves), all pointing to mental distress. For instance, 18-year-old Choolwe narrated that:

You will become disturbed even if they talk you will think that there is nothing they are saying, you will stay alone, lock up yourself, you just want to be alone all the time and do not want to be where your friends are (Choolwe, participant 17).

This finding suggests that parenting stress takes a toll on the adolescent mothers and that if this finds them with not enough resources to handle the situation and juggle the roles that come with parenting especially at a tender age, one might suffer from depressive symptoms. It seemed that some adolescents knew what depression was while some only knew the symptoms they felt and that this was serious and was not good for their health and wellbeing. They could recognize the symptoms and knew that it was bad, they however could not attach a name to it or point out outrightly what it was. For instance, some were aware that if one presented with anyone of these symptoms such as isolating themselves (avoiding hanging around friends or just prefer to be alone), experiencing

appetite loss, disruption in normal functioning, lack of concentration at school, and deterioration in care for the baby, then it had taken a toll on the adolescent mother and obviously needed help. This finding is in line with other findings that show that the parenting role in adolescent girls places immense stress on their lives and this not only affects their mental health in many ways such as explained above (Barnet et al., 1996; Huang et al., 2014; Patricia et al., 2017), but also the social, emotional and physical development of their infants (Goodman & Brand, 2009; Goodman & Lusby, 2014; Lanzi et al., 2009).

With regards to headache, the second most popular theme, codes emerging included reports that parenting stress brought about headaches, for instance, 19-year-old Nyambe indicated:

you will find that you start having headaches. Like you are not feeling well physically as though there is something you have done. You are not just feeling well. People even lose weight (Nyambe, participant 25).

Another participant, 19-year-old Towela echoed that:

Ah… I usually get sick of headache, losing appetite, I usually do not have the appetite to eat if I think about it too much (Towela, participant 4).

These findings are consistent with existing stress theories such as the Hans Selye's general adaptation theory (Olpin & Hesson, 2015). This theory posits that when stressed, our bodies react with a fight of flight response of which the sympathetic system is activated and hormones like cortisol and adrenaline are secreted, blood vessels are constricted as blood rushes to muscles in the hands and legs. During the process, the tension could cause headaches as the body prepares to fight or flight (Gurung, 2010;

Straub, 2014). It is also during this process that other parts of the body lay dormant and other bodily functions like digestion are slowed down to allow the organs that would help in the fight and flight to operate at full capacity. Also, stress causes changes in appetite, affecting eating and drinking patterns as many people find themselves skipping meals which in turn leads to an imbalanced blood sugar levels which have the potential to trigger headaches and migraines (Friedman, 2011).

With regards parenting stress affecting physical health (one getting sick often), the third most popular theme, was distinct but at the same time like the theme of headaches. It was distinct in that the adolescent mothers used the term physical health to refer to general illness that they could not categorize or distinguish or easily identify or disclose or specify, including general body pains. Some of the participants used it to generalise ill mental health they experienced regardless of it being ill mental health and ill physical health. Most of them sort of combined both mental and physical illness and said parenting stress affected their physical health. Some codes emerging were that parenting stress brought about ill mental health (mental distress) such as, frequent sickness, BP, ruminative thinking which led to being weak (people start thinking you have HIV), caused a lot of diseases, not feeling well physically, headaches, dizziness, and loss of appetite. For instance, in trying her best to explain the effects of parenting stress, 19-year-old Mwansa narrated that:

…it affects me a lot, it gives me ill mental health. It makes me sick often more especially if I am thinking a lot which later leads to also BP shooting nowadays, sometimes my BP will go up from nowhere, just like the day before yesterday my BP was high such that I was even at the clinic (Mwansa, participant 1).

These findings are in line with studies and theories that show that stress can lead to physical illness, and this has been shown in several ways. One way this happens according to the illness behaviour (sick role) is that when an individual is faced with stressful situations, some individuals respond to this by entering the sick role. They do this by being lethargic, oversleeping, resorting to drinking alcohol, avoiding chores (in the case of the adolescent mothers in question), staying away from school, and remaining in bed for several hours. This usually results in an individual complaining of headaches, stomach aches and other pains, basically fluctuations in the body state which is often interpreted as illness. When one exhibits several of them, they enter into the sickness role, which is said to sort of relieve the individual from changes in the environment (Friedman, 2011; Mechanic & Volkart, 1961).

Another explanation to the findings above concerning stress leading to physical illness, is with the help of the 'stress and unhealthy behaviour model' which argues that some people will respond to stress by engaging in unhealthy behaviours such as poor diet, lack of rest, lack of exercise, lack of sleep, cigarette smoking, alcohol abuse and many more. All these unhealthy behaviours put individuals at greater risk for a variety of medical problems (Friedman, 2011). For instance, poor diet would lead to a deficiency in vital vitamins, and minerals important in the fight against illness, leading to poor physical health (Olpin, 2016). However, in this study, poor diet was mostly caused by lack of money to buy much needed healthy food rich in vitamins and minerals due to them coming from poor backgrounds (Olpin, 2016). Which is consistent with many studies that show that most adolescent mothers are likely to come from low socioeconomic backgrounds (Huang et al., 2014; Leadbeater, 1999), and because of their age, yet to be financially stable (Goodman & Brand, 2009; Goodman & Garber, 2017; Leadbeater, 1996; Leadbeater, 1999).

Another explanation as to why parenting stress affects physical health is that evidence shows that it weakens the immune system. When you are stressed the sympathetic nervous system is constantly aroused which then calls for most body resources such as blood to be sent to the muscles in order to prepare the body for fight and flight response, which then inhibits other bodily functioning like the digestive system which aid in strengthening the immunity, thereby weakening the body‘s immune system, in turn making one susceptible to illness (Ader & Cohen, 1993).

7.5.5.2 Has parenting stress ever affected your mental health?

When asked whether parenting stress had ever affected their mental health, two major themes emerged, ‘yes’ and ‘no’ with majority (22) agreeing that parenting stress did affect their mental health and three indicating it did not. The sub themes emerging for those who had agreed to parenting stress having affected their mental health included having headaches, rumination/thinking a lot, trouble sleeping, heart palpitations, weight loss, poor/loss of appetite, getting moody, fainting/collapse, dizziness, cause regrets, disturbed thinking patterns, thinking God is punishing me, high Blood Pressure, frequent illness. For instance, one participant who said yes, narrated that:

I have experienced losing appetite, headache, losing weight. I have experienced those before. In thinking how I am going to raise my child or how will it be? Or the things that I need. I also need something in life so how am I going to achieve that so that is what causes you to stress (Violet, participant 16).

Another participant, 19-year-old Towela (pseudonym) indicated that:

Yes, it does affect me, like what I said getting sick often, losing my appetite, yes, ah no when it comes to sleep, I do not get enough sleep, I only sleep like 3 or 2 hours so, then I

wake up. I start thinking again, I just get stressed, ok I do not have peace (Towela, participant 4).

These finding suggests that many of the participants felt that parenting stress had affected their mental health in various ways. This finding is consistent with findings which found a link between parenting stress and negative health outcomes among adolescent mothers (Huang et al., 2014; Reid & Taylor, 2015; Venkatesh et al., 2014).

For the three participants that said no, sub themes emerging included exerting control over and taking responsibility for their emotions (suppressing emotions), and social support.

Exerting control over and taking responsibility for the stress/Suppressing emotions

One of the participants (18-year-old Inonge) who answered 'no' when asked if parenting stress affected her mental health, expressed that it did not, in that she controlled the situation by suppressing all emotions. This is what she said, "*because you need to control yourself and accept the situation as a person, because if you stress a lot, you will find yourself with mental health problems. But if you stress a lot and you control yourself and accept, you cannot have mental health problems"* (Inonge, participant, 12).

This finding suggests that it is possible for some adolescents to supress their emotions under the pretext of having control over the situation. This is not surprising as individuals have diverse ways of dealing with stress. Suppression or avoidance could work for some but mostly in the short term, meaning at some point the effects of stress would catch up and they would have to face the consequences which in most cases people would resort to unhealthy behaviours to deal with their stress (Carver et al., 1989; Yali & Lobel, 2002). Moreover, evidence suggests that individuals who consciously engage in

various coping methods exhibit better resilience than those who do not or those who decides to suppress their emotions (Bartholomae & Fox, 2017; Okafor et al., 2016).

However, on the other hand, it could be that one was really in control of the situation as is proposed in the "Lazarus and Folkman's stress coping model." The model argues that appraisal of the stressful situation is more important than the situation itself. How one interprets the situation they are faced with has profound outcomes of whether it will be stressful on not. Lazarus and Folkman called the interpretation of whether a stimulus was stressful or not as cognitive appraisal, which was further divided into primary and secondary appraisals. Primary appraisal occurs when one makes the initial assessment of whether the situation, they are faced with is a threat, loss, or challenge. Therefore, at this point if the situation is perceived as a threat or big problem, then one is likely to be stressed. If perceived as not a big deal or something that was bound to happen, then one will be less stressed. Furthermore, after one has made the initial assessment and judged that the situation they are facing is stressful (in primary appraisal), one goes onto the next level, secondary appraisal, to assess whether they have capacity to deal with the situation or not. It is at this point that one realises whether they are in control of the situation or not (Lazarus & Folkman, 1984; Yoo, 2019). When one appraises the challenges that come with the parenting role as normal and that they have to take responsibility for their actions and be in control, they are less likely to be stressed and all the challenges they go through are less likely to affect their mental health (Lazarus & Folkman, 1984).

This could be a possible explanation as to why some participants said parenting stress did not affect their mental health. It could be because they took responsibility for their actions and exerted control over the situation to make it less stressful. This finding is consistent with studies that link parental responsibility to mental health (Apetroaia et

al., 2015; Perälä-Littunen & Böök, 2012). Also, studies show that people possessing parental responsibility are also likely to have other positive attributes like high self-esteem, optimism and many more (Campis et al., 1986; Coleman & Karraker, 1998; Hassall et al., 2005). This finding is also consistent with studies that show that positive attributes could be the reason why some adolescents going through risky conditions would be able to overcome no matter how grave the situation could be (Luthar et al., 2000; Zimmerman & Arunkumar, 1994). Evidence shows that individuals with positive attributes tend to engage in behaviours that promote emotional well-being (DeRosier et al., 2013; Masten et al., 1999; Masten & Obradović, 2006; Sood et al., 2013). They safeguard against development of mental health problems (Sood et al., 2013).

Social support

The other participant (19-year-old Mwisa) who also answered 'no' when asked if parenting stress affected her mental health indicated that, *"no, because they provide me with everything. I do not have pressure of looking for things that my child needs. When I say I need this, it will come they will give me"* (Mwisa, participant 5). These findings suggests that adolescent mothers who had social support were not affected mentally by parenting stress. One explanation for this could be because their burdens had been made lighter by the social support they had received. Moreover, literature suggests that in the face of life challenges that are likely to cause stress (in this case demands that come with the parenting role), social support - that could be rendered by significant others, family, and/or friends could assist in coping especially if the one in need perceives the support as satisfying or helpful (Taylor, 2011). This is because social support is likely to buffer the effects of stress on the mental health of an individual (Chao, 2011; Chu et al., 2010).

The buffering comes into effect in several ways. One possible way is that social support has the power of influencing one's appraisal of stressful situations, thereby affecting their coping. For instance, knowledge that other people faced similar stressful circumstances and survived or managed, would make an individual likely to perceive their own circumstances as less stressful and more manageable (Friedman, 2011). Additionally, social support empowers an individual to better face emotional turmoil that comes with stress by building capabilities, which in turn cushion the adverse effects of stressors on one's mental health (Wills & Bantum, 2012). Having a shoulder to cry on, or simply sharing your problems with closed ones fosters reassurance and a sense of support thus easing one's anxieties (Hurd & Zimmerman, 2010b). Social support also fosters a sense of responsibility for one's actions and courage to be in control of their circumstances, likely to result into a reduced sense of helplessness, in turn culminating into less likelihood of mental illness as one would have none to very few symptoms comparing to an individual without social support (Friedman, 2011; Wills & Bantum, 2012).

One with social support will show very few common symptoms of mental distress such as loss of appetite, lack of sleep, depression, headache, drinking, failure to concentrate and, failure to function normally. This is because evidence links social support to lower risks for illness (Chao, 2011). Furthermore, social support also acts as a medium of information (Hurd & Zimmerman, 2010b). This happens when a support system offers information (from their experience or knowledge acquired) of how to deal with a particular challenge. Usually, the information could come with emotional support, but even when this is not the case the information received could be used to strengthen coping mechanisms at hand (Hurd & Zimmerman, 2010b). Additionally, social support can also be rendered in the form of instrumental support which involves offering tangible

help in the form of monetary or physical to an individual in need (Friedman, 2011; Heaney & Israel, 2008; Langford et al., 1997; Taylor, 2011).

7.5.5.3 Does the parenting role in general put a strain on you in any way?

When asked whether the parenting role put a strain on them in any way, all participants indicated that the parenting role put a strain on their lives. Themes that emerged included school related strain (25), unable to work (16), unable to do business (9), unable to go to college (4), unable to go to church (3), unable to play sport (1), and unable to socialise with friends (1). *Important to note that frequency does not tally with the number of participants as some of them gave more than one response*

The most popular theme emerging was school related strain with all participants citing it. School related strain had several sub-themes ranging from lack of concentration at school, not enough time to study, to dropping out of school, and not being able to go back to school. The parenting role put a strain on all adolescent mother's school in one way or another, with majority having dropped out at the time of interview. One participant, 19-year-old Dora narrated that:

If I had no baby, the 11 months that I spent in the community and the 9 months for her to be born I would have found a job maybe this time I would have gone back to school and maybe this time I would have written grade nine and would have been saying now I am completing school and will go for a course and will live well since even when you have grade 12 papers, you can find a job and work. I still have hope about school but because of difficulties in finding money, I could not go back to school, and I ended up being pregnant and having a child (Dora, participant 11).

From the narration above disruption of school was the worst consequence of having a baby at a tender age. This was followed by not being able to work because of the baby. Majority expressed displeasure and disappointment at the fact that as if dropping out of school was not painful enough, most of them could not work or start up a business because there would be no one to remain with the baby. A few who had completed secondary school also indicated their displeasure of not being able to go to college because of the disruption by parenthood. These findings resonate with studies that show that adolescent mothers are likely to drop out of school (Leadbeater, 1999) and likely to be unemployed (Knitzer & Perry, 2009). Hence, forced into financial strain which is likely to continue through adulthood. Literature posits that adolescent mothers are likely to be financially burdened in their adulthood due to unemployment as a result of lack of education (Maynard, 2018).

7.5.5.4 Does the parenting role stimulate any emotions in you?

When asked whether the parenting role stimulated any emotions in the adolescent mothers, majority (22) agreed that it [parenting stress] did stimulate emotions in them, while three indicated that the parenting role did not stimulate any emotions in them. This first part therefore presents emerging themes among the participants that agreed. The themes emerging for those who said it does stimulate emotions included joy/happiness (9), loving/compassion/warmth (9), patience (9), sadness (8), feelings of regret (2), pride (1), feeling excluded (1), feeling blessed (1), feeling neglected (1), and feeling depressed (1).

Joy/Happiness

It can be observed above that among the most popular themes emerging was joy/happiness. For instance, one participant, 19-year-old Besa expressed that:

Yes, there are there [emotions], I am happy to have this baby because again a baby is a blessing, yes those are the feelings that are stimulated, I feel happy to look at my baby because a baby is a blessing, yes those are the feelings that are stimulated (Besa, participant 3).

Loving/Compassion/warm

Love/compassion/warmth was also among the most popular themes emerging. For instance, one participant, 19-year-old Dora indicated that:

Yes, I never used to like babies or staying close to them but since I gave birth to my child, I have developed the feeling of loving children or when she brings her friends, I will make them sit and if I have a coin I will buy them jiggies. I like babies now. I even feel pity for other people's babies when I find them on mud and I say I also have a child and someone will find my child like this and will carry her so I carry them. I never liked children close to me but now I do even when my friends bring kids I stay with them. Even when a car is approaching someone's baby, I do carry them and remove them and say one day someone will find my child and remove her (Dora, participant 11).

Sadness

Another popular theme that emerged was sadness. For instance, one participant, 19-year-old Besa narrated that:

I feel sad, honestly speaking I feel sad, sometimes I do cry a lot more especially when I am alone in the room, I will cry. It brings bad emotions (Mwansa, participant 1).

feelings of regret

Feelings of regret were another theme that emerged and one participant, 19-year-old Chishala said:

Yes, many…because you are thinking of different things. The emotions that it stimulates, anh I do not even know how to put it, my feelings, sometimes I think that this baby, if he was not born maybe if I have gone or reached far by now, but this baby came to close doors for me from the time he arrived and so son and so forth, a lot of things just (Chishala, participant 2).

The findings above suggest that the parenting role stimulated several emotions, both positive and negative emotions. This implies that in as much as the timing of becoming a parent was not conducive for most adolescent mothers and caused stress and negative emotions such as sadness (rumination), depression, feelings of regret, exclusion, and neglect, it also brought about some positive feelings such as joy/happiness, love/compassion, patience, and feeling blessed. Negative emotions seemed to be because the mothers were young, inexperienced, and financially unstable. This finding is in line with studies that found parenting adolescents (especially first-time parents) to suffer from added stress and negative emotions due to parenting related demands (Hans & Thullen, 2009). Thus, these findings show support for quantitative findings above showing that parenting stress predicts rumination, religious coping, positive affect, and mental distress.

For the three participants who said that the parenting role did not stimulate any emotions in them, one cited that the parenting role never brought any emotions in her unless someone deliberately did something bad to her or someone passed a negative comment on her life, baby, or work *("no it does not stimulate…unless someone does something bad, I feel bad and feel pity for myself"* -18-year-old Matildah, participants

15). The other one said she just never experienced any emotions due of her parenting role ("*no, that I have not experienced I can lie"* – 19-year-old Violet, participant 16). The other participant also said that the parenting role did not stimulate any emotions in her. However, she gave a very interesting narrative in which she said that even though she never experienced any emotions, she would feel some sensations such as breasts and ears itching whenever she would be away from the baby and the baby was crying at home. However, this is a myth that has stood the taste of time in Zambian tradition and has no scientific basis. Rather evidence shows that it is normal for a breastfeeding woman's breasts to itch or even to lick/expel milk even when they are far from the baby. This is because just a thought of the baby especially if away from the baby triggers the release of oxytocin which helps in the production of milk and bonding, and this could increase the production of the milk and cause the ducts to be full and let down or expel the milk from the breasts (Moberg & Moberg, 2003).

7.5.5.5 Does the parenting role stimulate any thoughts in you?

7.5.5.5.1 Yes, the parenting role does stimulate thoughts

All participants except two said the parenting role did stimulate thoughts in them. Themes emerging varied and included ruminative thoughts about taking care of the baby well (6), ruminative regretful thoughts (if I did not have a baby I would have reached very far by now) (1), religious thoughts (does God love me?) (5), giving up thoughts (thoughts like I can just dump the baby at the father's doorstep) (1), mature thoughts (3), selfless thoughts (I put my baby first) (8), overwhelming thoughts of how I will manage to take care of the baby (firstly, paranoid thoughts such as, if I died would they take care of my baby the way they do when I am observing, secondly, how will my child go to school)

(8), selfish thoughts (I tend to think more about my progress than the baby's needs) (1), and last but not least, thoughts of adoption (1).

Ruminative thoughts about taking care of the baby well

With regards to the parenting role bringing about ruminative thoughts of taking care of the baby well, six participants echoed similar sentiments mostly centred around how their parenting role makes them ruminate about how they will take care of the child in terms of feeding, clothing, and future needs such as enrolling the child in school. Also, there was urgency among this category of mothers to do the right thing going forward. It was as though the parenting role was compelling them to do the right thing. For example, 19-year-old Mary recounted that:

This time I just think of doing things the right way that is all I think of. I just think about a lot of things. I want him to be educated so that he should live a good life (Mary, participant 18).

Another participant, 16-year-old Elizabeth, in giving her view on the thoughts the parenting role stimulates said, *"I was thinking that when my child turns 2 years she should start going to school"* (Elizabeth, participant 14).

These findings suggests that the stress that comes with the parenting role brought about ruminative thoughts among most adolescent mothers to not only think about their wellbeing but that of the baby as well. Also, it was not only about the current welfare of both but also the future such as how the child would be raised, school related issues and future dreams. These findings also echo a sense of parental responsibility in some adolescent mothers. They echo a realisation that there was another human being they had to take care of. The findings support the results from the main survey which show that

some adolescent mothers ruminated, but those who had some levels of parental responsibility were protected from adverse effects of rumination.

