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COUNSELLING PSYCHOLOGY

PREVALENCE OF MAJOR DEPRESSIVE DISORDER AMONG PARENTS OF PREGNANT TEENAGERS AT AIC IN WAMUNYU DISTRICT CHURCH COUNCIL

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ABSTRACT

Purpose of the study: The purpose of this study was to evaluate the prevalence of major depressive disorder among parents of pregnant teenagers at AIC in Wamunyu District Church Council, Machakos County, Kenya

Problem statement: Statistics published by the World Health Organization (2020) showed that teenage/adolescent pregnancies are a global problem, and they occur in high-, middle- and low-income countries across the globe. However, WHO indicates that this phenomenon is more likely to occur in communities that are marginalized, driven by poverty, lack of education, unemployment, and disadvantaged communities. Statistics from African teenage pregnancy indicate that the phenomenon is on the rise. The systematic review of 52 studies among 254,350 participants from 24 countries from East, West, Central, North, and Southern Africa sub-regions showed the overall pooled prevalence of adolescent/teenage pregnancy in Africa was 18.8% and 19.3% in the Sub-Saharan African region. The same review showed that the prevalence of teenage pregnancy was highest in East Africa at 21.5% and lowest in Northern Africa at 9.2%. Consequently, according to a report, the rate of teen pregnancy in Kenya is becoming the highest in the world. When this happens, parents of teenage mothers are likely to undergo serious psychosocial challenges. Among these, is possibly high levels of Major Depressive Disorder. If this trend is not reversed, it is most likely that these parents will continue recording negative health outcomes.

Method/methodology: The study adopted a quasi-experimental design because the participants will be selected and assigned by the researcher and not by randomization. The study population included the parents of 378,397 teenagers aged 10-19 years who got pregnant in Kenya. The target population in this study will comprise all the parents of pregnant teenagers in Machakos County. A total sample size of 108 participants was used. Beck's Depression Inventory was used to assess the prevalence of MDD. Multivariance Analysis of Variance (MANOVA), Binary logistic regression, and independent sample T test were used to determine significant factor affecting MDD. ANOVA was done, and chi-square statistics were used to show differences between the independent and dependent variables.

Results of the study: The analysis revealed that none of the participants scored within the "Minimal Depression" range (0-9). A small group of participants, 8 (7.6%), scored in the "Mild Depression" range (10-18). The majority of participants, 49 (46.7%), were categorized as having "Moderate Depression," with scores ranging from 19 to 29. A similar proportion, 48 (45.7%), fell within the "Severe Depression" category, scoring between 30 and 63.

Conclusion and policy recommendation: The findings concluded that majority of the parents of teenage mothers (92.4%) had moderate to severe MDD. Recommendations were made to implement interventions that would support these parents.

Key Words: *Prevalence, Major Depressive Disorder, Teenage Mothers*

Introduction

One of the major public health phenomena is teenage pregnancy. It is defined as the incidence of pregnancy in girls between the ages 10 to 19 years (World Health Organization [WHO], 2017). Teenage pregnancy can also be used to describe teenagers who become pregnant when they are yet to reach the age of legal adulthood in their country (Cook & Cameron, Social issues of teenage pregnancy, 2015). Across the globe, it has been reported that over 16 million teenage girls give birth each year; this constitutes 11% of all births and over 90% of these births take place in developing African countries (Ganchimeg, et al., 2014). A review of 52 studies from 24 African countries showed that one out of five, which constituted 18.8% of African adolescents, get pregnant, out of which a higher proportion of this population came from the East African sub-region at 21.5% (Kassa, Arowojolu, Odukogbe, & Yalew, 2018). Further, a report has shown that Kenya has 378,397 teenagers aged 10-19 years who got pregnant between July 2016 and June 2019, and specifically, 28,932 teenagers aged 10-14 years and 349, 465 teenagers aged 15-19 years became pregnant (Muturi, 2021). As of 2019, statistics from Global Childhood Kenya indicated that Kenya has the third-highest teen pregnancy rate in Africa (Global Childhood Kenya, 2019).

Statistics published by the World Health Organization (2020) showed that teenage/adolescent pregnancies are a global problem, and they occur in high-, middle- and low-income countries across the globe. However, WHO indicates that this phenomenon is more likely to occur in communities that are marginalized, driven by poverty, lack of education, unemployment, and

disadvantaged communities. Meanwhile, data on global teenage pregnancies indicated that approximately 12 million teenagers aged 15-19 years and 770,000 girls below 15 years give birth each year in developing countries (WHO, 2019). In the United States of America, report shows that teenage pregnancies have been declining since 1991. For example, Martin, Hamilton, Osterman, and Driscoll (2021) argued that teenage pregnancy continued to decline from 17.4 per 1,000 females in 2018 to 16.7 per 1,000 females in 2019. A similar report indicates that in 2020, teenage birth rates fell 7% for females aged 15-17 years and 4% for females aged 18 to 19 years (Martin et al., 2021).