These findings are in line with studies that show that the parenting role can be a strenuous role especially for adolescent mothers who are also children themselves, and inexperienced (Hans & Thullen, 2009). The parenting role was stressful, and this was associated with ruminative thoughts. This finding is consistent with studies that suggest that stressful situations trigger rumination (Alloy et al., 2000; Robinson & Alloy, 2003). Also, these are young people who look to their parents for necessities, but now, they also have a baby relying on them. And as much as parental responsibility is commendable, for some because of limited resources, they were forced to step back a bit from planning their future to planning their child's future. This was not only unfortunate but also a recipe for disaster and a threat to their future. It was as though their own progression or development became secondary which was a source of concern in that it was tricky to guarantee a baby's future if they could not guarantee their own future. Moreover, they are also still children and needed to aspire for a better future. Thus, this would only likely feed the cycle of poverty, as it was a threat to their financial independence in future. This is consistent with studies that show that adolescent mothers are likely to be poor even in the future, likely to do odd jobs, be uneducated and most likely parent alone (Maynard, 2018).

Ruminative regretful thoughts (if I did not have a baby I would have reached very far by now)

Without hesitation, some participants who agreed that the parenting role did stimulate ruminative thoughts in them admitted that it stimulated negative thoughts. The thoughts were those of regret. In trying to illustrate this, 19-year-old Chishala narrated that:

Yes, many…because you are thinking of different things…sometimes I think that this baby, if he was not born maybe if I have gone or reached far by now, but this baby came to close doors for me from the time he arrived and so on and so forth, a lot of things just like that (Chishala, participant 2).

These findings suggest that parenting role is quite mental gruelling especially in adolescents as it is also associated with rumination. They tend to ruminate regrettably because the parenting role came prematurely and unplanned. For most, especially those coming from disadvantaged backgrounds, it almost means a disruption in their life for a long time to come or for good. This is because sometimes the resources that are meant for school are diverted to the baby and it is hard for the girl to go back to school. These findings are consistent with studies that show that adolescent mothers are likely to suffer from high financial stress and are likely to drop out of school because of financial constraints, a scenario leading to regrets and other negative thoughts (Knitzer & Perry, 2009; Leadbeater, 1996).

7.5.5.5.2 No, the parenting role does not stimulate thoughts

Two participants indicated that the parenting role did not stimulate any ruminative thoughts in them. The themes that emerged under this were acceptance and hope.

Acceptance

One of the participants recounted that the parenting role did not affect their thoughts because they had come to accept what had happened to them (being a mother at a tender age and the challenges it presented). In narrating that the parenting role did not stimulate any thoughts in her, but rather that she had come to an acceptance, 19-year-old Chishala said:

No none, there is nothing because as at now, you know that time in the beginning when I was pregnant that is when I would think a lot and it would stimulate my thoughts but as at now I have just accepted as there is nothing I can do because what came has come (Chishala, participant 2).

Hope

The other participant who also said that the parenting role did not stimulate any thoughts in her talked about being hopeful. It seemed she understood that the parenting role was a difficult one and that her age, and that of the baby (who was very little) only made it more difficult. It appeared that for her, suffering was only for a moment (while the baby was still little), that things would get better with time. In explaining this, 19-year-old Besa reported:

No, I do have a lot of thoughts concerning suffering…the baby will grow soon…its just now that I have pressure because he is small but I do not stress about it a lot…I am hopeful the future will be okay, for now because he is still small, I do think about it, but he will grow older (Besa, participant 3).

From the narrations above, the parenting role seemed to have stimulated thoughts in many young mothers. However, this was not the case for everyone, two of the participants declined having been affected thought wise by the parenting role, citing acceptance and hope. Acceptance seems to reduce the magnitude of the problem and hope seems to make it more bearable as the future seems bright. It therefore follows that acceptance would build more positive attributes that would in turn equip them to get through adversity. Moreover, literature shows that acceptance is a protective factor linked to psychological well-being. The higher the levels of acceptance, the better the mental functioning of one

in life (Gupta & Kumar, 2015). These finding are consistent with literature that argues that acceptance is significantly correlated with resilience (Gupta & Kumar, 2015).

Crucial to note that this was a unique and important finding in the adolescent motherhood literature. It deviates away from existing literature which has predominantly focused on resilience and social support. It is therefore important to explore this further.

7.5.5.6 Does the parenting role stimulate any behaviours?

When asked whether the parenting role stimulated any behaviours in the adolescent mothers, all the participants agreed that the parenting role did for sure stimulate some behaviours. The themes that emerged included responsible/mature behaviour (17), less peer pressured (17) caring (6) protective of the baby (6), quit alcohol (5), stopped risky sexual behaviours (5), compassionate (5), easily frustrated/yelling (2), more polite (2), strong (1), isolating oneself (1), patient (1), refrain from arguments (1), no longer play with the younger ones (1), go to church (1), play with fellow mothers (1). Important to note that themes overlap.

Responsible/Mature behaviour

With regards responsible/mature behaviour, sub themes that emerged included: talking more maturely, laughing more maturely, dressing more decently, quit partying, and being independent. When giving an example of maturity of behaviour because of the parenting role, 19-year-old Towela said:

I feel like I have become a little matured and the things I used to do a long time, like the behaviours I had a long time compared to the ones I have now are a bit different. For example, like caring, a long time I never used to care about stuff, but now I care, also like liking babies, a long-time age I never used to like babies but now I do…I am also more

responsible. I conduct myself in a mature way like in talking, laughing and dressing (Towela, participant 4).

Another participant viewed this from another angle and shared how the parenting role had improved her behaviour and this was in terms of refraining her from partying. She said:

I used to go out often during weekends partying. Okay like I have just set my life aside, it is now all about me and the new baby (19-year-old Kalumbu, participant 6).

Caring

A few participants shared that the parenting role stimulated in them caring behaviour towards their baby and other toddlers, an attribute that many did not realize they had before now. For instance, 19-year-old Violet shared:

Ever since I became a mother, I am more caring, not only towards my child, ah but other babies too. I now feel very bad when I see a baby crying. I cannot eat before feeding my baby (Violet, participant 16).

Easily frustrated/yelling

Other participants echoed that the parenting role got them easily frustrated and yelling too much. For instance, 19-year-old Mwansa narrated that:

The behaviours that I exhibit because of my parenting role is shouting/yelling too much, getting angry too much or easily, getting frustrated easily and very much (Mwansa, participant 1).

Another participant 16-year-old Clara said the parenting role causes frustrations that she ends up using bad language. She indicated that, *"it's frustrating I end up insulting and using bad language"* (Clara, participant 13).

These findings illustrate that the parenting role stimulated both positive and negative behaviours. The positive behaviours of responsibility, maturity and caring indicate a level of parental responsibility in the mothers and thus support the findings above in the main survey and resonate with the findings of (Perälä-Littunen & Böök, 2012; Tardy, 2000). The negative behaviours on the other hand indicate the effects of stress on the mothers that are expressed through frustrated behavioural patterns. These reveal rumination and mental distress, and resound the main survey findings (Hans & Thullen, 2009; Huang et al., 2014).

Having looked at the effects of parenting stress on mental health, the next section focuses on the coping strategies of the adolescent mothers in the face of stress which is usually brought about by the parenting role. Since the majority did say that the parenting role brought about stress and affected their mental health, it was important to hear their coping strategies in the face of stress.

7.5.6 Coping

The previous section highlighted the effects of parenting stress on the mental health of adolescent mothers. It covered the adolescent mothers' perceptions of the effects of parenting stress on their mental health. It also covered the strain of the parenting role on the adolescents, and whether the parenting stress had stimulated any emotions, thoughts, or behaviours in them. Therefore, having established the effects of parenting stress on the mental health of adolescent mothers in the previous section, I now discuss their coping

strategies in this section. This section thus focuses on the coping strategies used by adolescent mothers in the wake of stress.

This section therefore begins by showing how adolescent mothers deal with parenting stress, and whether these strategies work or not. It then goes on to show whether the coping strategies used to deal with parenting stress impact their mental health in any way. Essentially showing whether they promote mental health or promote mental problems. Additionally, whether their strategies include seeking help, religious coping, or using personal attributes, and if they do whether this alleviates their stress or not. Also, the section will show whether alleviation of stress led to better mental health outcomes. Furthermore, this section will show whether personal attributes can help deal with parenting stress. Lastly, it will cover whether adolescents were aware of any programmes in the health centres or in the communities aimed at promoting the mental health of adolescent mothers. The next sub-section therefore introduces how the adolescent mothers deal with parenting stress.

7.5.6.1 How do you deal (cope) with parenting stress?

Coping refers to the means one engages in to deal effectively with challenging or difficult circumstances (Straub, 2014). It also refers to means that individuals engage into to safeguard and protect themselves from the emotional effects of difficult circumstances (Friedman, 2011). When asked how adolescent mothers deal with parenting stress, several themes emerged and they included social support from friends (11), forget/distract myself (7), play with my baby (7), take a walk (6), tell stories with mum/sister (3), rest/sleep (3), listen to music (3), seek social support (3), laugh/chat with people (3), religious coping through reading the bible (2), religious coping through praying (2), child support (2), read

a book (1), religious coping by church (1), play sport (1), seek advice from elders (1), sing (1), alcohol (1), cry (1), drink water (1).

Friends was the most popular theme that emerged. It seemed half of the participants turned to friends as one of their ways of coping with their stress. Turning to friends is among several ways of seeking support or assistance. Friends are one of the several sources from which one can seek or receive social support (Taylor, 2011). And as human beings we are generally social beings with the need to belong, loved, cared and supported (Taylor, 2011). Social support consists of several resources such as emotional, informational, companionship, instrumental (tangible), and intangible social support (Heaney & Israel, 2008; Taylor, 2011).

It is evident in this study that seeking social support from friends was a big part of the adolescent mothers' lives and popular views emerging were seeking advice and chatting, components of informational support (Friedman, 2011; Heaney & Israel, 2008). In her own account of how she turns to friends to deal with stress, 18-year-old Lilly expressed:

Even my friend knows when I am so upset; she comes and tells me to listen and says things should be like this and that way… and even us we have children and us we have three children but at least you have one child and all of us have no support for the children. So, when she starts telling me that then my heart calms down (Lilly, participant 24).

Another participant, 19-year-old Nyambe narrated that:

I do manage because there is a friend who always offers me encouragement that I should not think too much, just like that, that is how life starts so you must be strong. If you think too much you will start losing weight. So, you must be strong (Nyambe, participant 25).

These narrations imply that adolescent mothers tend to turn to friends, especially fellow mothers for comfort and advise on how to deal with their circumstances. Literature shows that having a friend going through similar circumstances could be a source of social support. This is because one will realize that they are not the only ones going through such problems and would be looking to the other person for comfort, encouragement, and lessons of how to deal with the situation (Friedman, 2011). Also, in some way, identifying or learning that a friend or a loved one is going through the same circumstances and have not given up, gives hope that this situation is manageable. If the other person is able to manage or deal with it despite being in similar circumstances, then I can also do it (Friedman, 2011). Thus, social support such as one emanating from a friend can boost confidence to handle the situation and drive one to finding ways of dealing with a situation. This in turn encourages one to take responsibility for their action and be in control of their situation (Friedman, 2011). This is because having social support provides one with a support network that would remind them of their capabilities or strengths to tackle the circumstances (Friedman, 2011). However, social support from friends should be scrutinized as it may not always be positive and lead to better outcomes. It is possible that some of it would cause bad influence just like negative peer pressure. Parents and guardians need to be on high alert to know what their adolescents are learning from friends because some lessons would not be for the best but likely to do harm. For instance, 19-year-old Mwansa narrated that:

…because that side like, ok I have friends that side, at least they make me feel better, at least they make feel comfortable whereby I even get some advice from them, like some will go like…no it happens, like for this girl, there is this girl, she is pregnant again that same side. So at least when we sit the two of us, we do give each other advise that being a parent is like this and like this…then some guys they will go like…such things

happen…like its life…it happens in life…so after coming from that side, l find that I even calm/cool down (Mwansa, participant 1).

This shows that even as much as social support from friends is important and has benefits, not all advice and chatting would be desired support. This friend would be not the best person to offer advice as she was pregnant again and would be encouraging the friend directly or indirectly to indulge in risky sexual behaviours. Thus, parent's and guardian's support would be crucial and protective against negative peer pressure (Schacter & Margolin, 2019).

These findings are in line with studies that show that adolescents tend to seek support from their friends in the adolescent years very often. Evidence shows that this social support is important and is a protective factor from stress and other challenges (Schacter & Margolin, 2019). However, adolescents are still young, and their friendships should be monitored. Thus, other sources of support such as parents or guardians are crucial to mitigate any peer pressure, conflicts, and inadequacies from friends (Schacter & Margolin, 2019). Moreover, literature suggests that adolescent mothers with higher social support are likely to have positive attitudes towards the parenting role and consequently likely to do better at the parenting role than those with lower social support (Colletta, 1983). Also, the findings are in line with literature that shows that higher levels of social support are associated with reduction in stress levels generally (Barth et al., 1983).

However, even though the most popular theme for coping was 'turning to friends for social support,' another popular theme that emerged was religious coping through reading the bible, praying, and going to church. These findings support the observed findings in the quantitative studies above which indicated that adolescent mothers engaged in religious coping as a means of coping with the parenting stress. And these

findings are in line with studies that found an association between religious coping and mental health outcomes (Bjorck & Thurman, 2007; Cole, 2005; Park et al., 2018; Pearce et al., 2006).

7.5.6.2 Do your ways of dealing with parenting stress help or not?

When asked whether their ways of dealing with parenting stress (above) helped or not, majority (22) of the participants agreed that they did help, while five responded that they did not work. Emerging views for the participants that agreed were two-fold. A fraction said their ways of dealing with parenting stress worked in that it reduced their stress. While the other fraction said their ways of dealing with parenting stress only worked sometimes and not always. Concerning the former, in trying to explain that it worked (dealing with parenting stress through seeking social support from family), 19-year-old Chishala narrated that:

Yes, it works. Because you will find that the baby starts crying and I feel frustrated and I do not know anything…I get surprised and then I will tell my aunt that the baby is crying but I do not know why or what is wrong, I will get frustrated then you will find that auntie gets the baby and you will hear that ah the baby's temperature is high, do this and this and for sure you will be surprised that even though the baby will continue crying, at least he will reduce as compared to before (Chishala, participant 2).

Another participant, 19-year-old Womba who also said that her way of dealing with parenting stress (social support from significant other) worked, recounted that:

Yes, it helps me out because he has helped me, and it reduces stress. I just get the phone and tell him baby the child does not have this and that and he will say okay. The more that person brings the things, you cannot have much stress. You just have to put your man

in prayers and know how to answer him so that everything can go well for you in your life (Womba, participant 8).

The two narratives above show that social support was among the ways of dealing with parenting stress that participants cited as ways that worked. Getting emotional as well as tangible (assistance in calming the baby) social support from a family member as shown by Chishala's narrative helped reduce the stress. Similarly, tangible social support in form of money targeted for child support as narrated by Womba helped reduce her stress and consequently buffering the adverse effects of stress on mental health. These findings are in line with studies that showed that social support was a buffer in the relationship between perceived social support and mental well-being (Chao, 2011; Chu et al., 2010; Wills & Bantum, 2012).

With regards some participants who indicated that their ways of dealing with parenting stress only worked sometimes, this is what two had to say. 19-year-old Twalumba was one such participant and narrated:

Sometimes they work when you have someone to tell you stories and others make you stronger you just find that the thoughts become lighter (Twalumba, participant 10).

Another participant, 19-year-old Towela recounted that:

l get relieved, sometimes I cool myself down, I find that I forget about it, other times no matter how much I cry, that thing will remain at heart and will keep bothering me. When I cry and it works, I feel better, not very fine but just better and free, I experience a little freedom like ok let me just forget about all this…. Then when the crying does not work, I do not feel good so I would just stay indoors and lock myself in (Towela, participant 4).

From the narrations above, it seemed other types of social support such as intangible social support including chatting with friends and receiving advice worked but not always, and not as much as tangible social support. This can be seen above in Twalumba's narration. Similarly, other ways of dealing with stress such as crying, were not sustainable, in that, it was either the effects were short lived or it did not work at all as in the case of Towela above in which she implied that if her ways of dealing with parenting stress did not work, she locked herself indoors. An explanation as to why these latter ways of dealing with parenting stress only worked sometimes is that they were emotion focused coping strategies aimed at reducing pain. Emotion focused coping strategies differ from problem-focused (aimed at taking action to eliminate or lessen the effects of stressors) in that they focus on reducing pain through actions such as avoidance, minimization, distance, emotional expression, and denial (Carver et al., 1989; Lazarus & Folkman, 1984). It is not surprising that the emotion focused ways of dealing with stress did not work for the adolescent mothers in this study. This is because they were not suitable in tackling the sources of stress for many disadvantaged young mothers, which was inability to cater for all baby needs (Solomon & Draine, 1995). They could relieve the symptoms of the stressor temporarily but would not address the root cause of stress, consequently making the effects worse in the long run (Yali & Lobel, 2002). These findings are in line with studies that show that maladaptive forms of dealing with stress are associated with negative mental health outcomes (Yali & Lobel, 2002).

Additionally, the adolescent mothers narrated that engaging in religious coping helped. Also, these findings attest to the results in study one and two above which suggested that positive religious coping predicted high positive affect and low mental distress. They are also consistent with previous studies which found links between religious coping and mental health outcomes (Pargament et al., 2011; Pearce et al., 2006).

Coming to the ones who said ‘no’ their ways of dealing with parenting stress did not help. Their views show that the problem was not solved. In narrating her views about how her ways of dealing with parenting stress did not work, 19-year-old Dora narrated that:

No, because in the night if I am over bothered by my problems, I just get one or two piriton (medicine) and I take it and I will stay awake for a while then sleep. That is how I sleep. Then that issue will be gone but then I will wake up to a new day and again I will start thinking that there is no sugar and other things and again I will start thinking. So it does not help but I just take so that I can sleep and rest because if the headache persists I will have a problem (Dora, participant 11).

It seems this participant takes piriton (medicine) because she is too stressed with numerous baby needs and does not sleep well and her only way to catch some sleep is by taking piriton but by the time she awakes, her problems are still existing. This is another example of emotion focused coping and in this instance a maladaptive coping strategy for this stressor. It seems to not work and, in the end, brings them back to where they started from as they do not tackle the problem with solutions that could help, but tackle it with avoidance. This would not increase one’s functioning, rather, may relieve symptoms temporarily while the stressor maintains its strength or becomes more stressful (Solomon & Draine, 1995). They do not address the root cause of stress and may only make the effects worse in the long run. This is in the category of venting of emotions, denial tendencies, behavioural disengagement tendencies, mental disengagement, and disengaging from daily routines, using alcohol, and drugs (Carver et al., 1989). All are maladaptive coping styles associated with negative mental health outcomes (Yali & Lobel, 2002). However, these are adolescents who do not have much control of their circumstances and depend solely on their families and the father of the baby to help with

provision of baby needs. These findings are in line with other studies that found that adolescent mothers will engage in various maladaptive behaviours just to avoid facing problems they encounter, or avoid taking responsibility knowing that their circumstances are beyond them and out of their control (Yali & Lobel, 2002).

7.5.6.3 How do your ways of dealing with the parenting stress impact your mental health?

When asked how their ways of dealing with parenting stress impacts their mental health, several themes emerged and they included reduces stress (8), reduces thoughts (8), calms the mind (3), lightens my burden (3), does not help much (3), frees my mind (1), become emotional (1). From this, most of outcomes from their ways of dealing with stress were good mental health outcomes except one which was a mental health problem.

Findings revealed that two themes emerged as most popular, and these included 'reduces stress' and 'reduces thoughts.' Though they seem similar, they are somehow different but not ruling out the fact that they could overlap. In terms of reducing stress, this meant that their ways of dealing with parenting stress worked and that it did promote their mental health. Meaning if they were very stressed before, after employing the method, their stress reduced. For instance, 19-year-old Ingutu narrated that:

They reduce because you will find that they hold the baby for you that is all. Yes, you find that sometimes you are very tired, and you hear someone say bring your child I stay with them you rest a bit (Ingutu, participant 7).

Ingutu's narration implied that whenever she received help with the baby, for example, when someone helped hold the baby or helped her look after the baby for a short period so she could rest, her stress reduced. These findings suggest that receiving tangible

social support such as financial, material or services could help reduce stress (Friedman, 2011). This is an example of perceived social support and that being aware of readily available assistance and getting to experience it would play a huge role in lifting that weight off someone's shoulder, and thereby reducing their stress (Taylor, 2011). This finding is consistent with studies which found that higher levels of social support among adolescent mothers were associated with better mental health outcomes which spill over to even greater benefits (Hurd & Zimmerman, 2010b).

The other popular theme that emerged was 'reduces my thoughts (rumination)', like the first one above (reduces stress), but more specific to thoughts. Eight participants argued that their thoughts reduced when they employed their ways of dealing with stress. This translated into impacting one's health positively. For instance, 19-year-old Mary recounted:

It helps me think less or spend less time thinking. Just like what I said at first, when I sing and read the bible and chat with people then you will even feel it within you that you are feeling better (Mary, participant 18).