Statistics on teenage pregnancy in Europe were not different from those in Western countries, as the rate of this phenomenon was seen to be steadily declining. In the UK, for instance, studies show that teenage pregnancy and birth rates were higher compared to the rest of Europe; however, the rate has been slowly reducing (Cook & Cameron, 2017). Available data on teenage pregnancy in England and Wales showed that the rate of teenage pregnancy from 21.0 conceptions per 1000 girls aged 15-17 years in 2015, which constituted approximately 50% of the teenage conceptions in previous years, was reduced by .14% in 2017 (Cook & Cameron, 2017).

Statistics from African teenage pregnancy indicate that the phenomenon is on the rise. The systematic review of 52 studies among 254,350 participants from 24 countries from East, West, Central, North, and Southern Africa sub-regions showed the overall pooled prevalence of adolescent/teenage pregnancy in Africa was 18.8% and 19.3% in the Sub-Saharan African region. The same review showed that the prevalence of teenage pregnancy was highest in East Africa at 21.5% and lowest in Northern Africa at 9.2% (Kassa, Arowojolu, Odukogbe, & Yalew, 2018). Another recent study showed that the Republic of Congo had the highest prevalence of adolescent pregnancy at 44.3% and Rwanda was the lowest at 7.2% in the region (Ahinkorah, Kang, Perry, Brooks, & Hayen, 2021).

Consequently, according to a report, the rate of teen pregnancy in Kenya is becoming the highest in the world. (UNFPA Kenya, 2021). Data from the Kenya Data and Health Survey (2014) shows that 1 in every 5 girls between 15-19 years is either pregnant or already a mother. According to the United Nations Population Fund report, between July 2016 and June 2017, Kenya recorded 378,397 teenagers with pregnancies among girls aged 10-19 years. Unambiguously, 28,932 girls aged 10-14 and 349,465 girls became pregnant within a year. Additional Statistics in 2019 from the Global Childhood Kenya implied that Kenya had the third-highest teen pregnancy rate in the world, with 82 births per 1,000 births (Muturi, 2021). Another survey conducted by the Kenya Health Information System found that 3,964 under 19 were pregnant in Machakos County alone within three months of the COVID-19 lockdown. Out of this population, 200 teenagers are between the ages of 12 and 14. (Oduor, 2020).

The enumerated statistics on teenage pregnancy show that the occurrence is a social menace and a public health problem. The incident is detrimental to both the parents and the teenager because the teenage mother is not physically, psychologically, and economically ready to become a mother. This phenomenon has multiple adverse consequences on parental health, child health, and the

overall well-being of society (Mgbokwere, Esienumoh, & Uyana, 2015).

World Health Organization (2016) argued that parents of teenagers feel sad and at risk of developing depression and other mental health conditions, such as emotion dysregulation, whenever they hear that a teenage child is going to become a parent. According to the WHO, the parents and other family members might feel shock, anger, disappointment, and concern about their child's future. They could regret that they did not do enough to stop the pregnancy from happening, and they might wonder about what society, family members, friends, and community of faith will think of them. Also, findings from a study indicated that 80% of teenagers continue to reside with their family up to a year even after they give birth; with this, it is reasonable to expect that the unintended status of being a mother suddenly affects the teenager's family (Williamson, 2018).

Statement of the Problem

After Available data from WHO (2020) indicates that teenage pregnancy is a global problem. However, this phenomenon is predominant in low-income and developing countries. WHO (2019) added that countries driven by poverty and lack of employment opportunities are at risk of teenage pregnancies. Approximately 12 million teenagers aged 15-19 years give birth each year, and about 770,000 girls below 15 years become pregnant in developing countries. Statistics show that complications during pregnancy and childbirth among teenagers are the leading cause of death among girls aged 10-19 years (WHO, 2020). UNICEF (2021) added that teenage mothers aged 10-19 years face higher risks of puerperal endometritis and systemic infections than women aged 20 to 24 years, and babies of adolescents mothers face higher risks of low birth weight, pre-term delivery, and severe neonatal conditions.

A study by Kassa et al. (2018) showed that the proportion of teenage pregnancy was higher in East Africa at 21.5% compared to other African regions. UNFPA Kenya (2021) similarly reported that the rates of teenage pregnancy in Kenya were becoming the highest in the world as it showed that one in every five teenage girls is either pregnant or already a mother, which implied that Kenya had the third-highest teenage pregnancy rates in the world with 82 births per 1,000 births (Muturi, 2021). Lockdown due to COVID-19 made the situation worse as data showed that within three months, 152,000 Kenyan teenagers became pregnant specifically, the highest rates of teenage pregnancy in Kenya was recorded in Machakos County as about 40% of teenage pregnancies occurred in Machakos County within three months (Partridge-Hicks, 2020).