Another participant 19-year-old Violet narrated that:

They help my thoughts to settle so that whatever I was thinking about finishes. I spend time with people chatting so that thoughts reduce. They give you good advice and encouragements, your thoughts reduce (Violet, participant 16).

These findings suggest that their ways of dealing with parenting stress helped lessen their thoughts (rumination). In this case, reference is made to religion and emotional support (chatting with people). For instance, Mary's narration implies that turning to religion and seeking emotional support helped reduce her thoughts. Religiosity

particularly singing and reading the bible helped her. She is like several other people around the world and other participants of this study who turn to religion as a means of coping with stress (Pargament et al., 2011). For instance, positive religious coping has been found to positively impact mental health, while negative religious coping has been found to negatively impact mental health (Carpenter et al., 2012; Pargament & Brant, 1998). Thus, these findings are in line with studies that found that religious coping, particularly positive religious coping to play a protective role in the relationship between stress and mental health (Ano & Vasconcelles, 2005; Bjorck & Thurman, 2007; Pargament et al., 2000). These findings also support the results in the quantitative studies above concerning the mediating role of religious coping.

The findings for emotional support are consistent with studies that found that social support was a safe avenue for adolescent mothers to speak openly about their emotions and in turn receive feedback about their situation, as well as encouragements (Hurd & Zimmerman, 2010b). In turn, this was linked to an equilibrium in the lives of the young mothers, thereby promoting better positive mental health outcomes, both in the short and long-run (Hurd & Zimmerman, 2010b).

7.5.6.4 Do your ways of dealing with parenting stress include seeking help?

All except two of the participants admitted that their ways of dealing with parenting stress included seeking help. To that effect several themes emerged and they included seeking help from the following: Mother (12), grandmother (4), friends (3), aunt (3), father (2), sisters (2), baby's father (2), mother and father-in-law (2), neighbours (2), brother (1), uncle (1), mother-in-law (1), grandmother in law (1), other family members (1), elders (1), sibling (1), prophet/pastor/reverend/man of God (1), and other well-wishers (1).

The findings reveal that the most popular theme was seeking help from the mother. Even though this was the most popular theme, only half of the participants mentioned that they do seek help from their mothers. One reason for such a small number could be the fact that a few of the participants could have been living with other members of the family such as the father or other relatives such as aunt or uncle. This is because some were either single or double orphaned and were being cared for by other close extended family members. Those who indicated mothers admitted to having some stress relieved when their mothers helped in various ways such as helping take care of the baby. However, they still complained about it being short lived because most of the mothers mentioned were struggling financially and did not have much to offer the adolescent mother and her child, of which baby needs were the main reason for stress. However, even though this number was only half of the participants, seeking help from the mother was the most common emerging them. This shows that the adolescent mothers perceived their mothers as their number one support system. For instance, 19-year-old Mwisa recounted that:

Yes, I do seek help… like from my mother. Mostly it is my mother and then mostly I will not even tell her that I am tired, she will just come and get the child and say go and bath and rest (Mwisa, participant 5).

Similarly, another participant, 19-year-old Towela narrated how the mother was the first person she seeks help from, she said*:*

yes especially from my mother, like so she can help me, Mummy I want this and that, I want this for the baby, at present I do not have this, then she will help me, if I do not have then she will give me… (Towela, participant 4).

These findings suggest that adolescent mothers do seek help as they go about dealing with stress, and they mostly run to their mothers for help. This finding is in line with

studies that found that adolescent mothers reliegd on their mothers to pull through, especially in cultures that emphasized the importance of family (Rocca et al., 2010). However, it is not always that adolescent mothers can rush to their mothers for help, this could be because they could be on conflictual terms as a result of the adolescent pregnancy. It could also be that the mother is deceased, implying the young mother would have insufficient social support (Logsdon et al., 2002). Consequently, making it difficult for the use social support as a means of dealing with stress. This could one of the reasons for the non-significant moderation for social support in the quantitative studies above.

Even though the majority admitted to seeking help as part of their strategies used to deal with stress, two participants indicated no to seeking help of which one indicated she did not like bothering people, and the other indicated bluntly that she never asked for help from anyone. 19-year-old Kalumbu who said she did not like bothering people narrated "*No, I do not like being a bother to people just to say I do not like bothering people with my stress"* (Kalumbu, participant 6). While 19-year-old Ruth narrated that *"No, I do not ask for help"* (Ruth, Participant 9).

These results suggest that in as much as most adolescents need help because they are likely to be unemployed and unmarried, some would deliberately not seek help as part of their coping strategies as they would consider it a bother or unnecessary. However, this is not to say that they do not need help or that they would not accept help if they were offered. Sometimes it could just be that they are ashamed of asking for it, or that they are too guilty to ask for it. Literature continues to show that adolescent mothers especially those coming from disadvantaged backgrounds face a lot of challenges, most of them financial, which subsequently lead to their stress as many are said to lack adequate social support (Huang et al., 2014; Knitzer & Perry, 2009; Logsdon et al., 2002). It therefore

follows that their parents and guardians must be alert to the fact that these adolescent mothers need support ranging from social, emotional, financial, and physical. It is thus imperative that they help them navigate through life for better self-mental health and wellbeing of their children.

7.5.6.5 Does seeking help alleviate your stress?

When asked whether seeking help alleviated their stress, a few themes emerged which included: reduces stress always (17), reduces stress sometimes (2), no (2), for a short time (1), not really (1), gets worse (1).

Seventeen participants said yes seeking help does alleviate stress, it reduces stress. For instance, 19-year-old Chishala narrated that:

Yes, my stress reduces. Because sometimes may be he was crying, serious crying not jokes from nowhere and they say my baby cries a lot, they say he is fussy he can start crying from nowhere, you will find that at times he will cry in a way that does not even make sense, you will try at times that maybe it is an insect that is crawling on him and you will remove all his clothes but find nothing, maybe the body temperature is even normal and you will ask, then why is he crying then auntie at times will say ah maybe remove his socks, and if there is junior cafimol please bring we give him and for sure when you give him you will be surprised at times that maybe he was just sleepy and afterwards he will even sleep and all that fussiness will even end (Chishala, participant 2).

Another participant 18-year-old Inonge recounted:

Yes, it helps to reduce stress because they help me, when I ask for something, they give me. I do not have that stress of going outside and going to ask from other people. I do not have that stress (Inonge, participant 12).

From the above narrations, the findings suggest that their stress reduced when the adolescent mothers were supported in one way or the other. These results resonate with other studies that found that social support helped to relieve stress and that adolescent mothers with sufficient social support had better mental health and wellbeing (Hurd & Zimmerman, 2010b). Particularly, social support from family members and a significant other were found to be great protective factors against mental health problems (Racine et al., 2019).

On the other hand, two participants said that their stress was alleviated but only sometimes. One of them, 18-year-old Choolwe said:

…not always. I just have to push for myself to find those things I need. It comes out when they give me everything, I want them to give me but it is not always that I am given all the things I want (Choolwe, participant 17).

Another participant narrated that:

Yes, sometimes. If there is no lotion, she buys for her, buying for her clothes, and if I see that she has the things, I cannot think more but if she does not buy then l think (Ruth, participant 18).

These findings suggest that seeking help does alleviate stress, but this only happens sometimes for some adolescent mothers. From the narrations it could mean that help could be there but not as sufficient as would be required. It could also mean that the social support network would want to help in ways that would make a significant impact but they could be constrained financially or in other ways. This suggests that adolescent mothers can have help but not always or not as consistently as needs would demand. The reason for this could be that at times their support system would have the capacity and

means to help and other times they would not have. This could explain why the moderating role of social support was not significant in the main survey. These findings are in line with findings that show that adolescent mothers may have insufficient social support owing to several reasons, among them, lower likelihood of a supportive partner as compared to adult mothers (Colletta, 1983; Huang et al., 2014), and they are likely to come from poorer backgrounds (Racine et al., 2019).

7.5.6.6 Does alleviation of your stress lead to better mental health outcomes

When asked if alleviation of their stress lead to better mental health outcomes, a few themes emerged including better/positive outcomes (18), sometimes positive and sometimes negative outcomes (4), thoughts become clear (1), no because my mind is not free (1), no stress to begin with (1).

The most popular theme that emerged was that alleviation of stress led to better/positive outcomes. For instance, 19-year-old Womba narrated that:

The advice I get and cooperating with the elders and what they tell me, relieve me of stress. It does not completely go but it becomes at least. The way we women are if a man is telling you something, you answer back. The more you answer back the more he will not do anything home or anything for the child. The more you will keep on thinking and thinking. When this happens you need to confide in someone, and they give you advice like this person has told me this and that, how can I handle it and will know what to tell you and stress will reduce. That is why they do not allow you to be arguing with your husband daily, even if he tells you something bad do not answer back just listen to what he is telling you. Your husband is your mother and father because he is the one taking care of you (Womba, participant 8).

Another participant 18-year-old Lilly said:

It is good outcomes. Like… what can I say …They reduce. They reduce because you find that my mother helps me even the owner of the child when he brings what he brings at least (Lilly, participant 25).

While participant, 19-year-old Besa said:

Yes, it helps me experience better health outcomes. Yes, when they help me, that stress is alleviated because you find that maybe what they give me I could not afford so l Find that my stress gets relieved, I find that I will not have a lot of thoughts because they would have helped me out, because on my own I was not managing (Besa, participant 3).

The results above indicate that majority of the participants revealed that their ways of alleviating stress led to better or positive outcomes. Observing the several views given including the narratives above, several common themes emerged. It seems that adolescent mothers who were given tangible social support such as being helped in providing for the baby in one way or another perceived a relief in stress and narrated that alleviation of their stress led to better or positive mental health outcomes. These findings are in line with studies that found that instrumental support, a kind of social support that involved the provision of tangible resources to one in need (by family or friends) was linked to perceived alleviation of stress and prevention of mental distress (Friedman, 2011).

7.5.6.7 Share with me if any of your personal attributes help you deal with parenting stress.

When asked if they had any personal attributes that helped them deal with stress, several themes emerged which included hardworking (18), determined (18), optimistic/hopeful (16), ignore my problems/ ignore any wrong doing (15), perseverance

(14), courage/strength (13), creativity (12), move forward/ cannot go backwards (12), faith/ hope in God/ prayers (11), positive distractions (11), tolerant/ patient (4), tenacious (3), sociable/ warm/ loving person (1), no attributes (1). Important to note that these attributes are not mutually exclusive but rather overlap.

It is clear from above that in terms of personal attributes, hardworking, determined, optimistic/hopeful, tolerant, perseverance, courage/strength, creativity, faith/ hope in God/ prayers were among top themes that emerged. Suffice to indicate that all emerging themes had several sub-themes developing from them.

Hardworking

As regards hardworking, most participants reported that their hardworking attribute gave them hope for a better future. The sub themes that emerged from the hardworking attribute included hardworking in school, work, odd jobs, business, talents, and chores at home. For instance, participants who worked hard in school found consolation in this in that it gave them hope for a better future which in turn reduced their stress and brought about positive outcomes. For instance, 18-year-old Lushomo's words:

Being at school and working that is what gives me the courage and I find I even go to school. It is there the same thing elderly people say where they say that school is very important and when I think of that I have courage and say maybe when I complete school, I can find shelter where to keep my child (Lushomo, participant 23).

Similarly, participants who worked hard using their talents expressed that their hardworking attributes helped them deal with stress as whatever money they realized helped cushion the burden of providing for the baby. In her own words, 18-year-old Choolwe narrated that:

What helps me a lot is plaiting hair, I plait hair and doing deco sometimes. My friends call me, and I go to do piecework and that helps me sometimes and a lot. It motivates me a lot and helps me to move forward. Going forward I have to do better than this one, I have to work hard and push harder (Choolwe, participant 17).

These findings suggest that the hardworking attributes gives adolescent mothers a purpose in life and helps them not to give up on their dreams. It gives them something to hold on to even as they struggle in their new parental role. This in turn gives them hope for a better future if only they persevere and work hard at school, work, odd jobs, or whilst using their talents. This implies that personal attributes play a significant role in how adolescent mothers cope with parenting stress, with positive attributes possibly enhancing positive mental health outcomes. This further highlights the benefits of encouraging adolescent mothers to cultivate their personal attributes for better development and positive mental health. Also, it can be seen from above that the adolescents mentioned many other personal attributes apart from hardworking. And many participants had positive attributes that interacted with family resources as well as social environmental resources.

These findings are in line with literature that argues that a range of positive individual attributes have been found to be related to positive mental health outcomes (DeRosier et al., 2013). These individual attributes have also been found to interact with family dynamics as well as broader social environmental context (Masten & Obradović, 2006). Evidence also shows that individuals with many positive attributes tend to engage in behaviours that promote emotional wellbeing, as can be seen in this study, how some adolescents reported to engage in deliberate efforts to better their mental wellbeing and improve their financial and physical welfare of themselves and their children (DeRosier

et al., 2013; Masten & Obradović, 2006; Sood et al., 2013). Additionally, literature shows that positive emotions breed more positive emotions which lead to better mental health outcomes (Fredrickson, 2001; Siu et al., 2021).

Creativity

As regards creativity, several sub themes emerged which included for instance using available resources to make something for my baby but at the same time use this creativity to deal with stress. For instance, when asked if any of her attributes helped her cope with stress, 19-year-old Dora narrated:

I have them. When I think a lot, I find something to do, I am good in sewing, so I get clothes which do not fit me and make something for my baby. I get cotton and needle and sit. And make something for my baby and my stress goes or is relieved. Or I get things and start packing them in order. But I enjoy sewing mostly and making things (Dora, participant 11).

This finding suggests that creativity was an important aspect in some adolescent mother's lives, and it helped them deal with stress. It gave the young mothers something to turn to such that in the end they felt not only stress relief but also a sense of accomplishment. It also echoes a sense of parental responsibility attached to it. This finding reveals that instead of ruminating about their circumstances, some mothers chose to be creative and, in the process, exhibited parental responsibility towards their babies through creativity.

Creativity was a unique finding in this study in that many studies in this discourse have focused on resilience and social support for protective mechanisms against adversity in adolescent motherhood mental health. Seeing that most research in this discourse was

done in wealthier countries, it is important to note that this finding deviates from existing literature and could give an explanation as to why some adolescent mothers were found to be low in resilience (in study 2), but did not suffer from mental distress, especially those coming from disadvantaged backgrounds. This gives an indication that there could be other resources playing a buffering role. This finding is important especially for poor contextual backgrounds in that it gives a chance to explain what could be happening in these regions. It is an eye opener that researchers should look to other strengths like creativity to champion protectivity factors that could help adolescent mothers in adversity. Few studies on student learners found positive strengths and good character qualities to be related to favourable learner outcomes (Siu et al., 2021; Wagner & Ruch, 2015; Weber & Ruch, 2012). There is need for future research to explore this protective factor further to understand the protective mechanism around it.

This is also important in explaining the findings of the previous study, it could be that the reason why resilience and social support were non-significant moderators was that maybe adolescents in this study and particularly from LMICs might be possessing other strengths like creativity, that could be buffering the negative impact of parenting stress. This is an important policy implication that policy makers could utilize in enhancing and strengthening adolescent capabilities to deal with adversity and empower the young adolescent mothers.

Optimism

As regards optimism, the participants narrated that this attribute helped them in navigating the parenting stress they went through and helped them look to the future. The optimism attribute helped them remain hopeful no matter the challenges. It appeared that for many, suffering was only for a moment (while the baby was still young), that things

would get better with time. It seemed this helped them do whatever they could to help the situation knowing that it was only a passing phase. In explaining this, 19-year-old Besa reported:

Personal attributes help me concerning thoughts…I am hopeful…the baby will grow soon…its just now that I have pressure because he is small but I do not stress about it a lot…I am hopeful the future will be okay, for now because he is still small, I do think about it but it does not affect me much, he will grow older soon (Besa, participant 3).

Another participant, 19-year-old Nyambe narrated:

Strength and hope. Hmmm that is all. I know that things will change in future, what is happening now is not what will happen (Nyambe, participant 25).

These findings highlight another important protective factor emerging from this study that helped buffer the negative impact of parenting stress on the adolescent mothers' mental health. This is a unique finding and deviates away from existing literature on adolescent mothers. This has important implications for the mental health of adolescent mothers. It helps us look beyond the predominantly researched resilience factor. It indicates protective mechanisms in these participants, and they are worth exploring further. This finding is in line with studies of terminally ill patients and their caregivers in which optimism was related with other positive attitudes like self-efficacy and was found to be a protector factor against mental distress (Pearce et al., 2006).

Tolerance

As regards tolerance, some participants said tolerance helped to ignore the mockery and discrimination that society subjected them to for having a baby at a young age. It

helped them get through the ridicule they face every day. For instance, 19-year-old Ingutu indicated:

Yes. What can I say? Even among people they might be gossiping about me and saying bad things but I ignore them and just focus on my life and the future. You cannot manage whereby you hear this, you follow them and you hear that you follow them. It is just to leave them with what they are saying. They will get tired on their own. I just avoid them because even if they gossip about me they will not find any profit. My life will still be going forward (Ingutu, participant 7).

This finding highlights another important protective factor emerging from this study that might have helped buffer the negative impact of parenting stress on the adolescent mothers' mental health. Tolerance is a unique finding and deviates away from existing literature on adolescent mothers. Adolescent mothers are likely to be mocked as well as stigmatized against, and so those that might lack peer and parental support but are tolerant are likely to be protected against mental distress, as tolerance has the potential to compensate for absence of parental and peer support (Schacter & Margolin, 2019).

Tenacity

As regards tenacity, sub themes emerging were that some participants acknowledged having this attribute to keep pushing themselves forward and to remain strong and focused on their goals. For instance, 16-year-old Clara said:

…when things get tough, as a person you need to move and cannot go backwards. No, we do not give up, we just need to move forward (Clara, participant 13).

Another participant, 19-year-old Carol said:

I am just a strong person, like you just ignore and say yes things are hard but let me pretend and say even if they are not here now you just have hope that soon things will become better. So you just convince yourself in the heart and that is what makes me strong (Carol, participant 19).

Tenacity underlines another important protective factor emerging from this study that might have helped buffer the negative impact of parenting stress on the adolescent mothers' mental health. An adolescent mother who is tenacious is likely to possess other positive qualities that will enable them to engage in more adaptive coping processes thereby leading to better mental health outcomes (Fredrickson, 2001; Siu et al., 2021).

These unique protective factors (creativity, responsibility, optimism, tolerance, tenacity, perseverance, determination, hardworking, warmth,) among adolescent mothers that emerged in this study have important implications that will help to move beyond over-reliance on resilience as the only protective factor. But rather give prominence to other protective factors like creativity, responsibility, optimism, tolerance, tenacity, hardworking attributes, and perseverance. These have the potential to play an important buffering role especially in contexts where resilience is not emphasized much. Previously these factors have been overlooked and under researched, thus this research highlights the importance and urgency of exploring these protective factors further. Thus, giving a novel contribution to the adolescent motherhood mental health research.

7.5.6.8 Are there any programmes in your health centre (during postnatal/ under-five) that promote adolescent mothers' mental health?

When asked if there were any programmes in the health facilities that helped promote mental health, majority of the participants (22) reported that there were no programmes, or that they had never heard of any. Three on the other hand agreed that they knew of programmes at the health facilities that were targeting adolescents' sexual reproductive health and not necessarily mental health. For those who said there were no programmes or that they did not know of any programmes, one of the participants, 19-year-old Ingutu (pseudo name) gave the following account:

Interviewer: Are there any programmes in your health centre (during postnatal/ under-five) that promote adolescent mothers' mental health?

Ingutu: *No. there is nothing.*

Interviewer: There is totally nothing?

Ingutu: *Nothing.*

Interviewer: Have you heard about that or asked about them?

Ingutu: *I do hear but I have not paid attention.*

Interviewer: But they are there?

Ingutu: *I am not sure maybe.*

Interviewer: Have you not heard about them?

Ingutu: *I do not move about these days.*

Interviewer: Do you not hear of any programmes when you take your child for under 5?

Ingutu: *Like for Family planning?*

Interviewer: Not really for family planning, but programmes that help you adolescent mothers e.g when you are going through challenges, and you need someone to talk to or counselling?

Ingutu: *Maybe for Dreams for example.*

Interviewer: Is there anything else?

Ingutu: *No*

Interviewer: Share with me these programmes at Dreams.

Ingutu: *They teach about different things there.*

Interviewer: How does what they teach benefit you?

Ingutu: *They help us on a lot of things.*

Interviewer: Like what?

Ingutu: *Yes, like on family planning they do teach us.*

Interviewer: So they only teach on family planning, there is nothing else they teach?

Ingutu: *I have only been there once and I got tired.*

Interviewer: So what do those who go there say they teach?

Ingutu: *I do not like asking*

Another participant said that they did not know as they had never heard of any. For instance, the interview with 16-year-old Clara revealed the following:

Clara: *I do not know.*

Interviewer: Have you not asked from anyone?