Many concentrations have been observed to study the predicaments of pregnant teenagers, but little or no attention was accorded to the parents of these teenagers. Reference WHO (2016) postulates that parents of teenage pregnancy experience sadness and are at risk of developing depression and other mental health conditions and might be unable to control and modulate intense emotions whenever they hear that their teenage/child is going to become a parent. Despite the fact that parents of teenage mothers are likely to record high levels of MDD, information on the prevalence is not known especially in Wamunyu DCC. Due to the fact that MDD has adverse

negative health outcomes, data on the prevalence of MDD is crucial to inform targeted and appropriate interventions. Therefore, this study is aimed at filling the obvious gap by evaluating the prevalence of MDD among the parents of pregnant teenagers in Machakos County of Kenya.

Research Objective

To evaluate the prevalence of major depressive disorder among parents of pregnant teenagers at AIC in Wamunyu District Church Council, Machakos County, Kenya.

Research Question

What is the prevalence of the major depressive disorder among parents of pregnant teenagers at AIC in Wamunyu District Church Council, Machakos County, Kenya?

Theoretical Framework

This study utilized Cognitive Behaviour Theory of Depression by Aaron T. Beck (1963, 1964). According to CBT, The construct of schema is central to the development of Beck's cognitive theory. The mental representations of the self and prior experiences that are relatively enduring characteristics of a person's cognitive organization are what Beck postulated to subsequently influence how the person perceives, encodes, and retrieves information regarding the prompting events. Beck (1976) proposed that individuals with negative schema are vulnerable to depression; this is because the occurrence of negative events triggers a pattern of negatively biased, self-referent information processing characterized by negative errors in thinking. Batmaz et al. (2015) argue that negative errors in thinking increase the likelihood that the individual will develop the negative cognitive triad, compromising three types of depressogenic thought patterns, namely, negative views of the self, negative views of the world, and negative views of the future. These negative cognitive triads were theorized to trigger the onset of depressive symptoms.

CBT is based on combining the basic principles of behavioral and cognitive psychology (Beck, 2011). Consequently, the evolution of CBT can be classified into four phases, namely, the emergence of behavior therapy in the USA, South Africa, and the United Kingdom in 1950-1970. The second phase was the beginning of cognitive therapy in the US in the 1960s and 1970s. Also, the merging of behavior therapy and cognitive therapy that birthed Cognitive Behaviour Therapy in the 1980s and the changing function of cognition instead of content in the last 15 years (Keegan & Holas, 2009).

Beck's theory of cognitive and behavior therapy claims that CBT helps clients discover the connection between thoughts and their behavior. Thus, CBT aims to change cognitive distortions and self-defeating behaviors. Bailey (2001) argued that the goal of CBT is to help people make adaptive instead of maladaptive appraisals. The technique of reappraisal, or cognitive restructuring, is a known fundamental aspect of CBT. The CBT approach uses cognitive restructuring techniques to help clients eliminate or modify inaccurate or maladaptive thoughts (Clark, Beck, & Alfford, 1999). In other words, an individual's cognitions play a significant and primary role in developing and maintaining emotional and behavioral responses to life situations. According to Beck, this is the basic principle of CBT; the major determinants of one's feelings

and actions in response to life events are cognitive processes. These cognitive processes are forms of meanings, judgments, appraisals, and assumptions, which are precursors of feelings and actions.

CBT is based on three fundamental assumptions of treatment. According to Dobson and Dozis (2001), the first assumption is that cognitive processes and content are accessible and can be known. Although, in many instances, specific thoughts or beliefs may not be in one's immediate awareness, individuals can become aware of them with proper training and practice. Further, the second key assumption is that an individual's thinking mediates the pattern of response to environmental cues. This implies that people do not just react emotionally or behaviorally to life events. Instead, CBT holds that the way we think about our reality is central to how we react to that reality. Additionally, the third major assumption of CBT is that such cognitions can be intentionally targeted, modified, and changed. Consequently, when such cognitions are changed toward more rational, realistic, and balanced thinking, the individual's symptoms will be relieved, and the person will have increased adaptability and functionality. This change can occur due to the individual's working alone, perhaps with self-help material, or through engagement with a trained practitioner in one of the various CBT approaches.

According to Corey (2017), the Cognitive Behavior Theory of depression has been proven to be effective, and this has translated into developing a therapy that has been empirically proven to be effective in changing negative thoughts and behaviors by developing positive solutions to issues a person is struggling with. This approach has helped several individuals with negative symptoms in the client's behaviour and thinking (Corey, 2017). Empirical clinical literature shows the strength of CB theory approaches to therapy to be effective in treating depression (Bailey, 2001). Other CBT scholars also attest to the comparative effectiveness of CBT in treating depression and that the effect sizes in controlled trials showed that the theory works better than treatments as usual (Batmaz et al., 2015; Egeland, 2014).

Empirical Review

A review of empirical literature obviously shows that there is little or no available existing data on the mental state of parents of pregnant teenagers. Several studies have been concentrated on teenage mothers; the feelings of parents who might feel disappointed seem to be ignored. For instance, Hodgkinson et al. (2010) examined depressive symptoms and birth outcomes among pregnant teenagers; the findings from the study showed that pregnant teenagers might have an increased risk for depression compared to non-pregnant teens and adults. A similar study found the prevalence of elevated depressive symptoms in adolescent mothers significantly increased from 19.8% to 35.2% over 17 years (Gavin, Lindhorst, & Lohr, 2011). The question the current researcher in this study is asking is, what about the parents of depressed pregnant teenagers?