Clara: *No*

Interviewer: Or have you not heard of people saying there are these programs at the clinic?

Clara: *No, I have not heard of that yet, but it is like there is nothing* (Clara, participant 13).

As regards the three participants that said yes, all of them pointed out that programmes were available such as "DREAMS (Determined, Resilient, Empowered, AIDS-Free, Mentored, and Safe women)," "Grassroots Soccer," and "CIDARZ (Centre for Infectious Disease Research in Zambia)" programmes, but that they focused on "HIV/AIDS and sexual reproductive health." One said that these programmes helped alleviate stress while two pointed out that they did not know if these programmes worked or not because one of them had only been there once, and the other one had never been there. Among the two that said that they did not know whether the programmes helped the adolescents or not, one of them, 19-year-old Mwansa's interview indicated that:

Mwansa: *I go to Mtendere clinic. Yes there are programmes but I usually do not go there. Yes anh like what they call them…what do they call it again? Anh there is this programme for young mothers and then is it called dreams I think. Anh I think there is another one called young dreams and I think there is another one like anh where they play music and the like but I do not go there.*

Interviewer: Do they help?

Mwansa: *The people I know say these programmes help them a lot.*

Interviewer: If they do help, share with me how, in what way do they help?

Mwansa: *Honestly speaking I do not go there so I do not know but I have a friend who always insists we go together but I just don't go there, she also has a baby, she comes to tell me to go with her that there are these and these programmes, but I just don't go there* (Mwansa, participant 1).

Meanwhile, 19-year-old Besa, the participant that acknowledged that the programmes were available and that even though they focused on HIV/AIDS and sexual reproductive health, they did alleviate stress to some point recounted that:

Besa: *Yes they are there*

Interviewer: Share with me these programmes.

Besa: *At the clinic there are programmes like grass roots soccer, also a programme by "CIDARZ," yes those are the ones that teach and a programme known as "DREAMS."*

Interviewer: Do they help?

Besa: *Yes, they help us because they alleviate our stress, in that they teach us how to care for our babies, so they help us, like on my end they do help me. They help me in that when you follow what they are teaching, yes when you just follow what they are teaching, for sure they help* (Besa, participant 3)

These findings suggest that as much as there were no deliberate programmes on mental health, there were still other programmes such as "DREAMS" that are aimed at reducing "HIV/AIDS in adolescent girls and young women by using approaches that went beyond health, that is, they emphasise addressing factors "(poverty, gender inequality, sexual violence, and lack of education)" that directly and indirectly put girls at risk of

contracting HIV." According to DREAMS, they try to achieve this aim by firstly, providing youth-friendly reproductive health care, and social asset building for adolescent girls and young women to empower them as well as reduce HIV risk. Secondly, by mobilizing and preparing communities for change through school and community-based HIV and violence prevention programmes. Thirdly, HIV risk reduction by engaging adolescent girls' sexual partners, and fourthly, by strengthen families with social protection and parent/caregiver programmes. Even though there are no mental health programmes, these programmes make a difference in the lives of those coming from low SES backgrounds. They alleviate stress through education subsidies and by empowering girls, young women, families, and caregivers socially and economically, thereby strengthening social asset building (Saul et al., 2018).

However, it appears (from interview excerpts above) that many adolescent girls and young women are unaware of these programmes, meaning more needs to be done to sensitize adolescents, families, and communities at large. Also, since most of these programmes are found in health facilities, adolescents might shun away from them due to one reason or another such as fear of stigmatisation, long waiting periods in public health facilities, and many other reasons. Therefore, one way of enhancing sensitization would be door to door household campaigns in the form of explaining and giving brochures that highlight the aims of the programmes and the benefits. Other forms could include involving religious leaders in churches, mosques, and other places of worship to help disseminate information. Another alternative would be holding fairs or exhibitions in public areas like markets or community halls. These may include fun activities and other incentives as a way of disseminating information to attract adolescents to hear the benefits of these programmes and assure them confidential and youth friendly services. Another way would be to reach out to parents and guardians in the community by giving

them information and persuading them to encourage their children and other dependants to take part in such programmes.

7.5.6.9 Are there any programmes in your community that promote adolescent mothers' mental health?

When asked if there were any programmes in the communities that helped promote mental health, majority of the participants (19) reported that there were no programmes, or that they had never heard of any. While six agreed that they were aware of programmes in the community that were targeting adolescents and young women and that majority were HIV/AIDS or sexual reproductive health related and not necessarily mental health. For those who said there were no programmes or that they did not know of any programmes such as 19-year-old Womba (pseudo name) narrated that:

Womba: *Not here, unless people from clinics passing through the community teaching about something and people meet there, but I am not found there.*

Interviewer: Why don't you go there?

Womba: *I just feel lazy.*

Interviewer: Do they not involve you?

Womba: *No, they do not involve me* (Womba, participant 8).

For those that said yes, 19-year-old Towela gives a narration:

Towela: *here in this community, I think at African direction they might be there*

Interviewer: Share with me these programmes. Do they help? If they do help, share with me how. If no, why do you say so?

Towela: *Ah no not in every way, why I think this ah…ok me I only went there once so what they were teaching, like other things ah, I did not hear or know, and I went late, I did not hear them teaching us anything about how to care for the baby, I was just thinking, they were teaching the "DREAMS programmes" that they like teaching those like for divine divas. So, I think they do not help much with mental health because if I remember they were advising us to use birth control (injection), do this and that if you do not want to have other children, use birth control (injection), that is the only thing I heard them teaching when I went there and to give young people condoms* (Towela, partiticpant 4).

These findings suggest that the large number of adolescent mothers who are not aware of health programmes is an indication that more needs to be done to sensitize adolescents and youth alike. Suggestions on solutions are given above in the previous section 7.5.6.8 and in the next chapter.

7.5.6.10 What kind of programmes would you love to see in your health centre that would promote adolescent mothers' mental health?

When asked the kind of programmes they wanted to see at their health facilities, one participant (19-year-old Dora) answered that:

Dora: *because we are together with adults in antenatal and postnatal, they say anything. But what I would love is where they put us according to age so that young ones can be free as many do not talk since we are together with adults and children.*

Interviewer: So there are no programs for adolescent mothers?

Dora: *No, at Chainda clinic they mix us with the older women and if they want you they will just get you and bring you in a room and see if the child is walking, testing for HIV and give you the drugs you need to take, that is all* (Dora, participant 11).

These findings suggest that adolescent mothers yearn for tailor made programmes that would suit their needs and give them a platform of their own. A platform they would feel free to share and interact with peers of their age and where they would be heard without judgment and intimidation from older women.

7.5.6.11 What kind of programmes would you love to see in your community that would promote adolescent mothers' mental health?

When asked the kind of programmes they wanted to see in their communities, one participant (18-year-old Inonge) answered that:

Maybe they can be coming and telling them about not having stress because people are found with stress even when one gets pregnant, they have stress so if they bring such programs of talking to young people, but not together with adults, mixing older and young people, no. Then you will find that some adults being told are married but there are young people who may wish to go to school, and they can be telling them that they can go to school after giving birth. Such programs are needed at the clinic or community (Inonge, participant 18).

Another participant, 17-year-old Choolwe said:

I think here they can just sponsor in terms of education that is what I would like that is all. Education and finances (Choolwe, participant 17).

Another participant, 19-year-old Mwisa indicated:

I would like them to bring programs to support them because others do not have where to get things for the baby. They need to help them look after them. Others it so happens that they have nowhere to get anything. Others are helped but others it is found that there

is nothing. I would like them to be helped also so that they have a free mind (Mwisa, participant 5).

These findings imply that this study gave a voice to the young adolescent mothers, especially those coming from disadvantaged backgrounds about the services and programmes they would love to have that could help enhance their mental wellbeing. As the findings revealed, adolescent mothers would love to see community mental health programmes that teach them about stress and how to alleviate it. Additionally, a number mentioned they would love to see programmes that help sponsor their education (the government heard this cry, as the Ministry of Education in Zambia extended the initial 'free education' policy that was initially at primary school level only, to secondary school as well, as of 20 January 2022). Thus, all adolescents now have an equal opportunity to get an education without financial struggles. Furthermore, others cried for some support with baby needs, an area that triggers parenting stress among adolescents especially those from disadvantaged backgrounds.

7.6 Conclusion

Study 3's objectives were to triangulate the findings of the first two studies by examining adolescent mothers' in-depth lived experiences of parenting stress, coping mechanisms, and mental health.

Findings in the present qualitative study revealed that participants were from low and middle SES backgrounds with majority coming from low SES backgrounds, mostly headed by single parents. Also, majority indicated lack of social support from the infant's father, suggesting increased risk for parenting stress, and mental distress. And when asked if they ever experienced parenting stress, majority of the adolescent mothers agreed and

rated their stress between moderate and high levels. As such these findings confirm results of the two quantitative studies above which indicated mean scores of 43.33 and 46.49 for the pilot and main survey respectively, confirming moderate to high levels of parenting stress among participants.

Further, findings from the current study showed that the greatest sources of parenting stress were low SES background and lack of social support from infant's father. Lack of social support from the baby's father confirms why social support was not a significant moderator in the quantitative survey above. This is because social support (concerning baby provisions) from the baby's father was considered very cardinal in this context especially among those from low SES backgrounds. With most of the adolescent mothers lacking this, social support was viewed as inadequate. Thus, these findings confirm the non-significant moderating role of social support in the quantitative survey above. At the same time, these findings place emphasis on the potential protective role of infant's father/significant other social support in buffering the effects of parenting stress on the mental health of adolescent mothers.

Additionally, findings revealed that parenting stress stimulated positive and negative thoughts, emotions, and behaviours. These included positive religious behaviours (going to church, being prayerful, reading the bible, feeling blessed), negative religious behaviours (questioning God's love, feeling neglected by God, avoiding church), rumination (sadness, regret, exclusion, neglect), mental distress (feeling depressed, anxious about how to take care of the baby, sadness, suicide ideation, isolating oneself, feelings of exclusion, agitation, paranoid thoughts), positive affect (joy/happiness, love/compassion/warmth, feeling blessed, pride, patience), parental responsibility (taking responsibility for their actions, mature selfless thoughts of caring and protecting the baby),

and other attributes like creativity, hard work, optimism, tolerance, and perseverance. These findings confirm results from the first two quantitative studies above of parenting stress predicting rumination, positive and negative religious coping, positive affect, and mental distress (depression, anxiety, tension). They also confirm a sense of parenting responsibility and other attributes (creativity, hard work, optimism, tolerance, and perseverance) in most adolescent mothers which help them navigate through the challenges. This offers support to the quantitative findings about the protective roles of positive religious coping and parental responsibility, as well as the risk roles of rumination and negative religious coping.

Furthermore, findings revealed that adolescent mothers engaged in various coping mechanisms in response to the parenting stress. The most popular forms of coping were positive religious coping (reading the bible, praying, attending church), negative religious coping (wondering why God had abandoned them, or if God loves them, why he allowed them to get pregnant at a tender age), rumination (concentrating on the consequences of adolescent motherhood, future of their education), parental responsibility (taking responsibility for their actions, mature selfless thoughts and acts of caring and protecting the baby), other personal attributes (creativity, hard work, optimism, tolerance, courage, and perseverance), and social support (turning to friends for emotional support, and turning to mothers or guardians for tangible financial and physical support).

These findings confirm the coping mechanisms of positive and negative religious coping in the quantitative studies above. They confirm that some adolescent mothers turn to God and religion to cope with their stress, while others turn away from God on the pretext that he does not love them or has abandoned them. They also confirm that others resort to rumination as a way of coping. They dwell so much on how they will take care

of the baby they brought into this world, and the future of their education, without actively looking for solutions. These confirm the positive impact of positive religious coping, and the negative impacts of negative religious coping and rumination. Also, the qualitative findings on parental responsibility confirm its buffering effects on rumination in the quantitative studies above. Taking responsibility as observed above shows that it weakens the negative effects of rumination. Likewise, lack of mention of resilience but instead the mention of other personal attributes confirms the non-significant moderation effects of resilience in the quantitative studies above. Qualitative findings suggest that resilience may not be emphasised much in this culture, but instead other personal attributes mentioned above take more recognition and are more pronounced. More so, lack of support from the infant's father confirms the non-significant effects of social support, in that infant's father social support was considered most cardinal by most participants.

Hence, even though friends were crucial for emotional support, they could only do so much (emotional support). Adolescent mothers looked to parents/family and infant's father/significant other (of which many reported absent partners) for provisions of baby supplies. Of which support with baby needs, from the baby's father, was most desired. This underscores the potential protective role of baby's father social support. Thus, in terms of social support, the support from parents/family, friends, and significant other are all important, but in this case, because of the presence of the baby, emphasis was more on infant's father/significant other support. Thus, future research and interventions could focus on getting the young fathers to support their babies to alleviate stress on the young mothers, and to encourage their families to help with baby support in situations where he (baby's father) is incapable. This has enormous potential as a protective role in the parenting stress-mental health relationship of adolescent mothers.

Overall, the results of the qualitative study support the findings of the two quantitative studies above by showing that religious (positive and negative) coping and rumination are coping mechanisms that adolescent mothers engage when faced with parenting stress, and that these affect their mental health outcomes. Also, the results confirm the significant moderating role of parental responsibility, and the non-significant moderating roles of resilience and social support found in the quantitative studies above. The findings revealed that instead of resilience, the adolescent mothers in this culture might be more predisposed to cultivating and possessing other personal attributes like creativity, optimism, tolerance, and perseverance. Also, that in terms of social support, infant's father social support is considered cardinal. These findings thus triangulate the findings in the first two quantitative studies concerning the psychological mechanisms playing mediating and moderating roles in the relationship between parenting stress and mental health (positive affect and mental distress) of adolescent mothers.

Lastly, apart from triangulating findings of the quantitative studies, these findings suggest that adolescent mothers yearn for mental health programmes that teach them about stress and how to alleviate it. Additionally, they desire tailor made antenatal and postnatal programmes that would suit their needs and give them a platform of their own. A platform they would feel free to share and interact with peers of their age and where they would be heard without judgment and intimidation from older women. Additionally, a number mentioned they would love to see programmes that help sponsor their education (the government heard this cry, the Ministry of Education in Zambia extended the initial 'free education' policy that was at primary school level only, to secondary school as well, as of 20 January 2022). Thus, all adolescents now have an equal opportunity to get an education without financial struggles. The onus now is on parents/guardians as well as the adolescent mothers themselves to ensure they return to school. Furthermore, others

cried for some support with baby needs, an area that triggers parenting stress among adolescents especially those from disadvantaged backgrounds.

Furthermore, these findings suggest that even though there were no deliberate mental health programmes, there were still sexual reproductive health as well as empowerment programmes like ‘DREAMS.’ However, many adolescent mothers were unaware of these programmes in the hospitals and communities indicating that more needs to be done to sensitize adolescents and youth alike. The sexual reproductive health programmes have the power to reduce adolescent motherhood altogether if they can only reach the target audience. This would be the best solution as it would also tackle the parenting stress – mental health problems from the root cause by preventing teenage pregnancy altogether.

CHAPTER 8: SUMMARY OF STUDY FINDINGS, CONTRIBUTIONS, IMPLICATIONS AND CONCLUSIONS

8.1 Introduction

This section gives a summary of this research project by beginning with a recap of findings of study one, two, and three. This is followed by theoretical and methodological contributions, then policy and practical implications, limitations and future directions, and finally conclusion.

8.2 Study one (pilot study)

Research findings in study one revealed satisfactory factor structures as examined by confirmatory factor analysis. Although the fit indices were satisfactory, loadings of some items or first order factors were low (ranging between .15 and .94). The sample size of the pilot study was small. Thus, the factor structures of the scales were examined further in the main survey. Internal consistency of the scales was acceptable, ranging from .66 to .96.

Additionally, Pearson correlations revealed that adolescent mothers who had reported high parenting stress were likely to exhibit lower levels of social support, higher usage of negative religious coping, lower levels of positive affect, and higher depressive and anxiety symptoms. However, no association was found between parenting stress and parental responsibility, resilience, positive religious coping, rumination, and tension, even though the directions of the relationships were as expected. Associations were examined further in the main survey.

Thus, even though most psychometric properties were satisfactory, others were not, due to the small sample size of the pilot. Therefore, all psychometric properties of the scales were examined further in the main survey.

8.3 Study two (main survey)

Research findings for study two revealed that the parenting stress - mental health (positive affect, and mental distress) relationship was mediated by positive and negative religious coping, and rumination. And that the mediational effects of rumination on positive affect were moderated by parental responsibility. However, resilience and social support were not significant moderators.

Study two contributes and advances our understanding of the adolescent mothers' parenting stress - mental health discourse by demonstrating through moderated mediational relations that positive religious coping and parental responsibility are crucial factors for better mental health outcomes, especially in those from low SES backgrounds. The impact of parenting stress on adolescent mothers' mental health might be more damaging in the absence of mediational effects of positive religious coping, and without parental responsibility moderating the mediational effects of rumination on positive affect.

Additionally, study two underscores the significance of positive religious coping and parental responsibility in promoting adolescent mothers' mental health. Specifically, they are vital in increasing positive affect, and reducing mental distress. Thus, positive religious coping, and parental responsibility are protective resources which can be referred to as parenting stress threat absorber medium (mediator), and buffer (moderator), respectively.

Furthermore, the study demonstrates that rumination and negative religious coping on the other hand are maladaptive and risk factors in the parenting stress - mental health (positive affect, and mental distress) relationship. They are detrimental and are associated with lower positive affect and higher mental distress. Thus, rumination and negative religious coping are risk mediums (mediators) that should be discouraged.

More so, findings in this study differ in part from other studies especially those done

in more wealthier countries, in that this study moved away from the typical investigation of direct effects of parenting stress on adolescent mother's depression, to investigating the pathways through which parenting stress affects the mental health of adolescent mothers using a moderated mediation model. The study has theoretical, policy, and practical implications for health, education, and community contexts. Efforts and future interventions should be aimed at deliberately increasing the use of positive religious coping, and parental responsibility. This is because of their protective mechanisms in the mental health of adolescent mothers regardless of the magnitude of parenting stress, such that even amid increased parenting stress and poorest economic conditions, the influence of positive religious coping on mental health remains vital. And even in the presence of rumination, the buffering mechanisms of parental responsibility supersede the risks.

Likewise, efforts and future interventions should focus on reducing rumination and negative religious coping in adolescent mothers, especially those from disadvantaged backgrounds in LMICs. This is because adolescent mothers from poorer backgrounds have a greater chance of suffering from mental distress than their counterparts from wealthier backgrounds. Moreover, promoting positive mental health outcomes while preventing negative mental health outcomes in adolescent mothers would translate into promising futures for themselves, their infants, families, communities, and nations at large.

8.4 Study three (qualitative study)

Findings in the present qualitative study revealed that majority of participants came from low SES backgrounds, suggesting increased risk for parenting stress, and mental distress. Additionally, findings revealed that majority of the adolescent mothers rated their parenting stress from moderate to high. As such these findings confirm results of the

first two quantitative studies which indicated moderate to elevated levels of parenting stress among participants. Furthermore, findings from the qualitative study revealed that the greatest sources of parenting stress were low SES background and lack of social support from infant's father. Lack of social support from the baby's father confirms why social support was not a significant moderator in the quantitative survey above. This is because social support from the baby's father was considered very cardinal in this context and its absence impacted the adolescent mothers negatively. Hence, these findings place emphasis on the potential protective role of infant's father/significant other social support in buffering the effects of parenting stress on the mental health of adolescent mothers.

Additionally, qualitative findings revealed that parenting stress stimulated positive and negative thoughts, emotions, and behaviours. These included positive religious behaviours (attending church, prayerfulness), negative religious behaviours (questioning God's love, feeling neglected by God), rumination (sadness, regret), mental distress (depressive symptoms, anxiety, isolating oneself), positive affect (joy/happiness, love/compassion), parental responsibility (taking responsibility for their actions, caring and protecting the baby), and other attributes like creativity, hard work, optimism, tolerance, and perseverance. These findings confirm results from the first two quantitative studies above of parenting stress predicting rumination, positive and negative religious coping, positive affect, and mental distress (depression, anxiety, tension). They also confirm a sense of parental responsibility and other attributes (creativity, hard work, optimism, tolerance, and perseverance) in most adolescent mothers. Thus, the results offer support to the quantitative findings about the protective roles of positive religious coping and parental responsibility, as well as the risk roles of rumination and negative religious coping.

Furthermore, findings revealed that adolescent mothers engaged in various coping mechanisms in response to the parenting stress. The most popular forms of coping were positive religious coping, negative religious coping, rumination, parental responsibility, other personal attributes (e.g., creativity), and social support (turning to friends for emotional support and turning to mothers or guardians for tangible financial and physical support). Thus, these findings confirm the coping mechanisms of religious coping (positive and negative) and rumination as mediators in the quantitative studies above. They confirm that some adolescent mothers turn to God and religion to cope with their stress, while others turn away from God on the pretext that he does not love them or has abandoned them. They also confirm that others resort to rumination as a way of coping. Dwelling so much on how they will take care of the baby, and the future of their education, without actively looking for solutions. These confirm the positive impact of positive religious coping, and the negative impacts of negative religious coping and rumination.

Also, the qualitative findings on parental responsibility confirm its buffering effects on rumination in the quantitative studies above. Taking responsibility as observed above shows that it weakens the negative effects of rumination. Likewise, lack of mention of resilience but instead the mention of other personal attributes confirms the non-significant moderation effects of resilience in the quantitative studies above. Qualitative findings suggest that resilience may not be emphasised much in this culture, but instead other personal attributes mentioned above take more recognition and are more pronounced. More so, lack of support from the infant's father confirms the non-significant effects of social support, in that infant's father social support was considered most cardinal by most participants.

Hence, even though friends were crucial for emotional support, adolescent mothers looked to parents/family and infant's father/significant other (of which many reported absent baby fathers) for provisions of baby supplies. Of which support with baby needs, from the baby's father, was most desired. This underscores the potential protective role of baby's father social support. Thus, while support from family and friends are all important, emphasis was more on infant's father/significant other support because of the presence of the baby. Therefore, future research and interventions could focus on getting the young fathers to support their babies to alleviate stress on the young mothers, and to encourage their families to help with baby support in situations where he (baby's father) is incapable. This has enormous potential as a protective role in the parenting stress-mental health relationship of adolescent mothers.

Overall, the results of the qualitative study support the findings of the two quantitative studies above by showing that religious (positive and negative) coping and rumination are coping mechanisms that adolescent mothers engage in when faced with parenting stress, and that these affect their mental health outcomes, thus confirming their mediating effects. Also, the results confirm the significant moderating role of parental responsibility, and the non-significant moderating roles of resilience and social support found in the quantitative studies above. The findings revealed that instead of resilience, the adolescent mothers in this culture might be more predisposed to cultivating and possessing other personal attributes like creativity, optimism, tolerance, and perseverance. Also, that in terms of social support, infant's father social support is considered cardinal. These findings thus triangulate the findings in the first two quantitative studies concerning the psychological mechanisms playing mediating and moderating roles in the relationship between parenting stress and mental health (positive affect and mental distress) of adolescent mothers.

Lastly, apart from triangulating findings of the quantitative studies, these findings suggest that adolescent mothers yearn for mental health programmes that teach them how to alleviate stress. And they desire tailor made antenatal and postnatal programmes. Additionally, they called for programmes that help sponsor their education (the government heard this cry, the Ministry of Education in Zambia extended the initial 'free education' policy that was at primary school level only, to secondary school as well, as of 20 January 2022). Furthermore, many cried for some support with baby needs, an area that triggers parenting stress among adolescents especially those from disadvantaged backgrounds. Also, even though there were no deliberate mental health programmes, there were still sexual reproductive health as well as empowerment programmes like 'DREAMS.' However, many adolescent mothers were unaware of these programmes indicating need for more sensitization. The sexual reproductive health programmes have the power to reduce adolescent motherhood altogether if they can only reach the target audience. This would be the best solution as it would also tackle the parenting stress – mental health problems from the root cause by preventing teenage pregnancy altogether.

8.5 Contributions/ Strengths

The present study makes the following significant theoretical and practical contributions: First, this project went beyond the previous predominant focus on the direct effects of parenting stress on the mental health of adolescent mothers, to investigating the psychological mechanisms underlying this relationship. Thus, this project contributes new mediums (positive and negative religious coping, and rumination) and factors (parental responsibility, creativity, optimism, tolerance, perseverance, and social support) through which parenting stress affects the mental health of adolescent mothers. Consequently, setting pace for other researchers.

Second, this project demonstrates unique protective factors (positive religious coping, parental responsibility, creativity, optimism, tolerance, perseverance, and baby's father social support) for adolescent mothers' mental health that could be useful even among the most vulnerable. It also warns of the adverse effects of negative religious coping and rumination as risk factors in the adolescent mothers' parenting stress - mental health relationship.

Third, this project accentuates the protective role of positive religious coping (one of the major findings) as a stress/threat absorber medium (mediator) for adolescent mothers regardless of the magnitude of parenting stress, such that even amid increased parenting stress and poorest economic conditions, the influence of positive religious coping on mental health remains crucial. Therefore, this finding underlines the importance of promoting this protective factor especially in vulnerable adolescent mothers to increase positive affect and reduce mental distress. Thus, this study contributes a new important medium to the adolescent mother mental health discourse.

Fourth, this project underscores the protective role of parental responsibility, another major finding of this study. Parental responsibility proved to be a significant buffer against the effects of parenting stress and maladaptive coping strategies on the mental health of adolescent mothers. This finding highlights the protective role of parental responsibility in the mental health of adolescent mothers, no matter how poor. It is important to note that this effect remained significant even after controlling for the effect of participants' age, which was positively associated with parental responsibility. This confirms that even without the joint influence of age, it remains a significant protective factor. However, it is important to note that the positive association with age suggests that the protective effect of parental responsibility could be stronger in older adolescent

mothers compared to younger ones. Therefore, this finding emphasizes the importance of cultivating this protective factor especially in younger adolescent mothers to protector them from effects of parenting stress and other adversity. Thus, this study contributes a new important asset to the adolescent mother mental health discourse.

Fifth, the preceding contributions were made possible through a moderated mediation model. This is another significant contribution of this study in that it highlights the power of moderated mediation in disentangling the interplay among psychological mechanisms in the parenting stress - mental health relationship. Moderated mediation illustrates the buffering role of parental responsibility in the indirect effects of parenting stress through rumination on mental health of adolescent mothers. Thereby highlighting new mediums and factors through which parenting stress affects the mental health of adolescent mothers.

Sixth, employing a mixed method approach contributed more robust findings to this discourse by creating an opportunity for the third study to triangulate findings from study one and two through an analysis of in-depth lived experiences of adolescent mothers. This permitted me to cater for the short falls of the first two studies, by allowing me to also hear the adolescent mothers' personal strengths, perceived home environment, perceived social support and how they cope with parenting stress. This revealed that resilience may not be as emphasized as other personal attributes like creativity, optimism, tolerance, and perseverance, hence the non-significance in the quantitative findings. Also, that infant's father social support was most cardinal, but that it was missing, hence the non-significance in the quantitative findings. Thus, giving us a better understanding of the adolescent mothers' parenting stress - mental health relationship.

Seventh, concurrent examination of concepts (positive and negative religious coping,

rumination, resilience, parental responsibility, and social support) in one model gave me an opportunity to assess unique and joint influences of the psychological mechanisms (positive and negative religious coping, and rumination) to clearly establish how much proportion of the effect of parenting stress on mental health was accounted for individually and jointly. This helped to know which one had stronger influences on the mental health of adolescent mothers, as well as their overall combined efforts.

Eighth, the project also bridges service gaps by informing that through the qualitative study, that adolescent mothers yearn for mental health programs that teach them how to alleviate stress. And they desire tailor made antenatal and postnatal programs. Additionally, they called for programs that help sponsor their education (which was answered, the Ministry of Education in Zambia extended 'free education' policy up to secondary level, as of 20 January 2022). Also, even though sexual reproductive health as well as empowerment programs like 'DREAMS' exist, many adolescent mothers were unaware of these programs indicating need for more sensitization. The sexual reproductive health programs have the power to reduce adolescent motherhood altogether if they can only reach the target audience. This would be the best solution as it would also tackle the parenting stress – mental health problems from the root cause by preventing teenage pregnancy altogether.

Nineth, this project helped enrich the Lazarus and Folkman's stress and coping model by including more pathways to the stress-coping-outcome transaction of adolescent mothers, setting the pace for other researchers and health practitioners around the world including contexts with harsher conditions, in the bid to promote mental health of adolescent mothers.

Lastly, this project contributes LMICs-Zambia context to the predominantly Western

and Wealthier countries dominated literature.

8.6 Implications

The present study reveals several theoretical, policy, and practical implications. First, the enriched "Lazarus and Folkman's stress and coping model" in this study sets pace for use by other researchers even among the poorest, to cushion the adverse effects of parenting stress.

Second, this study accentuates the urgency for researchers to focus more on interventions aimed at deliberately increasing the use of positive religious coping, cultivating ideal levels of parental responsibility, increasing social support (especially infant's father/significant other support), and personal attributes like creativity, optimism, tolerance, and perseverance, especially in adolescent mothers from disadvantaged backgrounds in LMICs. For instance, researchers could devise interventions to cultivate greater use of religious coping such as "seeking a stronger connection in God" or "putting plans into action together with God." Similarly, researchers could devise interventions to increase parental responsibility among adolescent mothers to ideal levels, as this is a crucial protective factor. Also, researchers could increase significant other social support by devising interventions to get young fathers to support their babies as a way of alleviating parenting stress on the young mothers, and to encourage their (babies' fathers') families to help with baby support in situations where he (baby's father) is incapable. This has an enormous potential protective role in the parenting stress-mental health relationship. Likewise, devise interventions to discourage negative religious activities such as doubting God's love and power, as well as discouraging rumination tendencies.

Third, this project recognises the need for adolescent mental health policy

formulation, that will lay foundation for devising the much-needed tailor-made programmes for adolescent mothers as evidenced from findings of this study. There is need for mental health screening programmes during antenatal and post-natal visits for adolescent mothers for early detection and management of mental health problems. There is also need for mental health practitioners and health workers in general to attend to adolescent mothers separately from adult women. Combined with cultivation and incorporation of positive religious resources, social resources (such as bringing parents, families, and infant's fathers on board), and personal attributes in mental health strategies targeted towards adolescent mothers.

Fourth, this project acknowledges the need for mental health awareness and prevention programmes to disseminate information about the nature, risk factors for mental health problems, protective factors, prevention, and management of mental health. And these could be scaled up through sensitization efforts like campaigns. This is because current findings exposed loopholes in sensitization mechanisms. For instance, presently, many adolescent mothers are unaware of existing health programmes, be it sexual reproductive health related, or others. Thus, these findings act as a basis for formulation of deliberate mental health programmes for adolescent mothers in the health centres and communities alike, to help them sail through this journey to a normal adulthood with lower risks of developing depression or other mental health problems.

Fifth, findings from this study underline the need for the education sector to appreciate adolescent mothers' family, religious, social, and personal attributes when devising strategies to provide further support for them in school settings. Education policy formulators could promote and incorporate protective mechanisms such as positive religious coping, parental responsibility, social support, personal attributes (creativity,

optimism, tolerance, and perseverance) in adolescent mothers' 'back to school programmes' and develop other mental health support systems and enhancement programmes in schools. There is also need for them to encourage any young fathers still in the education system to contribute to provisions of baby needs as a way of alleviating parenting stress of adolescent mothers, especially those from low affluent families.

Sixth, this study underscores the importance of social support especially significant other (or infant's father) support, and as such community leaders and local government officials could work with law enforcement departments to come up with laws that compel infants' fathers who refuse paternity of the baby and subsequently deny responsibility or contributing to baby needs, to undergo free Deoxyribonucleic acid (DNA) tests to ascertain paternity and order them to pay for child support. This is one major way to help adolescent mothers get the much-needed help with baby provisions to prevent parenting stress, in turn preventing mental health problems.

Seventh, this study highlights the need for families (adolescent mother's side, and the baby's father's side) to mobilize social support for the young mothers especially in providing for the baby needs. In as much as child marriages are discouraged, support should still be rendered by the family of the infant's father (if he is unable) to ensure that stress is alleviated from the adolescent mother. Thus, strengthening joint family support for adolescent mothers and their children to help promote good mental health among the young mothers.

Eighth, parents should give their adolescent daughters social support especially in this new parenting role as this acts as a protective factor, not only for the current mental health status but also the future. Also, families should emphasize the importance of parental responsibility among adolescent mothers, as this is a crucial protective factor.

Moreover, parents are also urged to encourage their adolescents to cultivate a stronger connection with God and discourage negative religious activities such as doubting God's love and power, as well as discouraging rumination tendencies.

Nineth, as the Ministry of Education in Zambia extended 'free education' policy up to secondary school level, as of 20 January 2022). The onus now remains on the parents/guardians to send their adolescent girls back to school. As well as the adolescent mothers themselves to return to school and complete their education. Also, non-pregnant and non-parenting adolescent girls should be sent to school, to avoid teenage pregnancy altogether. To this effect, the government could devise mandatory school laws to compel parents/guardians to send their girls to school, failure to which they are prosecuted if found wanting.

Tenth, even though sexual reproductive health as well as empowerment programmes like 'DREAMS' exist, there is need for more sensitization as many adolescent mothers were unaware of these programmes. Also, there is need to make them user friendly as many adolescent mothers also choose to shun away because they feel judged. The sexual reproductive health programmes have the power to reduce adolescent motherhood altogether if they can only reach the target audience, hence need to scale up sensitization. This would be the best solution as it would also tackle the parenting stress – mental health problems from the root cause by preventing teenage pregnancy altogether.

Eleventh, there is need to scale up sensitization for empowerment programmes such as 'DREAMS' that help financially empower young girls and women. This will help to prevent parenting stress in adolescent mothers, and importantly prevent teenage pregnancies in non-pregnant and non-parenting adolescents as parents/guardians will be able to provide for their families, in a way preventing young girls from engaging in vices

that put them at risk for teenage pregnancies. Additionally, there is need for government to devise more of such programmes to target masses so that young girls and women are protected from risky vices that promote unwanted pregnancies.

Thus, this project also helps to bridge mental health service gaps in LMIC-Zambia.

8.7 Limitations and future directions

Even though this research project provides several theoretical, practical and policy contributions, as well as strengths, it was not without limitations and thus findings ought to be interpreted along with appreciation of the following:

First, the first two studies were cross-sectional in nature and as such were unable to infer causality links among variables of interest. Thus, future studies could endeavor to employ more robust designs like longitudinal designs, experimental methods, or intervention-based designs to help infer causality. Future interventions could focus on increasing the use of positive coping resources and lower the usage of negative coping resources among adolescent mothers. Most importantly, interventions could focus on preventing parenting stress by empowering young mothers and their families. Also, future interventions could focus on prevention of teenage pregnancy altogether as the rates are still high in this country. This could be done by scaling up sensitization of sexual reproductive health services. As well as interventions that push for laws and programmes that compel parents/guardians to send all children and adolescents to school in the bid to prevent teenage pregnancies altogether.

Second, even though the qualitative study gave as an opportunity to hear the lived experiences of adolescent mothers, it was limited in that it only gave us the adolescent

mothers' narrative. Thus, further research could do well to include interviews for significant others too, to collect their views on their efforts engaged in (if any) to support the adolescent mothers and their babies. Additionally, future research could also consider interviewing adolescent mothers' parents or guardians, the infant's father's family, community leaders, and gate keepers from relevant departments and organizations on their perspectives, efforts, and best ways to help adolescent mothers. As opposed to just learning about their operations and supposed programmes through document review.

Third, majority of participants in this research project were from low socioeconomic status backgrounds. It is therefore not clear how their experiences would differ from those coming from high socioeconomic status backgrounds. Moreover, participants were all sampled from an urban region of Zambia. In as much as Lusaka has a diverse population being the capital city of Zambia, sampling adolescent mothers from rural Zambia also, would have accorded me a chance to hear their experiences. Also, the sample was from one province only, drawing participants from all ten provinces of Zambia would have offered a wider base for comparisons of coping resources employed. Therefore, forthcoming research work could consider sampling from high SES backgrounds, rural areas, as well as from other nine provinces of Zambia too.

Fourth, study two only found one significant moderator which was parental responsibility, but unfortunately did not find any with resilience and social support. Further studies may consider developing context specific measures. For instance, since measures of social support used in this project captured perceived support (significant other, family and friends), they may be incomprehensive because perceived support may differ from actual support received. This is because it is possible for a young mother to rate their family support as low if the family does not meet all baby needs, regardless of

the financial, emotional, or physical (childcare) support rendered. Also, it is possible that the significant other may be different from the infant's father, hence specific measures differentiating the two could be better. Thus, if possible, future measures could further petition the scales into emotional, financial, and physical social support to capture the diverse types of social support received, and from whom.

Fifth, the current study only included few positive psychological constructs (positive religious coping, social support, resilience, and parental responsibility). Future studies may consider investigating more positive constructs to assess their mediating or moderating roles in the effect of parenting stress on adolescent mothers' mental health outcomes. Moreover, future research could also investigate the moderating role of the infant's father's parental responsibility in the parenting stress-mental health outcomes of adolescent mothers.

Sixth, since other major findings of this study were through qualitative study only, which makes it difficult to control for other variables, future studies may also need to examine these concepts (creativity, optimism, tolerance, perseverance) quantitatively to control for factors that could be influencing their effects.

8.8 Conclusion

Taken together findings from this project showcase dynamics in the psychological mechanisms employed by adolescent mothers. The findings give an insight into the undercurrents of religious practices, coping strategies, personal attributes, and social support of adolescent mothers. They also underline the independent and combined influences of positive and negative religious coping, rumination, parental responsibility, social support, creativity, optimism, tolerance, and perseverance in the lives of adolescent

mothers. Even though friends remain the adolescent mothers preferred or go-to for emotional support, mothers and other family members continue to offer the most tangible social support, and that infant's father (significant other) social support could compliment these efforts. This is because the current project revealed links between parenting stress and lack of infant's father (significant other) social support. Moreover, our findings suggest that infant's father (significant other) social support has potential protective factors especially for adolescent mothers lacking parental or familial support.

Additionally, findings show that positive religious coping, and parental responsibility are protective resources which can be referred to as parenting stress threat absorber medium (mediator), and buffer (moderator), respectively. They are vital in promoting adolescent mother's positive mental health. Specifically, high parental responsibility is critical in increasing the positive affect of adolescent mothers even in conditions of increased rumination. Furthermore, the study demonstrates that rumination and negative religious coping on the other hand are maladaptive and risk factors in the parenting stress - mental health (positive affect, and mental distress) relationship, which should be discouraged in adolescent mothers.

Thus, positive religious coping, parental responsibility, social support, creativity, optimism, tolerance, and perseverance play protective roles for adolescent mothers' mental health. The findings offer theoretical, practical, and policy implications for adolescent mothers' mental health especially in LMICs and beyond.

Appendix 1: Informed Consent Forms - Quantitative Studies (English Version)

Principle Investigator - Kalunga Cindy Nakazwe, PhD Student

Organisation - Lingnan University, Hong Kong

Sponsor – Research Grants Council, Hong Kong

This Informed Consent Form has two parts:

- Information Sheet (to share information about the study with you)
- Certificate of consent (for signatures if you choose to participate)

You will be given a copy of the full Informed Consent Form

Part I: Information Sheet

Introduction

I am Kalunga Cindy Nakazwe, a PhD student at Lingnan University in Hong Kong, I am doing research on the mental health of adolescent mothers. The act of young girls becoming mothers at an early age is very common in this country and in this city. I am going to give you information and invite you to be part of this research. You do not have to decide today whether you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research.

This consent form may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you still have questions later, feel free to ask me.

Purpose of the research

Adolescent motherhood usually comes with high parenting stress which puts young mothers at risk of mental health problems. Mental health problems can have adverse effects on the adolescent mothers. We want to find ways of protecting adolescent mothers from mental health problems. We believe that you can help us by participating in this study and filling in the questionnaire. We want to learn about the parenting stress of Zambian adolescent mothers and its relationship with mental health. We want to learn ways in which parenting stress affects adolescent mothers and learn about the different ways that they use to cope with the stress. We also want to know about the girls' personal and environmental strengths because this knowledge might help us to learn ways of helping these adolescent mothers not to develop mental health problems.

Type of Research

This research will involve you filling in a questionnaire that will take approximately 45 minutes.

Participant Selection

You are being invited to take part in this research because we feel that your experience as a young mother can contribute much to our understanding and knowledge of parenting stress, coping mechanisms and mental health.

Voluntary Participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. If you choose not to participate, all the services you receive at this Centre will continue and nothing will change.

Procedures

We are asking you to help us learn more about the effects of parenting stress on the mental health of adolescent mothers. We are inviting you to take part in this research project. If you accept, you will be asked to fill in a survey questionnaire that will last approximately between 45 minutes.

The survey you will fill out will be provided by myself or any of the two research assistants and collected by myself or any of the two research assistants. It will be distributed or given to you at the center (public hospital/clinic, Ngo, or safe mothers' shelter) after your postnatal visit. After wards it will be collected back. You may answer the survey yourself, or it can be read to you and you can say out loud the answer you want me to write down.

If you do not wish to answer any of the questions included in the survey, you may skip them and move on to the next question. The information recorded is confidential, your name is not being included on the forms, only a number will identify you, and no one else except myself or any of the two research assistants with access to the information will have access to your survey.

Duration

The research takes place over 4 months in total. During that time, we will invite you twice to take part in the survey at a three month interval and each survey will take about 45 minutes to fill in.