A recent cross-sectional study among 828 pregnant teenagers who enrolled in the national public health system in Southern Brazil showed the prevalence of major depressive disorder at 17.8% (Coelho, et al., 2022). Results from a similar study on the prevalence and correlates of depression

among 1359 pregnant adolescents in primary maternal care in Nigeria by Oladeji et al. (2022) indicated that 18.1% of the participants were presented with MDD.

A higher prevalence of major depression was reported in a study among 1344 pregnant teenagers in Yaoundé, Cameroon, where 70% of the population was found to be depressed. (Nicolet, et al., 2021). Many other studies (CDC, 2021; Doherty, 2018; Eurostat, 2017; Mathewos & Mekuria, 2018) have also reported the prevalence of major depression among teenagers who got pregnant. The current researcher observed a huge gap in the sense that major depression among the parents of pregnant teenagers is an area that needs exploration. Notwithstanding, this study will explore to fill this missing gap.

Coelho et al. (2022) identified a number of significant risk factors that predict the onset of major depression among pregnant teenagers, including family history, childhood adversity, social isolation, and exposure to stressful life experiences. The researchers argued that adolescent mothers are disproportionately more likely to have a history of physical and sexual abuse and likely also to have restricted access to quality health care resources.

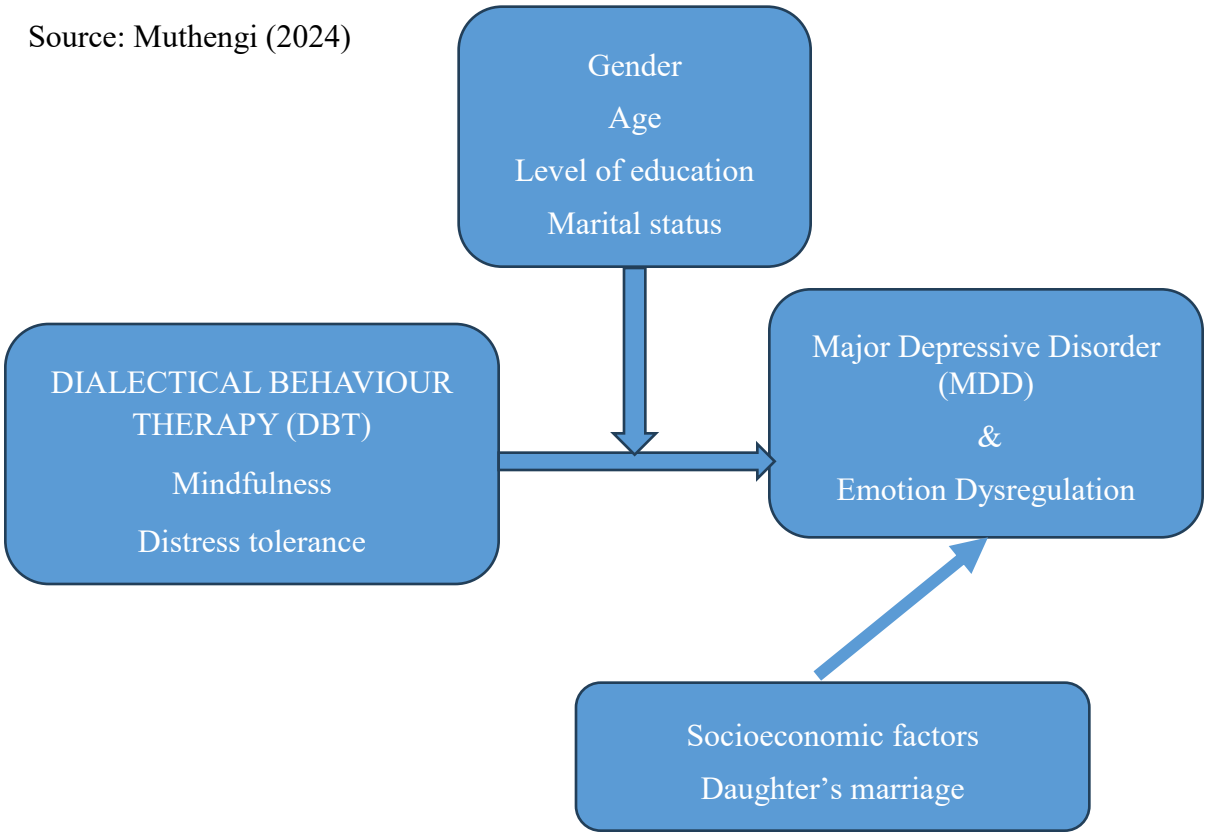
Additionally, Nicolet et al. (2021) found unintended or unplanned pregnancy, abortion experience, and domestic violence to be significant risk factors for major depression among pregnant adolescents. Likewise, food insecurity, younger age, not living with a partner, unemployment, higher anxiety, lower quality of life, and poorer attitudes towards pregnancy were found to put pregnant teenagers at risk of major depression (Oladeji et al., 2022). Again, what about the parents of pregnant teenagers? Will the occurrence of pregnancy have a negative effect on the parents? There also seems to be limited or no available data on the risk and protective factors of major depression among the parents of pregnant teenagers. This study, therefore, aims to explore this area to fill the gap.