Uses of information

The information we shall get from you will be used to help make decisions at policy, ministry, community, family, and individual level, not only in your community, but other communities too on how best we could prevent mental health problems in adolescent mothers.

Risks

There is a risk that you may share some personal or confidential information by chance, or that you may feel uncomfortable talking about some of the topics. However, we do not wish for this to happen. You do not have to answer any question or take part in the survey if you feel the question(s) are too personal or if talking about them makes you uncomfortable.

Benefits

There may be no immediate direct benefits to you, but your participation is likely to help us find out more about how to prevent mental health problems in adolescent mothers in our society.

Which could lead the government to come up with deliberate policies and programmes that could help adolescent mothers, of which they are lacking now.

Reimbursements

You will not be provided any incentive to take part in the research, we are so grateful that you could spare some time to participate in this study.

Confidentiality

This research is being done in this center, which is situated in your community, and so may draw attention and if you participate you may be asked questions by other people in the community. We will not be sharing information about you to anyone outside of the research team. The information that we collect from this research project will be kept private. Any information about you will have a number on it instead of your name. Only the researchers will know what your number is and we will lock that information up with a lock and key (all electronic information will be stored in a password protected folder on the computer). It will not be shared with or given to anyone except myself, the other two research assistants, my supervisors, and your clinician if need arises.

Sharing the Results

Nothing that you tell us today will be shared with anybody outside the research team, and nothing will be attributed to you by name. The knowledge that we get from this research will be shared more broadly, through publications, conferences and policy recommendations.

Right to Refuse or Withdraw

You do not have to take part in this research if you do not wish to do so and choosing to participate will not affect the services you receive from this center in any way. You may stop participating in the survey at any time that you wish without the services being affected. I will give you an opportunity at the end of the survey to review your remarks, and you can ask to modify your responses.

Do you know that you do not have to take part in this study if you do not wish to? You can say No if you wish to? Do you know that you can ask me questions later if you wish to? Do you know that I have given the contact details of the person who can give you more information about the study? You can ask me any more questions about any part of the research study if you wish to. Do you have any questions?

Who to Contact

If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact the following:

Kalunga Cindy Nakazwe,
E-mail: kalungacindynakazwe@ln.hk or
kalungacindynakazwe@yahoo.com

This proposal has been reviewed and approved by TDRC Ethics Review Committee which is a committee whose task is to make sure that research participants are protected from harm. If you wish to find about more about the IRB, contact:

The Secretary
TDRC Ethics Review Committee
Tropic Diseases Research Centre
P.O Box 71769
Ndola, Zambia
Email: Tdrc-ethics@tdrc.org.com
Mobile: +260 950 701190
+260 955 425176

This research has also been reviewed by a primary ethics committee at Lingnan University in Hong Kong where the researcher is studying. The following are the details of the researcher's supervisor:

Professor. Barbara Lo
Department of Applied Psychology,
Faculty of Social Sciences,
Lingnan University,
8 Castle Peak Road, Tuen Mun,
N. T, Hong Kong.
Email: barbaralo@ln.edu.hk

"Approval to conduct this research has been provided by TDRC IRB in accordance with its ethics review and approval procedures. Any person considering participation in this research project, or agreeing to participate, may raise any questions or issues with the researchers at any time.

In addition, if you are/ or any person is not satisfied with the response of the researchers, you may raise ethical issues or concerns, and may make any complaints about this research project by contacting TDRC IRB on the address stated above.

All research participants are entitled to retain a copy of any Participant Information Form and/or Participant Consent Form relating to this research project."

Part II: Certificate of Informed Consent

You are invited to participate in a research study conducted by Kalunga Cindy Nakazwe, a PhD student in the Department of Applied Psychology at Lingnan University in Hong Kong. The purpose of the study is to examine the role of coping mechanisms in the relationship between parenting stress and mental health of adolescent mothers in Zambia. This is to inform policy, which in turn will stimulate government and other stake holders to develop programmes that will promote the mental health of adolescent mothers. This survey will take approximately 45 minutes.

I have been invited to participate in research about parenting stress and mental health in adolescent mothers.

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked to have been answered to my satisfaction. I consent voluntarily to be a participant in this study. All the information I will give out will be used for research purposes only and that it will be kept confidential. By signing below, I acknowledge that I am 18years or older.

Print Name of Participant_____

Signature of Participant _____

Date _____

Day/month/year

If illiterate *

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

***A literate witness must sign (if possible, this person should be selected by the participant and should have no connection to the research team). Participants who are illiterate should include their thumb print as well.

Print name of witness_____ **Thumb print of participant**

Signature of witness _____

Date _____

Day/month/year

If vulnerable or incapacitated like pregnant women, children, people with mental illness, people with disabilities, prisoners and minority groups form instance, the investigator must ensure that there is a well-educated and motivated surrogate or proxy decision maker. When

comprehension is an issue the research plan should include means of testing the participants' understanding of the important information prior to enrollment.

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this ICF has been provided to the participant.

Print Name of Researcher/person taking the consent_____

Signature of Researcher /person taking the consent_____

Date _____

Day/month/year

CONTACTS FOR QUESTIONS

Principal Investigator

Names: Kalunga Cindy Nakazwe
E mail: kalungacindynakazwe@ln.hk or
kalungacindynakazwe@yahoo.com

Minor Assent Form

We are doing a research study about the role of coping mechanisms in the relationship between parenting stress and mental health of adolescent mothers. A research study is a way to learn more about people. If you decide that you want to be part of this study, you will be asked to fill in a survey that will take about 45 minutes.

You do not have to be in this study if you do not want to be. If you decide to stop after we begin, that's okay too. Your parent(s)/guardian(s) know about the study too.

If you decide you want to be in this study, please sign your name.

I, _____, want to be in this research study.

_____ _____

(Sign your name here) (Date)

Appendix 2: Informed Consent Forms - Quantitative Studies (CiNyanja Version)

Chivomelezo kwa azimai achicepele otengapo mbali mu research

Ofufuza wamkulu - Kalunga Cindy Nakazwe, PhD Student

Bungwe- Lingnan University, Hong Kong

Opeleka thandizo – Research Grants Council, Hong Kong

Chivomelezo cili ndi mbali ziwiri

- Information Sheet (kugawana ndi inu za nkhani za study)
- Certificate of consent (poyika signature ngati mwavomela kutengamo mbali)

Muzapatsiwa copy ya form ya chivomerezo

Part I: Information Sheet

Kuzidziwitsa

Ndine Kalunga Cindy Nakazwe, ndikuchita maphunziro a pamwamba a PHD pa sukulu ya

Lingnan University ku Hong Kong, ndikucita kafukufuku pa za umoyo wa azimai achicepele makamaka pa za maganizo awo. Zili zowanda kupeza atsikana acicepele akukhala ndi ana mu dziko lino ndiponso mu town muno. Ndizakupatsani nkhani ndiponso ndikulonjeleni kuti mutengemo mbali mu research. Simuli okakamidzidwa kuti mutengemo mbali mu research tsiku la lero. Pomwe simunapange ganizo yotengamo mbali, mungathe kuuza wina wace pazokhudza research

Form ino ya kuvomeleza ili ingathe kukhala ndi mau yomwe simungathe ku mvetsetsa. Mungandiuze kuti ndileke kuti ndi longosole kuti mumvesetse. Ngati muli ndi mafunso, muli omasuka kundifunsa

Colinga ca research

Atsikana omwe akhala ndi ana pa msinkhu wacicepele amakhala pa vuto kwambiri yomwe yangabweletse vuto ya makamaka pa matenda a maganizo.

Matenda a maganizo amabweletsa mavuto aakulu pa amai acicepele. Tikufuna kupeza thandizo yo tetezera amai acicepele pa matenda a maganizo . Tikukhulupilira kuti mungatithandize pa kutengamo mbali mu study ino ndiponso pakuyankha mafunso. Tikufuna ku phunzira pa mavuto yomwe amai acicepele akumana nawo ndiponso ubale omwe ulipo ndi matenda a maganizo . Tikufuna kuphunzira njira zomwe vuto ya ukholo zikhudzila amai acicepele ndiponso kuphunzira pa cira zo siyana siyana zomwe asebenzetsa kuti acepetse vuto. Tikufunanso kudziwa pa zinthu zomwe ziwayendera bwino atsikana komanso zinthu zozungulira zomwe zikuyenda bwino cifukwa cidziwitso ici cingatithandize ku phunzira njira zopelekela thandizo kuli amai acicepele kuti asakhale ndi vuto ya maganizo

Type ya Research

Research ino izafuna inu kuyankha mafunso yomwe yazatenga pafupi fupi 45 minutes

Kusankha otengamo mbali

Mukupemphedwa kutengamo mbali mu research iyi cifukwa cakuti experience yanu kukhala amai acicepere ingathe kuthandiza kwambiri pa chidziwitso pa nkhani ya mavuto yomwe yapezeka pa kukhala kholo , njira zozithandizira komanso pa zamaganizo

Kutengamo mbali mozifunira

Sitikukukakamizani kutengamo mbali mu research ino. Muli aufulu kutengamo mbali, olo kusatengamo mbali. Ngati simufuna kutengamo mbali, muzapitiliza kulandila zonse zomwe mumalandila, ndipo sipazakhala kusintha kulikonse .

Zolondola

Muyitanidwa kuti mutithandize kuti tiphunzire zambiri pa zotulukapo za mavuto yamaganizo yomwe makolo acicepele akumana nawo.

Muitanidwa kuti mutengemo mbali mu research ino. Ngati mwavomera, mukupemphedwa kuti muyankhe mafunso yomwe yazakundengelani ma minutes yokwanira 45

Ine kapena mmodzi mwa awiri omwe akundithandiza pa research ino tizapeleka mafunso, ndikutenga mayankho . Muzapatsidwa mafunso pa centre center (public hospital/clinic, Ngo, or safe mothers' shelter). Muzatha kutenga mafunso ngati mwabwela ku postnatal visit. Pothela pake mafunso yazatengedwa. Mungathe kuyankha mafunso, kapena ndingakuwelengeleni, ndipo mukhathe kunena mayankho anu ndipo ndizatha kulemba.

Ngati simungakwanilitse kuyankha ena mwamafunso, mungathe kusiya ndi kuyankha ena mafunso otsatilapo. Nkhani zomwe tizakambilana ena sadzatha kudziwa, dzina lanu zizalembedwa pa ma fomu, nambala ndiyo tizasebenzetsa kuzindikira inu, ndiponso kulibe ena kuposa ine ndi mmodzi mwa awiri omwe akundithandiza pa research ino azatha kuona nkhani zomwe tizakambilana

Nthawi

Research izatenga 4 months. Pa nthawi iyi , tizakuitanani kawiri kuti mutengemo mbali mu survey pa nthawi zokwanila zitatu , survey izatenga 45 minutes kuti muthe kuyankha mafunso.

Kasebenzesedwe ka nkhani

Nkhani zomwe tizakambilana zizasebenzetsedwa kuthandiza kupanga zolinga pa zamalamulo

Pa zacigawo, komwe akhala anthu ambiri, banja , ndiponso pa munthu, osati cabe komwe mukhala, komanso kwina momwe tingathandizile kuteteza vuto ya maganizo pa makolo acicepere

Zoipa

Mosadziwa mungagawile ena nkhani, olo kapena simungamasuke kunena pa nkhani zina .Sitingakonde kuti izi zicitike. Ngati mukuzimva kuti zinthu zina simungathe kulongosola, sitikukakamizani kuti muyankhe mafunso mu survey ino.

Zabwino

Kunkhakhale palibe zabwino zokuthandizani za mwa msanga , koma kuengamo mbali kwanu kuzathandiza kudziwa zambiri pa zomwe tingacite kuteteza mavuto a maganizo omwe a mai acicepere akumana nao , zomwe zingapangitse boma kuti iyike malamulo yomwe yangathandize amai acicepere zomwe palibe nthawi ino

Zakulandila

Palibe zakulandira zili zonse pakutengamo mbali mu research ino, tili oyamikira kwambiri kuti mwapeza nthawi ya kutengamo mbali mu research ino

Zacisinsi

Research ino ikucitikira pa centre, yomwe ili mu community, ndipo ambiri anhathe kukokeka ndipo ngati mwatengamo mbali anthu ena mu community angathe kukufunsani mafunso .

Sitizauza ena pa nkhani zomwe takambilana . Tizasebenzetsa nambala pa zomwe takambilana. Nkhani zomwe takambilana zizakhomewa mu kompyuta , ndipo ena sazatha kuona . Sindizagawila ena, koma cabe , awiri omwe ndilikusebenza nawo pa za research , akulu anchito ndiponso osebenza pa cipatala , ngati kungafunike.

Kugawana zotulukapo

Zonse zomwe muzatha kutiuza, sitizauza ena , ndipo dzina lano siidza tomolodwa . Nkhani zomwe muzatiuza zizagawilidwa mu zolemba komanso mu misonkhano ikulu – ikulu

Kovomela olo kuleka

Simukukakamizidwa kutengamo mbali mu research ino, ngati simukufuna kutengamo mbali. Zomwe muzasankha, sizizalengetsa kusintha kulikonse pa thandizo yomwe mukulandira pa centre ino . Mungathe kuleka kutengamo mbali mu survey ino pa nthawi ili yonse ndipo thandizo yomwe mukulandira zizakhuzidwa yayi. Ndizakupatsani mpata wa kufufuza pa zomwe tizakambilana pothela pa survey ino, ndipo mungathe kusintha mayankho yanu.

Kodi mudziwa kuti simungathe kutengamo mbali mu research ino ngati simukufuna kutengamo mbali? Mungathe kukana? Kodi mudziwa kuti mungathe kundifunsa mafunso ngati mwafuna? Kodi mudziwa kuti ndapeleka ma contact details ya munthu omwe angathe kupeleka nkhani zambiri pa za research ino? Mungathe kundifunsa mafunso ena alionse pa mbali ili yonse ya research ngati mungakonde.Kodi muli ndi mafunso ena?

Omwe mungathe kuona

Ngati muli ndimafunso ena alionse mungathe ku wafunsa lomba olo patsogolo pake. Ngati mungakonde kufunsa mafunso pa tsogolopano, mungathe kukambilana ndi:

Kalunga Cindy Nakazwe,

E-mail: kalungacindynakazwe@ln.hk or

kalungacindynakazwe@yahoo.com

Chivomelezo chapelekedwa ndi TDRC Ethics Review Committee komwe kali ka bungwe komwe kali ndi nchito yo yangana kuti otengamo mbali mu research ali otetezedwa. Ngati mungakonde kudziwa zambiri za kabungwe aka mungathe kugwilitsa nchito izi:

The Secretary
TDRC Ethics Review Committee
Tropic Diseases Research Centre
P.O Box 71769
Ndola, Zambia
Email: Tdrc-ethics@tdrc.org.com
Mobile: +260 950 701190
+260 955 425176

Research ino ya onedwa ndi ka bungwe koyangana pa za makhalidwe pa sukulu ya

Lingnan University in Hong Kong komwe amphunzira omwe akucita za research ino.

Ma details ya omwe akuyanganira amene akucita research ino:

Professor. Barbara Lo
Department of Applied Psychology,

Faculty of Social Sciences,
Lingnan University,
8 Castle Peak Road, Tuen Mun, N. T, Hong Kong.
Email: barbaralo@ln.edu.hk

"Civomelezo ca ku cita research capelekedwa ndi a TDRC Ethics Review Committee mwakulondola za ethics review and approval procedures. Munthu ali yense yemwe angafune kudziwa zinthu zina zake zokhuza research ino angathe kufunsa mafunso anthu omwe akucita research ino.

Mwakuonjezapo, mungathe kusebenzetsa address ili pa mwambapa ngati muli ndi mafunso ena okhudza research ino onse otengamo mbali mu research ali ololedwa kutenga copy ya Participant Information Form and/or Participant Consent Form ya research ino."

Part II: Certificate ya cilolezo

Mukuitanidwa kuti mutengemo mbali mu research yomwe izacitidwa ndi

Kalunga Cindy Nakazwe, a PhD student mu Department ya Applied Psychology pa sukulu ya ikulu ya Lingnan University ku Hong Kong. Colinga ca research ndi kuona pa thandizo ya ubale pakati pa vuto ya makolo ndiponso za maganizo ya azimai aciceperemu Zambia Izi zingathe kuthandiza boma ndi ena kuti ayike mapulogramu omwe zingathandize kuthandiza za maganizo a azimai acicepere . Survey izatenga 45 minutes.

Na itanidwa kuti nitengemo mbali mu research yo khuza vuto ya kukhala kholo ndiponso za maganizo ya amai acicepele

Ndawerenga, olo andiwerengela . Ndinapastidwa mpata ofunsa mafunso ndipo nakhutilitsidwa ndi mayankho.Ndavomela kuti nitengemo mbali mu research ino . Nkhani zomwe ni zapeleka zi zasebenzetsedwa pa reaserch cabe ndipo zisasungidwa mwacisinsi . Pakusaina pansipa , ,ndikuzindikira kuti ndili ndi zaka 18 olo kuposapo

Print Dzina ya otengamo mbali_____

Signature ya otengamo mbali _____

Date _____

Tsiku/Mwezi/chaka

Ngati simungathe kulemba olo kuwerenga *

Ndaona kawerengedwe ka bwino ka form ya civomelezo kuli ofuna kutingamo mbali , ndipo mpata wapelekedwa kuti afunse mafunso . Ndikunena kuti mo masuka munthu avomereza kuti atengemo mbali mu research

*****A literate witness must sign (if possible, this person should be selected by the participant and should have no connection to the research team). Participants who are illiterate should include their thumb print as well.

Print name of witness_____ **Thumb print of participant**

Signature of witness _____

Date _____

Day/month/year

Ngati pali azimai alindi pakati , ana , anthu olemala , omwe akucita research afunika kuonesetsa kuti munthu odziwa bwino kulemba ndi kuwerenga alipo .Ngati pali vuto yakumvesesta , research plan iyenekela kukhala ndi njira zo yeselamo kumvesesta kwa anthu otengamo mbali mu research

Kulankhula kwa a researcher / olo munthu otenga civomelezo

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands.

Nda werenga nkhani kuli otengamo mbali mu research , n.dipo mafunso onse yayankhidwa . Otengamo mbali , sanakakamizidwe , kuti avomele kutengamo mbali

Copy ya ICF ya pelekedwa kuli otengamo mbali

Print Name of Researcher/person taking the consent_____

Signature of Researcher /person taking the consent_____

Date _____

Day/month/year

CONTACTS FOR QUESTIONS

Principal Investigator

Dzina: Kalunga Cindy Nakazwe
E mail: kalungacindynakazwe@ln.hk or
kalungacindynakazwe@yahoo.com

Minor Assent Form

Tikucita research yokhuza momwe njira zothandizilamo pakati pa ubale wa mavuto yomwe makolo apitamo ndiponso za maganizo a azimai acicepere .Research ndi njira yo phunzila zambiri za anthu . Ngati mwavomela kutenmo mbali mu study ino , muzafunsidwa kuti muyankhe mafunso . Izi zizatenga 45 minutes
Ngati mungakonde , mungathe kutengamo mbai olo osatengamo mbali mu study ino .
Makolo anu kapena okusungani achibale akudziwa za study ino

Ngati mykufuna kutengamo mbali , mungathe ku lemba dzina lanu

---

Ine, _____, ndikufuna kutengamo mbali mu study ino

_____ _____

(Dzina) (Date)

Appendix 3: Questionnaire for Quantitative Studies

<u>Section A: Sociodemographic Information</u> - This section contains questions about yourself, your family and home environment. Answer by ticking in the appropriate box [✓] or by filling in the blank space.

1	Age	……
2	Highest Education Class level	1. Upper Primary School [ ] 2. Junior Secondary School [ ] 3. Senior Secondary School [ ] 4. University [ ] 5. Not in School / Dropped out [ ]
3	Marital Status	1.Never Married [ ] 2.Married [ ] 3.Separated [ ] 4.Divorced [ ] 5.Cohabiting (Living with a boy/man/fiancée)[ ] 6. Other (Specify)……
4	Religion	1.Christian [ ] 2.Muslim [ ] 3.Hindu [ ] 4.Traditionalist [ ] 5.Atheist [ ] 6.Other (specify) ……..
5	Baby's Age	……..Weeks, …….Month(s) …….Years
6	Baby's Gender	1.Male [ ] 2. Female [ ]
7	Baby's father's Age	……..
8	Baby's Father's highest educational qualification	1.No Education [ ] 2.Lower primary school [ ] 3.Upper primary school [ ] 4.Junior secondary school [ ] 5.Senior secondary school ('O' Level) [ ] 6.'A' level [ ] 7.Technical / Vocational [ ] 8.College [ ] 9.University [ ] 10. Do not Know [ ]
9	Baby's father's Occupation	1.Unemployed [ ] 2.Informal employment (farming, selling, tailoring, hair dressing etc.) [ ] 3. Formal employment [ ] 4.Other(specify)…… 5. Do not Know [ ]
10	Mother's Age	…….
11	Mother's Age at first child	…….
12	Mother's highest educational qualification	1.No Education [ ] 2.Lower primary school [ ] 3.Upper primary school [ ] 4.Junior secondary school [ ] 5.Senior

		secondary school ('O' Level) [ ] 6.'A' level [ ] 7.Technical / Vocational [ ] 8.College [ ] 9.University [ ] 10. Do not Know [ ] 11. Deceased [ ]
13	Mother's Occupation	1.Unemployed [ ] 2.Informal employment (farming, selling, tailoring, hair dressing etc.) [ ] 3. Formal employment [ ] 4.Other(specify)…… 5. Do not Know [ ] 6.Deceased [ ]
14	Mother's income	1. K1,000 or less [ ] 2. K1,001 – K5,000[ ] 3. K5,001 – K10,000 [ ] 4. K10,001 – K15,000 [ ] 5. K15,001 – K20, 000 [ ] 6. More than K20,000 [ ] 7. Do Not Know [ ] 8. Deceased [ ]
15	Father's Age	……..
16	Father's highest educational qualification	1.No Education [ ] 2.Lower primary school [ ] 3.Upper primary school [ ] 4.Junior secondary school [ ] 5.Senior secondary school (O' Level) [ ] 6.A level 7.Technical / Vocational [ ] 8.College [ ] 9.University [ ] 10. Do not Know [ ] 11. Deceased [ ]
17	Father's Occupation	1.Unemployed [ ] 2.Informal employment (farmer, seller, tailor, driver etc.) [ ] 3. Formal employment [ ] 4.Other(specify)…… 5. Do not Know [ ] 6. Deceased [ ]
18	Father's income	1. K1,000 or less [ ] 2. K1,001 – K5,000[ ] 3. K5,001 – K10,000 [ ] 4. K10,001 – K15,000 [ ] 5. K15,001 – K20, 000 [ ] 6. More than K20,000 [ ] 7. Do Not Know [ ] 8. Deceased [ ]
19	Number of siblings	0 [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7[ ] 8 [ ] 9 [ ] 10 [ ] Other(specify)……..

20	Position among siblings	Only child [ ] 1st child [ ] 2nd child [ ] 3rd child[ ] 4th Child [ ] 5th child [ ] 6th child [ ] 7th child [ ] 8th child [ ] 9th child [ ] 10th child [ ] Other(specify)……..
21	Family Arrangement	I live in a house with: 1. Single parent [ ] 2.Both parents [ ] 3.Step parent(s) [ ] 4. Grandparent(s) [ ] 5. Family relatives [ ] 6.Partner [ ] 7.Other(specify) ……..
22	How would you describe the area you live in?	1. High densely populated area [ ] 2. Middle densely populated area [ ] 3. Low densely populated area [ ]
23	On a scale of 1-10 how would you rate your relationship with your partner?	1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7 [ ] 8 [ ] 9 [ ] 10 [ ]
	scale of 1-10 how would you rate your relationship with your family members?	1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [[ ] 8 [ ] 9 [ ] 10 [ ]
	Have you ever experienced any form of abuse?	1.Yes [ ] 2.No [ ] yes, 0. Not applicable [ ] 1. past week [ ] st 1 month [ ] 3.past 6 months [ ] t 1 year[ ] 5.Some years ago[ ] 6. r (specify)……
	ou have any serious health conditions?	[ ] 2.No [ ] , if yes, 0. Not applicable [ ] 1. BP [ ] 2. t disease [ ] 3. Diabetes [ ] 4. HIV[ ] ner specify……. [ ] 6. Asthma [ ] [ ] 8. Anemia [ ] 9. Liver problem [ ]
	ou on any medications at present?	[ ] 2.No [ ] , 0. Not applicable [ ] 1. BP [ ] 2. Heart se [ ] 3. Diabetes [ ] 4. HIV[ ] ntraceptives [ ] 6.Other specify……. [ ]
	you had any operations before?	[ ] 2.No [ ] , 0. Not applicable [ ] 1. Caesarean [ ] her medical conditions [ ]
	you received any regular health kups?	[ ] 2.No [ ] , what could be the reason? 0. Not cable [ ] 1. No reason [ ] 2. Scared [ ]

		norant [ ] 4. Do not see the need[ ] 5.I ealthy[ ] 6.Long queues [ ] …… ……
	you sought any iatric/psychological service previously esently?	[ ] 2.No [ ] , what was the diagnosis? …… t applicable [ ] 1. Depression [ ] 2. d Disorder [ ] 3. Anxiety disorder [ ] 4. de ideation [ ] 5.Stress [ ] 6.Other fy……. [ ]
	was the baby's birth weight?	…
	the baby born with any serious health ition(s)?	[ ] 2.No [ ] , 0. Not applicable [ ] 1. Chronic[ ] 2. dice [ ] 3. Premature birth [ ] 4. res[ ]
	is the baby's current health condition	or [ ] 2. Good [ ] or , what is wrong with him/her? t applicable [ ] 1. Chronic[ ] 2. Non- ic [ ] 3. Yellow Fever [ ] 4. utrition[ ]

<u>Section B: SWLS</u> - Below are five statements of how you view your life that you may agree or disagree with. Using the 1-7 scale below, indicate your agreement with each statement by ticking ✓ against one number per row. Please be open and honest in your response.

1 - Strongly disagree, 2 – Disagree, 3 - Slightly disagree, 4 - Neither agree nor disagree, 5 - Slightly agree, 6 – Agree, 7 - Strongly agree

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
1 In most ways my life is close to my ideal.	1	2	3	4	5	6	7
2. The conditions of my life are excellent.	1	2	3	4	5	6	7
3 I am satisfied with my life.	1	2	3	4	5	6	7

4 So far I have gotten the important things I want in life.	1	2	3	4	5	6	7
5 If I could live my life over again I would change almost nothing.	1	2	3	4	5	6	7

<u>Section C: PANAS-GEN</u> - This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you GENERALLY feel this way, that is how you feel ON AVERAGE.

use the following scale to record your answers.	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
1. Interested	1	2	3	4	5
2. Distressed	1	2	3	4	5
3. Excited	1	2	3	4	5
4. Upset	1	2	3	4	5
5. Strong	1	2	3	4	5
6. Guilty	1	2	3	4	5
7. Scared	1	2	3	4	5
8. Hostile	1	2	3	4	5
9. Enthusiastic	1	2	3	4	5
10. Proud	1	2	3	4	5
11. Irritable	1	2	3	4	5
12. Alert	1	2	3	4	5
13. Ashamed	1	2	3	4	5
14. Inspired	1	2	3	4	5
15. Nervous	1	2	3	4	5
16. Determined	1	2	3	4	5
17. Attentive	1	2	3	4	5

18. Jittery	1	2	3	4	5
19. Active	1	2	3	4	5
20. Afraid	1	2	3	4	5

Appendix 4: Informed Consent Forms – Qualitative Interviews (English Version)

Principle Investigator - Kalunga Cindy Nakazwe, PhD Student

Organisation - Lingnan University, Hong Kong

Sponsor – Research Grants Council, Hong Kong

This Informed Consent Form has two parts:

- Information Sheet (to share information about the study with you)
- Certificate of consent (for signatures if you choose to participate)

You will be given a copy of the full Informed Consent Form

Part I: Information Sheet

Introduction

I am Kalunga Cindy Nakazwe, a PhD student at Lingnan University in Hong Kong, I am doing research on parenting stress and the mental health of adolescent mothers. The act of young girls becoming mothers is very common in this country and in this city. I am going to give you information and invite you to be part of this research. You do not have to decide today whether you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research.

This consent form may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you still have questions later, feel free to ask me.

Purpose of the research

Adolescent motherhood usually comes with high parenting stress which puts young mothers at risk of mental health problems. Mental health problems can have adverse effects on the adolescent mothers. We want to find ways of protecting adolescent mothers from mental health problems. We believe that you can help us by participating in this study and filling in the questionnaire. We want to learn about the parenting stress of Zambian adolescent mothers and its relationship with mental health. We want to learn ways in which parenting stress affects adolescent mothers' mental health and learn about the different ways that they use to cope with the stress. We also want to know about the girls' personal and environmental resources because this knowledge might help us to learn ways of helping these adolescent mothers not to develop mental health problems.

Type of Research

This research will involve an interview that will take approximately somewhere between 45 minutes and 1 hour 20 minutes.

Participant Selection

You are being invited to take part in this research because we feel that your experience as a young mother can contribute much to our understanding and knowledge of parenting stress, coping mechanisms and mental health.

Voluntary Participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. If you choose not to participate,6 all the services you receive at this Centre will continue and nothing will change.

Procedures

We are asking you to help us learn more about the effects of parenting stress on the mental health of adolescent mothers. We are inviting you to take part in this research project. If you accept, you will be asked to take part in an interview that will last approximately between 45 minutes and 1 hour 20 minutes with myself or any of the two research assistants.

During the interview, I or another interviewer will sit down with you in a comfortable place at the Centre. If it is better for you, the interview can take place in your home or a friend's home. If you do not wish to answer any of the questions during the interview, you may say so and the interviewer will move on to the next question. No one else but the interviewer will be present unless you would like someone else to be there. The information recorded is confidential, and no one else except me and the other two research assistants will have access to the information documented during your interview. The entire interview will be audio-recorded, but no-one will be identified by name on the audio. The audio will be transferred to a personal computer into a folder that will be password protected. The information recorded is confidential, and no one else except me and the other two research assistants will have access to the audios. The audios will be deleted after six months.

Duration

The research in form of an interview will be held once and will take approximately between 45 minutes and 1 hour 20 minutes.

Uses of information

The information we shall get from you will be used to help make decisions at policy, ministry, community, family, and individual level, not only in your community, but other communities too on how best we could prevent mental health problems in adolescent mothers.

Risks

There is a risk that you may share some personal or confidential information by chance, or that you may feel uncomfortable talking about some of the topics. However, we do not wish for this to happen. You do not have to answer any question or take part in the interview if you feel the question(s) are too personal or if talking about them makes you uncomfortable.

Benefits

There may be no immediate direct benefits to you, but your participation is likely to help us find out more about how to prevent mental health problems in adolescent mothers in our society. Which could lead the government to come up with deliberate policies and programmes that could help adolescent mothers, of which they are lacking now.

Reimbursements

You will not be provided any incentive to take part in the research, we are so grateful that you could spare some time to participate in this study.

Confidentiality

This research is being done in this center, which is situated in your community, and so may draw attention and if you participate you may be asked questions by other people in the community. We will not be sharing information about you to anyone outside of the research team. The information that we collect from this research project will be kept private. Any information about you will have a number on it instead of your name. Only the researchers will know what your number is, and we will lock that information up with a lock and key (all electronic information will be stored in a password protected folder on a computer). It will not be shared with or given to anyone except myself, the other two research assistants, my supervisors, and your clinician if need arises.

Sharing the Results

Nothing that you tell us today will be shared with anybody outside the research team, and nothing will be attributed to you by name. The knowledge that we get from this research will be shared more broadly, through publications, conferences and policy recommendations.

Right to Refuse or Withdraw

You do not have to take part in this research if you do not wish to do so and choosing to participate will not affect the services you receive from this center in any way. You may stop participating in the interview at any time that you wish without the services being affected. I will give you an opportunity at the end of the interview to review your remarks, and you can ask to modify or remove portions of those, if you do not agree with my notes or if I did not understand you correctly.

Do you know that you do not have to take part in this study if you do not wish to? You can say No if you wish to? Do you know that you can ask me questions later if you wish to? Do you know that I have given the contact details of the person who can give you more information about the study? You can ask me any more questions about any part of the research study if you wish to. Do you have any questions?

Who to Contact

If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact the following:

Kalunga Cindy Nakazwe,
E-mail: kalungacindynakazwe@ln.hk or
kalungacindynakazwe@yahoo.com

This proposal has been reviewed and approved by TDRC Ethics Review Committee which is a committee whose task is to make sure that research participants are protected from harm. If you wish to find more about the IRB, contact:

TDRC Ethics Review Committee
Tropic Diseases Research Centre

P.O Box 71769
Ndola, Zambia
Email: Tdrc-ethics@tdrc.org.com
Mobile: +260 950 701190
+260 955 425176

This research has also been reviewed by a primary ethics committee at Lingnan University in Hong Kong where the researcher is studying. The following are the details of the researcher's supervisor:

Professor. Barbara Lo
Department of Applied Psychology,
Faculty of Social Sciences,
Lingnan University,
8 Castle Peak Road, Tuen Mun,
N. T, Hong Kong.
Email: barbaralo@ln.edu.hk

"Approval to conduct this research has been provided by TDRC IRB in accordance with its ethics review and approval procedures. Any person considering participation in this research project, or agreeing to participate, may raise any questions or issues with the researchers at any time.

In addition, if you are/ or any person is not satisfied with the response of the researchers, you may raise ethical issues or concerns, and may make any complaints about this research project by contacting TDRC IRB on the address stated above.

All research participants are entitled to retain a copy of any Participant Information Form and/or Participant Consent Form relating to this research project."

Part II: Certificate of Informed Consent

You are invited to participate in a research study conducted by Kalunga Cindy Nakazwe, a PhD student in the Department of Applied Psychology at Lingnan University in Hong Kong. The purpose of the study is to explore the subjective experiences of adolescent mothers' parenting stress and how it affects their mental health, as well as the coping mechanisms they use. This is in an effort to inform policy, which in turn will stimulate government and other stake holders to develop programmes that will promote the mental health of adolescent mothers. This interview will take approximately somewhere between 45 minutes and 1 hour 20 minutes.

I have been invited to participate in research about parenting stress and mental health in adolescent mothers.

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study. All the information I will give out will be used for research purposes only and that it will be kept confidential. By signing below, I acknowledge that I am 18years or older.

Print Name of Participant_____

Signature of Participant _____

Date _____

Day/month/year

If illiterate *

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

*A literate witness must sign (if possible, this person should be selected by the participant and should have no connection to the research team). Participants who are illiterate should include their thumb print as well.

Print name of witness_____ **Thumb print of participant**

Signature of witness _____

Date _____

Day/month/year

If vulnerable or incapacitated like pregnant women, children, people with mental illness, people with disabilities, prisoners and minority groups form instance, the investigator must ensure that there is a well-educated and motivated surrogate or proxy decision maker. When comprehension is an issue the research plan should include means of testing the participants' understanding of the important information prior to enrollment.

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this ICF has been provided to the participant.

Name of Researcher/person taking the consent_____

Signature of Researcher /person taking the consent_____

Date _____

Day/month/year

CONTACTS FOR QUESTIONS

Principal Investigator

Names: Kalunga Cindy Nakazwe
E mail: kalungacindynakazwe@ln.hk or
kalungacindynakazwe@yahoo.com

Minor Assent Form

We are doing research to explore subjective experiences of adolescent mothers' parenting stress and how it affects their mental health, and the coping mechanisms they use. A research study is a way to learn more about people. If you decide that you want to be part of this study, you will be asked to take part in an interview that will last between 45 minutes and 1 hour 20 minutes.

You do not have to be in this study if you do not want to be. If you decide to stop after we begin, that's okay too. Your parent(s)/guardian(s) know about the study too.

If you decide you want to be in this study, please sign your name.

I, _____, want to be in this research study.

_____ _____

(Sign your name here) (Date)

Appendix 5: Informed Consent Forms - Qualitative Interviews (CiNyanja Version)

Chivomelezo kwa azimai achicepele otengapo mbali mu research

Ofufuza wamkulu - Kalunga Cindy Nakazwe, PhD Student

Bungwe- Lingnan University, Hong Kong

Opeleka thandizo – Research Grants Council, Hong Kong

Chivomelezo cili ndi mbali ziwiri

- Information Sheet (kugawana ndi inu za nkhani za kufunsila uku)
- Certificate of consent (poyika signature ngati mwavomela kutengamo mbali)

Muzapatsiwa copy ya form ya chivomerezo

Mbali yo yamba (Part I): kugawana ndi inu za nkhani za kufunsila uku (Information Sheet)

Kuzidziwitsa

Dzina yanga ndine Kalunga Cindy Nakazwe, ndikuchita maphunziro a pamwamba a PhD pa sukulu ya

Lingnan University ku dziko la Hong Kong, ndikucita kafufuza pa za umoyo wa azimai achicepele makamaka pa za maganizo awo. Zili zowanda kupeza atsikana acicepele akukhala ndi ana mu dziko lino ndiponso mu town muno. Ndizakupatsani nkhani ndiponso ndikulonjeleni kuti mutengemo mbali mu research. Simuli okakamidzidwa kuti mutengemo mbali mu research tsiku la lero. Pomwe simunapange ganizo yotengamo mbali, mungathe kuuza wina wace pazokhudza research

Form ino ya kuvomeleza ili ingathe kukhala ndi mau yomwe simungathe ku mvetsetsa. Mungandiuze kuti ndileke kuti ndi longosole kuti mumvesetse. Ngati muli ndi mafunso, muli omasuka kundifunsa

Colinga ca Kufufuza uku (Aim of the Research)

Atsikana omwe akhala ndi ana pa msinkhu wacicepele amakhala pa vuto kwambiri yomwe yangabweletse vuto ya makamaka pa matenda a maganizo.

Matenda a maganizo amabweletsa mavuto aakulu pa amai acicepele. Tikufuna kupeza thandizo yo tetezera amai acicepele pa matenda a maganizo. Tikukhulupilira kuti mungatithandize pa kutengamo mbali mu study ino ndiponso pakuyankha mafunso. Tikufuna ku phunzira pa mavuto yomwe amai acicepele akumana nawo ndiponso ubale omwe ulipo ndi matenda a maganizo. Tikufuna kuphunzira njira zomwe vuto ya ukholo zikhudzila amai acicepele ndiponso kuphunzira pa cira zo siyana siyana zomwe asebenzetsa kuti acepetse vuto. Tikufunanso kudziwa pa zinthu zomwe ziwayendera bwino atsikana komanso zinthu zozungulira zomwe zikuyenda bwino cifukwa cidziwitso ici cingatithandize ku phunzira njira zopelekela thandizo kuli amai acicepele kuti asakhale ndi vuto ya maganizo

Kufufuza ku meneku (Type of Research)

Research ino izafuna inu kuyankha mafunso yomwe yazatenga pafupi fupi pakati pa 45 minutes na 1 hour 20 minutes.

Kusankha otengamo mbali (Participation in this Research)

Mukupemphedwa kutengamo mbali mu research iyi cifukwa cakuti experience yanu kukhala amai acicepere ingathe kuthandiza kwambiri pa chidziwitso pa nkhani ya mavuto yomwe yapezeka pa kukhala kholo, njira zozithandizira komanso pa zamaganizo

Kutengamo mbali mozifunira (Voluntary Participation)

Sitikukukakamizani kutengamo mbali mu research ino. Muli aufulu kutengamo mbali, olo kusatengamo mbali. Ngati simufuna kutengamo mbali, muzapitiliza kulandila zonse zomwe mumalandila, ndipo sipazakhala kusintha kulikonse.

Zolondola (What will follow)

Muyitanidwa kuti mutithandize kuti tiphunzire zambiri pa zotulukapo za mavuto yamaganizo yomwe makolo acicepele akumana nawo .

Muitanidwa kuti mutengemo mbali mu research ino. Ngati mwavomera, mukupemphedwa kuti muyankhe mafunso yomwe yazakundengelani ma minutes yokwanira pakati pa 45 minutes na 1 hour 20 minutes.

Ine kapena mmodzi mwa awiri omwe akundithandiza pa research ino tizapeleka mafunso, ndikutenga mayankho. Muzapatsidwa mafunso pa centre center (public hospital/clinic, Ngo, or safe mothers' shelter). Muzatha kutenga mafunso ngati mwabwela ku postnatal visit. Pothela pake mafunso yazatengedwa. Mungathe kuyankha mafunso, kapena ndingakuwelengeleni, ndipo mukhathe kunena mayankho anu ndipo ndizatha kulemba.

Ngati simungakwanilitse kuyankha ena mwamafunso, mungathe kusiya ndi kuyankha ena mafunso otsatilapo. Nkhani zomwe tizakambilana ena sadzatha kudziwa, dzina lanu zizalembedwa pa ma fomu, nambala ndiyo tizasebenzetsa kuzindikira inu, ndiponso kulibe ena kuposa ine ndi mmodzi mwa awiri omwe akundithandiza pa research ino azatha kuona nkhani zomwe tizakambilana

Nthawi (Duration)

Research izatenga pakati pa 45 minutes na 1 hour 20 minutes ninshi kwasila.