Conceptual Framework

According to Shikalepo (2020), a conceptual framework is the end result of bringing together several related concepts to explain and give a broader understanding of the phenomenon under research. Further, the conceptual framework is the logical conceptualization of the entire research project, it is a metacognitive, reflective and operational element of the entire research process. (Kivunja, 2018). Therefore, in this present study, the underlisted conceptual framework emerges from wide and intensive review of relevant literatures, and links research projects to ongoing debate in the focus of the researcher.

Figure 1: Conceptual framework

Source: Muthengi (2024)



Discussion

The conceptual frame as indicated in Figure 1 shows how variables are interlinked, how researcher carried out the analysis and how subsequent model will look like. This study therefore consists of independent variables, dependent variable, effect modifiers and cofounders. According to Crossman (2020), the independent variable is a factor that the researcher measures and manipulates to determine its relationship to an observed phenomenon. In a study like this, independent variable is an antecedent condition that the researcher presumes to affect a dependent variable. It is a predictor variable because it helps predict the amount of variation that occurs in another variable. In this regard, the independent variable in this study, being an intervention experimental study, will be dialectical behaviour therapy (DBT). It is the independent variable in this study because the researcher will manipulate and measure DBT to determine its relationship to an observed phenomenon, which is a major depressive disorder.

Similarly, another variable in this study is the dependent variable. This variable is the principal focus of any research interest. According to Creswell (2014), the researcher in experimental research focuses on causal relationships, also known as functional relationships, and so, manipulates a variable to see its effects on another variable. Research begins with an effect and then searches for its causes. The manipulative variable, which in some instances could be more than one in number, is referred to as the independent variable, while the variable that is expected to be affected by the manipulation is called the dependent variable. The dependent variable, a

criterion or outcome variable, represents the presumed effect or consequence. Therefore, this study's consequential variable, the dependent or outcome variable, is a major depressive disorder. The researcher presumes major depressive disorder as a variable that manipulation of DBT will affect.

Confounders are another variable that the researcher considers in this study. This is a variable that is either assumed or excluded from the investigation but has to be controlled because it interferes with the relationship between the dependent and independent variable. This is practicable in experimental research, confounding variables are variables that may affect research outcomes but have not been adequately considered in the study (Gravetter & Forzano, 2018). Cofounders exist in all studies and can potentially affect the measurement of study variables and the relationship among these variables. Cofounders affect the outcome of the experiment probably in a hidden manner. Many of these confounding variables could preclude valid conclusions of the study. Many research conclusions are highly questionable because of the influence of these cofounding variables. The researcher identifies socioeconomic factors, daughter's marriage after found to be pregnant, and the family of teenager who impregnates their daughter as the cofounders in this study.

The final variable that the researcher in this study considers is effect modifiers. Effect modification describes the situation where the magnitude of the effect of an exposure variable on an outcome variable differs depending on a third variable (Leedy, 2019). In other words, the presence or absence of an effect modifier changes the association of exposure with the outcome of interest. In this study, the effect modifiers are age, gender, level of education, marital status, place of residence, and leadership position of the participants in the community or church because the dependent/outcome variable will differ depending on the third variable.

Methodology

This study utilized both quantitative and qualitative approaches. Therefore, a mixed-methods research approach was deemed appropriate. The researcher in this adopted an interpretive stance to seek to understand the subjective experiences of individuals and the meanings they attach to their experiences.

Specifically for this study and in keeping with the quasi-experimental design, parents of pregnant teenagers were recruited from AIC in Wamunyu District Church council, Machakos County, Kenya. The assignment of control and experimental group was done through simple random. Screening of the respondents was done at the baseline phase of the study to determine the eligible participants who will be recruited into the study. Both experimental and control groups were assessed immediately upon completing the treatment sessions (midline), and finally, the end-line assessment was conducted 10 weeks after treatment.

As adopted by this study, the study design is also known as a non-equivalent control group pre-test-post-test design (Angold, 2015). It is a quasi-experimental research design in which a dependent variable is measured in one group of participants before intervention (baseline), upon

completion of the intervention (midline) and end-line after the treatment, while the same dependent variable is also measured in the same manner and timing for another non-equivalent control group that does not receive the treatment (Angold, 2015). This design was suitable because it allowed scores to be compared before and after treatment and a non-equivalent control group that does not receive the treatment. (Egeland, 2014). The non-equivalent control group had characteristics similar to the experimental group (Barasa, 2015). Lastly, the design was appropriate because the researcher compared the array of modifications over time from before and after treatment; hence, it is a time series that includes a simple, interrupted, and controlled time-series design (Rahman, 2017).