Kasebenzesedwe ka nkhani (Privacy)
Nkhani zomwe tizakambilana zizasebenzetsedwa kuthandiza kupanga zolinga pa zamalamulo
Pa zacigawo, komwe akhala anthu ambiri, banja, ndiponso pa munthu, osati cabe komwe mukhala, komanso kwina momwe tingathandizile kuteteza vuto ya maganizo pa makolo acicepere

Zoipa (Risks)

Mosadziwa mungagawile ena nkhani, olo kapena simungamasuke kunena pa nkhani zina. Sitingakonde kuti izi zicitike. Ngati mukuzimva kuti zinthu zina simungathe kulongosola, sitikukakamizani kuti muyankhe mafunso mu survey ino.

Zabwino (Benefits of the Study)

Kunkhakhale palibe zabwino zokuthandizani za mwa msanga, koma kuengamo mbali kwanu kuzathandiza kudziwa zambiri pa zomwe tingacite kuteteza mavuto a maganizo omwe a mai

acicepere akumana nao, zomwe zingapangitse boma kuti iyike malamulo yomwe yangathandize amai acicepere zomwe palibe nthawi ino

Zakulandila (Compensation)

Palibe zakulandira zili zonse pakutengamo mbali mu research ino, tili oyamikira kwambiri kuti mwapeza nthawi ya kutengamo mbali mu research ino

Zacisinsi (Anonymity)

Research ino ikucitikira pa centre, yomwe ili mu community, ndipo ambiri anhathe kukokeka ndipo ngati mwatengamo mbali anthu ena mu community angathe kukufunsani mafunso. Sitizauza ena pa nkhani zomwe takambilana. Tizasebenzetsa nambala pa zomwe takambilana. Nkhani zomwe takambilana zizakhomewa mu kompyuta, ndipo ena sazatha kuona. Sindizagawila ena, koma cabe, awiri omwe ndilikusebenza nawo pa za research, akulu anchito ndiponso osebenza pa cipatala, ngati kungafunike.

Kugawana zotulukapo (Confidentiality)

Zonse zomwe muzatha kutiuza, sitizauza ena, ndipo dzina lano siidza tomolodwa. Nkhani zomwe muzatiuza zizagawilidwa mu zolemba komanso mu misonkhano ikulu – ikulu

Kovomela olo kuleka (Accepting to Take Part)

Simukukakamizidwa kutengamo mbali mu research ino, ngati simukufuna kutengamo mbali. Zomwe muzasankha, sizizalengetsa kusintha kulikonse pa thandizo yomwe mukulandira pa centre ino. Mungathe kuleka kutengamo mbali mu survey ino pa nthawi ili yonse ndipo thandizo yomwe mukulandira zizakhuzidwa yayi. Ndizakupatsani mpata wa kufufuza pa zomwe tizakambilana pothela pa survey ino, ndipo mungathe kusintha mayankho yanu.

Kodi mudziwa kuti simungathe kutengamo mbali mu research ino ngati simukufuna kutengamo mbali? Mungathe kukana? Kodi mudziwa kuti mungathe kundifunsa mafunso ngati mwafuna? Kodi mudziwa kuti ndapeleka ma contact details ya munthu omwe angathe kupeleka nkhani zambiri pa za research ino? Mungathe kundifunsa mafunso ena alionse pa mbali ili yonse ya research ngati mungakonde. Kodi muli ndi mafunso ena?

Omwe mungathe kuona (Contact Persons)

Ngati muli ndimafunso ena alionse mungathe ku wafunsa lomba olo patsogolo pake. Ngati mungakonde kufunsa mafunso pa tsogolopano, mungathe kukambilana ndi:

Kalunga Cindy Nakazwe,
E-mail: kalungacindynakazwe@ln.hk or
kalungacindynakazwe@yahoo.com

Chivomelezo chapelekedwa ndi TDRC Ethics Review Committee komwe kali ka bungwe komwe kali ndi nchito yo yangana kuti otengamo mbali mu research ali otetezedwa. Ngati mungakonde kudziwa zambiri za kabungwe aka mungathe kugwilitsa nchito izi:

The Secretary
TDRC Ethics Review Committee
Tropic Diseases Research Centre
P.O Box 71769
Ndola, Zambia

Email: Tdrc-ethics@tdrc.org.com
Mobile: +260 950 701190
+260 955 425176

Research ino ya onedwa ndi ka bungwe koyangana pa za makhalidwe pa sukulu ya

Lingnan University in Hong Kong komwe amphunzira omwe akucita za research ino.

Ma details ya omwe akuyanganira amene akucita research ino:

Professor. Barbara Lo
Department of Applied Psychology,
Faculty of Social Sciences,
Lingnan University,
8 Castle Peak Road, Tuen Mun, N. T, Hong Kong.
Email: barbaralo@ln.edu.hk

“Civomelezo ca ku cita research capelekedwa ndi a TDRC Ethics Review Committee mwakulondola za ethics review and approval procedures. Munthu ali yense yemwe angafune kudziwa zinthu zina zake zokhuza research ino angathe kufunsa mafunso anthu omwe akucita research ino

Mwakuonjezapo, mungathe kusebenzetsa address ili pa mwambapa ngati muli ndi mafunso ena okhudza research ino

Onse otengamo mbali mu research ali ololedwa kutenga copy ya Participant Information Form and/or Participant Consent Form ya research ino

Mbali yachibili (Part II): Certificate ya cilolezo

Mukuitanidwa kuti mutengemo mbali mu research yomwe izacitidwa ndi

Kalunga Cindy Nakazwe, a PhD student mu Department ya Applied Psychology pa sukulu ya ikulu ya Lingnan University ku Hong Kong. Colinga ca research ndi kuona pa thandizo ya ubale pakati pa vuto ya makolo ndiponso za maganizo ya azimai aciceperemu Zambia Izi zingathe kuthandiza boma ndi ena kuti ayike mapulogramu omwe zingathandize kuthandiza za maganizo a azimai acicepere. Survey izatenga 45 minutes.

Na itanidwa kuti nitengemo mbali mu research yo khuza vuto ya kukhala kholo ndiponso za maganizo ya amai acicepele

Ndawerenga , olo andiwerengela . Ndinapastidwa mpata ofunsa mafunso ndipo nakhutilitsidwa ndi mayankho.Ndavomela kuti nitengemo mbali mu research ino . Nkhani zomwe ni zapeleka zi zasebenzetsedwa pa reaserch cabe ndipo zisasungidwa mwacisinsi . Pakusaina pansipa , ,ndikuzindikira kuti ndili ndi zaka 18 olo kuposapo

Print Dzina ya otengamo mbali_____

Signature ya otengamo mbali _____

Date _____

Tsiku/Mwezi/chaka

***Ngati simungathe kulemba olo kuwerenga** *

Ndaona kawerengedwe ka bwino ka form ya civomelezo kuli ofuna kutingamo mbali, ndipo mpata wapelekedwa kuti afunse mafunso. Ndikunena kuti mo masuka munthu avomereza kuti atengemo mbali mu research

*****A literate witness must sign (if possible, this person should be selected by the participant and should have no connection to the research team). Participants who are illiterate should include their thumb print as well.

Print name of witness_____ **Thumb print of participant**

Signature of witness _____

Disku (Date) _____

Day/month/year

Ngati pali azimai alindi pakati, ana, anthu olemala, omwe akucita research afunika kuonesetsa kuti munthu odziwa bwino kulemba ndi kuwerenga alipo .Ngati pali vuto yakumvesesta,

research plan iyenekela kukhala ndi njira zo yeselamo kumvesesta kwa anthu otengamo mbali mu research

Kulankhula kwa a researcher / olo munthu otenga civomelezo

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands.

Nda werenga nkhani kuli otengamo mbali mu research, n.dipo mafunso onse yayankhidwa. Otengamo mbali, sanakakamizidwe, kuti avomele kutengamo mbali

Copy ya ICF ya pelekedwa kuli otengamo mbali

Print Name of Researcher/person taking the consent_____

Signature of Researcher /person taking the consent_____

Date _____

Day/month/year

CONTACTS FOR QUESTIONS

Principal Investigator
Dzina: Kalunga Cindy Nakazwe
E mail: kalungacindynakazwe@ln.hk or
kalungacindynakazwe@yahoo.com

Minor Assent Form

Tikucita research yokhuza momwe njira zothandizilamo pakati pa ubale wa mavuto yomwe makolo apitamo ndiponso za maganizo a azimai acicepere. Research ndi njira yo phunzila zambiri za anthu . Ngati mwavomela kutenmo mbali mu study ino, muzafunsidwa kuti muyankhe mafunso . Izi zizatenga 45 minutes

Ngati mungakonde , mungathe kutengamo mbai olo osatengamo mbali mu study ino . Makolo anu kapena okusungani achibale akudziwa za study ino

Ngati mykufuna kutengamo mbali , mungathe ku lemba dzina lanu

---

Ine, _____, ndikufuna kutengamo mbali mu study ino

_____ _____

(Dzina) (Date

Appendix 6: Semi-structured Interview Guide

Demographics

Age:
Education class level:
Marital status:
No of children:
Infant's age:
Religion:
Lives with:

1. **Interview Introduction**

   Length: 45 minutes – 1 hour 20 minutes

   Primary goal: To see things the way you see them. This will be like a conversation with a focus on your experience, your views or opinions, and what you think or feel about parenting stress, mental health, and coping mechanisms of adolescent mothers.

2. **Verbal Consent**

   You have read the information sheet and signed the consent form. Would you still like to participate in this interview? Should we continue?

3. **Background information**

Overview:

- Tell me about yourself, generally about your background.
- Tell me about your experiences and views of being a parent.
- How do you feel about being a parent at your age?
  - Probe: If happy, what makes it that way?
  - Probe: If sad, what makes it that way?
- Tell me about your baby.
- Tell me about your baby's health condition.
- Is his/her health condition okay?
  - Probe: If not okay, what is wrong with him/her and how does this affect how you take care of him or her?
- Tell me about your baby's temperament.
- Does the baby's temperament make it easy for you to take care of him /her?
  - Probe: If yes, how does this help you take care of him or her?
  - Probe: If not, how does this affect how you take care of him or her?

4. **Parenting style**

- Tell me about your parenting style.
- How much time do you spend on caring for the baby?
- How do you interact with the baby?
- What are your expectations of the baby?
- What do you hope for concerning the baby's future?
- Do you reflect on or think about your parenting style or interactions with the baby?
  - Probe: If yes, how does this help you take better care of him or her?

- Probe: If not, how does this affect how you take care of him or her?

5. Parenting Stress

- Could you share with me your understanding of parenting stress? Or what do you understand by the term parenting stress?
- Probe: In your view, how does parenting stress come about?
- Probe: In your view, what are the sources of parenting stress?
- Probe: In your view, what factors contribute to parenting stress?
- Do you experience any parenting stress?
- Probe: If yes, could you tell me about your experience?
- Probe: If no, could you tell me why you think you do not experience any parenting stress?

*For those that experience parenting stress, ask next question.

- How can you describe your parenting stress on a scale of 1 - 10? With 1 representing low stress and 10 representing high stress. Probe: What do you think is the reason for your answer (whether high, moderate, or low)?

6. Effect of parenting stress on Mental health

- In your view, what effect does parenting stress have on mental health of adolescent mothers?
- Has parenting stress ever affected your mental health?
- Probe: If yes, could you tell me about your experience?
- Probe: If no, could you tell me what you think the reason is?
- Additionally, does the parenting role in general put a strain on you in any way?
- Probe: If yes, what kind of strain does the parenting role come with?
- Probe: If no, could you explain why this is so?
- Does the parenting role stimulate any emotions in you?
- Probe: If yes, what kind of emotions does the parenting role stimulate in you?
- If not, why so?
- Does the parenting role stimulate any thoughts in you?
- Probe: If yes, what kind of thoughts does the parenting role stimulate in you?
- If not, why so?
- Does the parenting role stimulate any behaviours in you?
- Probe: If yes, what kind of behaviours does the parenting role stimulate in you?
- If not, why so?

7. Coping

- How do you deal with parenting stress?
- Probe: Do you use only one way to deal with stress?
- If yes, which one is it? Why this one?
- If no, go to next probe
- Probe: Do you use several ways? What are they? Why these?
- Do your ways of dealing with parenting stress work or not?
- Probe: If yes, what makes them work? Which ones work better?
- Probe: If no, why don't they work according to you?
- How do your ways of dealing with the parenting stress impact your mental health?
- Probe: Do they promote your mental health (well-being)?
- If yes, how so? Tell me more. Which ones promote your mental health?
- If no, go to next probe
- Probe: Do they lead to mental problems (Mental distress)?

- If yes, what kind of problems?
- Do your ways of dealing with parenting stress including seeking help?
- If yes from whom?
- If not, why not?
- Does seeking help alleviate your stress?
- If yes, in what way?
- If not, why not?
- Does alleviation of your stress lead to better mental health outcomes?
- If yes, how so?
- If not, why not?
- Share with me if any of your personal attributes help you deal with parenting stress.
- Probe: Which ones are these?
- Do they bring positive outcomes? How so?
- Do they bring negative outcomes? How so?
- Are there any programmes in your health center (during postnatal) that promote adolescent mothers' mental health?
- Probe: If yes, share with me these programmes. Do they help?
- If they do help, share with me how.
- If no, why do you say so?
- Are there any programmes in your community that promote adolescent mothers' mental health?
- Probe: If yes, share with me these programmes. Do they help?
- If they do help, share with me how.
- If no, why do you say so?

8. Conclusion

- How has the parenting role changed your life?
- How do you anticipate it will affect your future going forward?
- What kind of programmes would you love to see in your health center (during postnatal) that promote adolescent mothers' mental health?
- What kind of programmes would you love to see in your community to help promote adolescent mothers' mental health?

Appendix 7: Ethical Approval Letter

TROPICAL DISEASES
Tel/Fax +260212 615444
P O Box 71769
tdrc-ethics@tdrc.org.zm
NDOLA, ZAMBIA

RESEARCH CENTRE

TDRC ETHICS REVIEW COMMITTEE
IRB REGISTRATION NUMBER : 00002911
FWA NUMBER : 00003729

TRC/C4/09/2020

14th September 2020

Nakazwe, Kalunga Cindy
Lingnan University
Tuen Mun
Hong Kong

Dear Cindy,

RE: ETHICAL APPROVAL OF STUDY PROTOCOL

Reference is made to the protocol entitled **"Exploring the Role of Coping Mechanisms in the Relationship between Parenting Stress and Mental Health among Adolescent Mothers in Zambia"**

On behalf of the Chairman of the TDRC Research Ethics Committee, I am pleased to inform you that your protocol was reviewed and granted ethical approval based on conditions below:

1. You are required to submit progress reports bi-annually. The Committee shall not grant renewal of ethical approval in the absence of progress reports.
2. Should there be any amendment to the protocol or data collection tools, you are required to submit to the proposed amendments to the TDRC REC for approval

You are now required to submit your protocol to the National Health Research Authority for final approval following the link: **https://www.nhra.org.zm.** A final report of the study should be submitted to the Ethics Review Committee Secretariat at the end of the study.

This approval is valid for the period, **14th September 2020** to **14th September, 2021**.

The Committee wishes you success in the execution of the study.

Yours faithfully,
TROPICAL DISEASES RESEARCH CENTRE

Edna Mwale Simbayi
SECRETARY – TDRC Ethics Review Committee

TROPICAL DISEASES RESEARCH CENTRE
ETHICS REVIEW COMMITTEE
14 SEP 2020
P.O. BOX 71769
NDOLA, ZAMBIA

Appendix 8: Letter of Authority to conduct research (NHRA)

NATIONAL HEALTH RESEARCH AUTHORITY
Paediatric Centre of Excellence, University Teaching Hospital, P.O. Box 30075, LUSAKA
Tell: +260211 250309 | Email: znhrasec@gmail.com | www.nhra.org.zm

Ref No: NHRA00007/25/09/2020 **Date: 25th September, 2020**

The Principal Investigator
Ms. Kalunga Cindy Nakazwe
Plot No. 990,
Off Twin Palm Mall Road,
Salama Park,
Lusaka.

Dear Ms. Nakazwe,

Re: Request for Authority to Conduct Research

The National Health Research Authority is in receipt of your request for authority to conduct research titled **"EXPLORING THE ROLE OF COPING MECHANISMS IN THE RELATIONSHIP BETWEEN PARENTING STRESS AND MENTAL HEALTH OF ADOLESCENT MOTHERS IN ZAMBIA."** I wish to inform you that following submission of your request to the Authority, our review of the same and in view of the ethical clearance, this study has been **approved** on condition that:

1. The relevant Provincial and District Medical Officers where the study is being conducted are fully appraised;
2. Progress updates are provided to NHRA quarterly from the date of commencement of the study;
3. The final study report is cleared by the NHRA before any publication or dissemination within or outside the country;
4. After clearance for publication or dissemination by the NHRA, the final study report is shared with all relevant Provincial and District Directors of Health where the study was being conducted, University leadership, and all key respondents.

Yours sincerely,

Prof. Godfrey Biemba
Director/CEO
National Health Research Authority

All correspondences should be addressed to the Director/CEO National Health Research Authority

Appendix 9: Approval Letter – Ministry of Health, Lusaka Province Office

All correspondence should be addressed to the Provincial Health Director
Telephone: +260 211 256813
Fax: +260 211 256814
Telephone: +260 211 256815
Cell: +260 956 399643
+260 963 908260

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH

In Reply please quote:

File No.:.....

LPHOLSK/101/8/1

Lusaka Provincial Health Office
P.O. Box 32573
LUSAKA

05th October,2020

Kalunga Cindy Nakazwe
Plot No. 990
Off Twin Palm Mall Road,
Salama Park
LUSAKA

RE: PERMISSION TO CONDUCT A RESEARCH

Reference is made to above subject matter.

Lusaka Provincial Health Office is in receipt of your letter requesting for permission to conduct a research entitled **"EXPLORING THE ROLE OF COPING MECHANISMS IN THE RELATIONSHIP BETWEEN PARENTING STRESS AND MENTAL HEALTH OF ADOLESCENT MOTHERS IN ZAMBIA.".**

My office is glad to inform you that it has no objection to your request provided that;

1. The relevant District Health Directors where the study is being conducted are fully appraised;
2. Progress updates are provided to Lusaka Provincial Health Office and the District Health Office biannually from the date of commencement of the study;
3. The final study report is cleared by NHRA before any publication or dissemination within or outside the country;
4. After clearance for publication or dissemination by NHRA, the final study report is shared with all relevant Provincial and District Directors of Health where the study was being conducted, University Leadership and all key respondents.

Kindly ensure minimum interruption in health service delivery to the selected health facilities you will undertake your research.

By copy of this letter, the District is advised to allow you undertake the above mentioned research and provide you with the relevant support.

MINISTRY OF HEALTH
LUSAKA PROVINCIAL HEALTH OFFICE
06 OCT 2020
PROVINCIAL HEALTH DIRECTOR
P. O. BOX 32573, LUSAKA

Dr Bushimbwa Tambatamba
Public Health Specialist
For/Provincial Health Director
LUSAKA PROVINCE

CC: The District Health Directors – Lusaka Province, Chief Medical Superintendent – UTH & SMS Levy - MUTH

Physical Address: 3 Saisc Road, Longacres, Lusaka, Zambia.

Appendix 10: Approval Letter – Ministry of Health, Lusaka District Office

All correspondence should be
No:.....
Director

Tel: +260-211-235554
Fax: +260-211236429

In reply please quote

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH

LUSAKA DISTRICT HEALTH OFFICE
P.O. BOX 50827
LUSAKA

7th October, 2020.

Kalunga Cindy Nakazwe (Ms)
Lingnan University
Hong Kong

Dear Ms. Nakazwe,

RE: AUTHORITY TO CONDUCT RESEARCH IN LUSAKA DISTRICT.

We are in receipt of your letter over the above subject.

Please be informed that Lusaka District Health Office has no objection for you to conduct research entitled **"Exploring the role of coping mechanisms in the relationship between parenting stress and mental health of adolescent mothers in Zambia".**

Kindly ensure that your findings are shared with the health facility and District Health Office and that the normal operations of the facility are not disrupted.

By copy of this letter, the In-Charges and Medical Superintendents for Health Facilities and First Level Hospitals, Lusaka District are kindly requested to facilitate accordingly.

Yours sincerely,

Dr. Agatha M. Lloyd
Public Health Specialist
For/District Health Director
LUSAKA DISTRICT HEALTH OFFICE

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH
LUSAKA DISTRICT MEDICAL OFFICE
07 OCT 2020
PRINCIPAL CLINICAL CARE OFFICER
P.O. BOX 50827
LUSAKA, ZAMBIA

C.c: The In-Charges: Lusaka District Health Facilities
C.c: The Medical Superintendents– Six (6) First Level Hospitals, **LUSAKA**
C.c: The Public Health Specialists–Six (6) First Level Hospitals, **LUSAKA**

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH
LUSAKA DISTRICT HEALTH OFFICE
12 OCT 2020
CHELSTON ZONAL HEALTH CENTRE
MEDICAL SUPERINTENDENT
P.O. BOX 50827, LUSAKA.

Appendix 11: Picture of NVivo Analysis Summary of Study 3

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