The study population were all parents of 378,397 teenagers aged 10-19 years who got pregnant in Kenya (Muturi, 2021). The target population in this study comprised all the parents of pregnant teenagers in Machakos County. Since this was a quasi-experimental design with two groups, the study had 54 individuals in the experimental group and 54 in the control group. Therefore, a total sample size of 108 participants was utilized. This study employed a purposive sampling technique to select the study sample. In selecting the County and the selected church, the researcher used the purposive sampling method. Machakos County and AIC Wamunyu District Church were purposively selected based on evidence from previous data on teenage pregnancy in Machakos County. Similarly, AIC in Wamunyu District Church Council, Machakos County, Kenya, was also purposively selected. Parents of teenagers whose daughters between ages 10-19 years either got pregnant or already a mother and who live in Machakos County, and who is a member of AIC in Wamunyu district Church council, Machakos County, Kenya will be eligible to participate in the study. In addition, the eligible participants were willing and consented to participate in the study and voluntarily ready to be part of the study from the beginning to the end. Parents of the teenagers between ages 10-19 years whose daughters were not either pregnant or already a mother, who didn't live in Machakos County, and who were not a member of AIC in Wamunyu district Church council, Machakos County, Kenya were excluded from participating in the study. Eligible participants who were not willing and who declined from giving consent to participate in the study were excluded from the study.

The researcher utilized both the researcher-generated socio-demographic questionnaire (SDQ), and the standardized psychological assessments, namely Beck Depression Inventory (BDI) to collect data.

Upon acquiring the necessary approvals from an ethics review board, a research permit from the National Commission for Science, Technology and Innovation (NACOSTI), and authorization letters from the university and government institutions, the principal researcher commenced the study site entry processes in the selected church to recruit the participants. Three research assistants were recruited, inducted, and trained for one week and were taken through the administration of tools. The research assistants worked alongside the principal researcher to recruit the research participants.

Permission was sought from the church administrators where the study took place by presenting the permit from the university and NACOSTI and by explaining the purpose of the research and the benefits it would bring to the participants and the church at large. At this point, the research team was ready to proceed with collecting the baseline data, which included administering the socio-demographic questionnaire, and the Beck Depression Inventory-II (BDI-II).

Results and Discussion

The study sought to evaluate the prevalence of major depressive disorder among parents of pregnant teenagers at AIC in Wamunyu District Church Council, Machakos County, Kenya. The results were presented in tables 1.

Table 1: Participant's Scores on Major Depressive Disorder (Baseline)

Score	Frequency	Percent	Valid Percent	Cumulative Percent
17	3	2.9	2.9	2.9
18	5	4.8	4.8	7.6
19	3	2.9	2.9	10.5
20	3	2.9	2.9	13.3
21	7	6.7	6.7	20.0
22	7	6.7	6.7	26.7
23	6	5.7	5.7	32.4
24	3	2.9	2.9	35.2
25	4	3.8	3.8	39.0
26	2	1.9	1.9	41.0
27	4	3.8	3.8	44.8
28	4	3.8	3.8	48.6
29	6	5.7	5.7	54.3
30	8	7.6	7.6	61.9
31	4	3.8	3.8	65.7
32	5	4.8	4.8	70.5
33	3	2.9	2.9	73.3
34	7	6.7	6.7	80.0
35	3	2.9	2.9	82.9
36	2	1.9	1.9	84.8
37	3	2.9	2.9	87.6
38	1	1.0	1.0	88.6
39	2	1.9	1.9	90.5
40	1	1.0	1.0	91.4
41	5	4.8	4.8	96.2
42	1	1.0	1.0	97.1
44	1	1.0	1.0	98.1
45	1	1.0	1.0	99.0
48	1	1.0	1.0	100.0
Total	105	100.0	100.0	

Table 1 presents the baseline scores for Major Depressive Disorder (MDD) among the 105 study participants. The scores range from 17 to 48, with varying frequencies of participants falling within each score category. The most common depression score was 30, with 8 participants (7.6%) scoring at this level, followed by scores of 21, 22, and 34, each representing 6.7% of the sample. Other scores, such as 18, 29, and 32, had frequencies of 5 participants, corresponding to 4.8% of the total sample.

A total of 3 participants scored 17, which accounted for 2.9% of the sample, while 5 participants scored 18 (4.8%). The table shows that the depression scores were distributed relatively evenly, with no single score dominating the distribution.

The results were further presented in a line graph (figure 1).

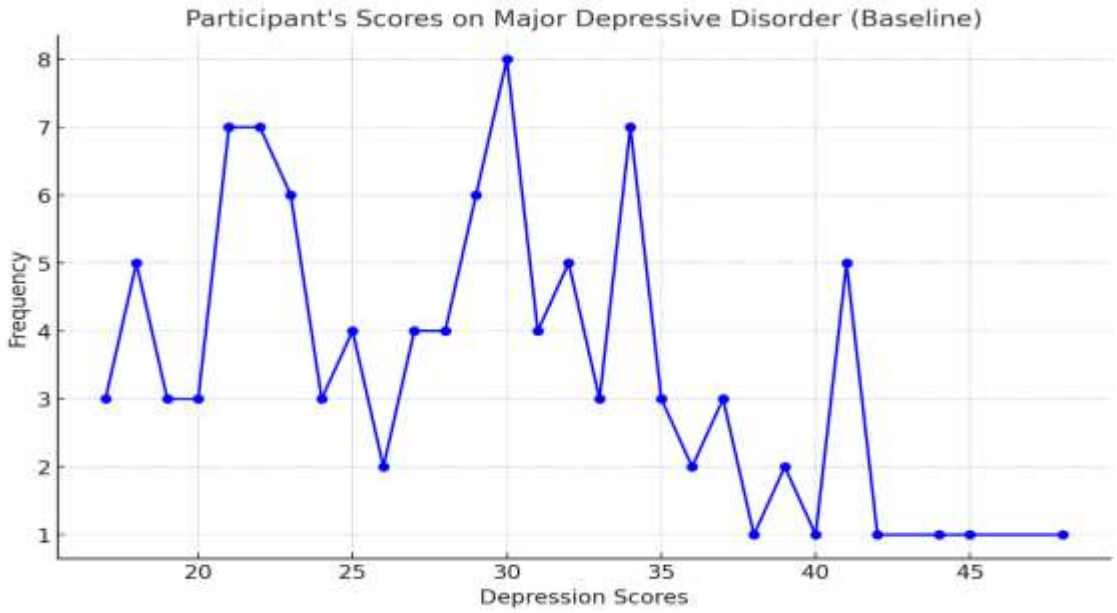


Figure 1: Participant's Score on Major Depressive Disorder

Further, it was prudent to establish the levels of major depressive disorder based on the BDI scores cut-offs. The results were presented in table 2.

Table 2: Major Depression Disorder Scores at Baseline (N=105)

Score	Interpretation	Frequency
0-9	Minimal Depression	0
10-18	Mild Depression	8
19-29	Moderate Depression	49
30-63	Severe Depression	48
	Total	105

Table 2 presents the distribution of Major Depression Disorder scores at baseline for the 105 participants in the study. The scores were categorized into four levels of depression severity. None of the participants scored within the "Minimal Depression" range (0-9). A small group of participants, 8 (7.6%), scored in the "Mild Depression" range (10-18). The majority of participants, 49 (46.7%), were categorized as having "Moderate Depression," with scores ranging from 19 to 29. A similar proportion, 48 (45.7%), fell within the "Severe Depression" category, scoring between 30 and 63. Overall, the data shows that most participants in the study experienced either moderate or severe depression at baseline, with only a few participants exhibiting mild depression.

These findings are crucial for understanding the emotional difficulties faced by the participants. The high prevalence of moderate to severe depression reflects the potential emotional dysregulation among these parents. Emotion dysregulation could be exacerbated by the stress, shame, or worry surrounding their children's pregnancies, leading to increased emotional instability. The finding that a substantial number of parents were experiencing moderate to severe depression suggests an urgent need for psychological intervention, such as DBT, to help mitigate the psychological distress and improve emotional well-being.

Comparing the experimental and control groups, the following results were obtained as presented in table 3:

Table 3: Participant's Total Scores on Depression at Baseline

Participant's total scores on depression at baseline	Participant's study group		
	Experimental Group	Control Group	Total
17	3	0	3
18	3	2	5
19	1	2	3
20	1	2	3
21	6	1	7
22	5	2	7
23	3	3	6
24	0	3	3
25	1	3	4
26	1	1	2
27	3	1	4
28	3	1	4
29	0	6	6
30	2	6	8
31	3	1	4
32	3	2	5
33	1	2	3
34	6	1	7
35	0	3	3
36	2	0	2
37	2	1	3
38	0	1	1
39	1	1	2
40	0	1	1
41	1	4	5
42	0	1	1
44	0	1	1
45	0	1	1
48	0	1	1
Total	51	54	105

Table 3 presents the total depression scores for participants for the participants in both the experimental and control group. In the experimental group, scores ranged from 17 to 45. A larger number of participants in this group had scores in the lower range, with 3 participants scoring 17 and 18, and progressively fewer participants with higher scores as the range increased. The highest depression score recorded in this group was 45, with 1 participant falling into this category.

In the control group, the depression scores also ranged from 17 to 48. A number of participants in the control group scored higher on the depression scale compared to the experimental group, with a notable concentration of scores in the mid to upper range. The highest depression score observed in the control group was 48, recorded by 1 participant.

The distribution of scores indicated that the majority of participants in both groups fell within the 19-29 score range, which reflects moderate depression. This was the most common category for

both groups. The table also showed that there were minimal instances of participants scoring in the minimal depression range (0-9) or the severe depression range (30-63).

A Chi-square run for the BDI scores at baseline revealed the following:

Table 4: Chi-Square Scores for MDD in Experimental and Control at Baseline

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	40.910[a]	28	.055
Likelihood Ratio	51.021	28	.005
Linear-by-Linear Association	4.796	1	.029
N of Valid Cases	105		

a. 58 cells (100.0%) have expected count less than 5. The minimum expected count is .49.

Table 4 presents the results of the Chi-Square test used to analyze the depression scores at baseline for both the experimental and control groups. The Chi-Square test aimed to determine if there was a statistically significant association between two categorical variables, the depression scores across the two groups.

The Chi-Square test for Major Depressive Disorder (MDD) at baseline for the experimental and control groups revealed the following results: Pearson Chi-Square (χ^2 (28) = 40.910, p = 0.055). This p-value, being slightly above the threshold of 0.05, suggested that there was no statistically significant difference between the depression scores of the two groups at baseline.

Discussion

The findings of this study revealed a high prevalence of Major Depressive Disorder (MDD) among parents of teenage mothers in Wamunyu DCC, Machakos County, Kenya. None of the participants scored within the "Minimal Depression" range (0–9), while only 7.6% (n=8) fell into the "Mild Depression" category (10–18). The majority of participants experienced significant psychological distress, with 46.7% (n=49) categorized under "Moderate Depression" (19–29), and 45.7% (n=48) exhibiting symptoms of "Severe Depression" (30–63). These findings suggest that depression is not only a concern for teenage mothers, as highlighted in numerous previous studies, but also a major concern for their parents, who may be emotionally, socially, and economically affected by their daughters' early pregnancies.

These results support the hypothesis that the psychosocial impact of teenage pregnancy extends beyond the teenage mother to her immediate family, especially the parents, who may experience psychological strain due to cultural stigma, financial burden, and concern for their child's wellbeing. While earlier studies primarily focused on the emotional and psychological toll on the teenage mothers themselves, this study introduces a new and underexplored dimension of mental health impact parental depression associated with adolescent pregnancy.

The study findings both align and diverge from prior research. For instance, Hodgkinson et al. (2010) established that pregnant teenagers are at increased risk for depression compared to their non-pregnant peers and adults. Gavin, Lindhorst, and Lohr (2011) further reinforced this by showing that the prevalence of elevated depressive symptoms in adolescent mothers had significantly risen from 19.8% to 35.2% over a 17-year period. While these studies center around the teenagers themselves, the current research shifts the focus to their parents—posing the critical question: what about the mental health of those who must support and care for these pregnant teens?

In global contexts, Coelho et al. (2022) found a 17.8% prevalence of MDD among pregnant teenagers in Southern Brazil, and Oladeji et al. (2022) found a similar rate of 18.1% among adolescent mothers in Nigeria. These findings indicate relatively moderate levels of depression among pregnant teenagers. However, Nicolet et al. (2021) observed a much higher prevalence of depression (70%) among pregnant teenagers in Yaoundé, Cameroon, suggesting regional variation and the potential influence of cultural and socio-economic factors.

What distinguishes the current study is its focus on the parents of these pregnant adolescents. The findings revealed an even higher prevalence of MDD among parents (over 92% presenting with moderate to severe depression) than those typically reported among the teenage mothers themselves in most reviewed studies. This suggests that the burden of adolescent pregnancy may be even more deeply felt by the parents—individuals who are often overlooked in both research and mental health interventions.

The Centers for Disease Control and Prevention (CDC, 2021), as well as other studies such as those by Doherty (2018), Eurostat (2017), and Mathewos & Mekuria (2018), have documented widespread emotional and psychological challenges among pregnant teenagers, yet rarely have they extended this lens to the emotional status of their caregivers. The current study highlights this critical gap and underscores the need for targeted mental health interventions for families, not just the adolescents, in contexts where teenage pregnancy is prevalent.

Conclusion

The findings of this study call for an urgent re-evaluation of current mental health frameworks and interventions that primarily focus on teenage mothers while often neglecting their immediate support systems. It is evident that the psychological wellbeing of parents—especially in contexts marked by stigma, economic strain, and disrupted family dynamics—is significantly impacted by adolescent pregnancy. Therefore, mental health policies and programs must adopt a more inclusive, family-centered approach that not only addresses the needs of the teenage mothers but also provides psychosocial support for their parents.

Recommendations

The study recommended that counseling services, community-based mental health programs, and parent support groups should be integrated into adolescent reproductive health initiatives to ensure that families are holistically supported. Additionally, healthcare workers, educators, religious leaders, and social workers should be sensitized to recognize signs of depression not just in adolescent mothers, but also in their caregivers. By doing so, interventions can be more effective, culturally sensitive, and sustainable.

Future research should delve deeper into the lived experiences of parents of teenage mothers to better understand the underlying causes of their psychological distress, the coping mechanisms they adopt, and the social structures that either support or hinder their mental wellbeing. Such insights will be critical in designing context-specific interventions that improve the overall resilience and stability of families affected by teenage pregnancy. Ultimately, addressing the mental health needs of both adolescents and their parents is essential for breaking cycles of vulnerability and fostering healthier family and community outcomes.

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