RESILIENCE, PERCEIVED PREGNANCY-RELATED STRESS AND ASSOCIATED FACTORS AMONG PREGNANT REFUGEE ADOLESCENT GIRLS IN RHINO CAMP REFUGEE SETTLEMENT, NORTHWESTERN UGANDA

CATHERINE. N NAFULA

RJ21M07/207

A DISSERTATION SUBMITTED TO THE FACULTY OF PUBLIC HEALTH, NURSING AND MIDWIFERY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF THE MASTER OF PUBLIC HEALTH LEADERSHIP OF UGANDA CHRISTIAN UNIVERSITY

April,2025

UGANDA CHRISTIAN UNIVERSITY
A Centre of Excellence in the Heart of Africa

DECLARATION

I **Catherine N Nafula** declares that this research study **exploring the association between** resilience and perceived pregnancy-related stress among pregnant refugee adolescent girls living in Rhino Camp Refugee Settlement, North-Western Uganda is my original work and has never been submitted to any other institution for the award of Master of Public Health

Signed:  Date: APRIL 8 2025

Catherine N Nafula

Registration number: **RJ21M07/207**

SUPERVISOR APPROVAL

This is to certify that the dissertation was conducted under my supervision and submitted with my approval as a requirement for the partial fulfillment of the award of Master of Science in Public Health.

Signed:  Date: April 8th, 2025.

Samuel Otoober

DEDICATION

This dissertation is dedicated to my esteemed mother, Ms. Agnes Auma, and my late father, Samuel Natandula, whose sacrifices and unwavering dedication have been instrumental in laying the foundation for my achievements, a gift I deeply cherish. To my siblings, Middy, Joseph, Moses, Jeff, Brenda, Olivia, Sylvia, and Barbra, your steadfast support and encouragement have been invaluable. May the Almighty God I serve bless you all and honor the legacy that you and your generation have established.

ACKNOWLEDGMENTS

I express profound gratitude to the Almighty God for His glory and honor, which guided me throughout this journey. I extend my sincere appreciation to all those who contributed to the development of this dissertation. Their insightful advice, engaging discussions, and unwavering encouragement were invaluable for this study. Despite the passing of my beloved father, the late Samuel Natandula, two months before my enrollment at UCU, my devoted mother, Agnes Auma, continued to provide financial support throughout my education. To my dear sisters, Middy, Brenda, Olivia, Sylvia, and Barbra, I am grateful for your support, laughter, and inspiration, which motivated me to persevere, even when the journey seemed arduous. To my brothers Joseph, Moses, and Jeff, I thank you for your continued mentorship, guidance, and unconditional love.

I wish to express my heartfelt gratitude to Dr. Samuel Otoober, my esteemed academic mentor and supervisor, for his unwavering support and guidance. His encouragement allowed me the autonomy to pursue this research independently. I am also indebted to my lecturers, Rev. Canon Evatt Mugarura and Madam Jackline Kobusingye, for their understanding and assistance in editing and refining my work. This achievement would not have been possible without their support.

I am grateful to the late Assistant Settlement Commandant of Rhino Camp, Mr. Nicolas Tayebwa, for his relentless support of this study. I thank the International Rescue Committee (IRC) in charge of Health in Rhino Camp for their participation. Special thanks to Mr. Paul Kenya, Head of Sub Office-UNHCR Arua, and Madam Jena, the Office of the Prime Minister representative, for providing the conditions that facilitated this study.

Finally, I would like to thank Mr. John Makoha, the Country Representative of the AVSI Foundation, for his mentorship and advice on maintaining resilience in my professional pursuits. I am also grateful to the AVSI Foundation for supporting my MPHL through the Study Fund, which has equipped me with the confidence to work in the humanitarian field.

Table of Contents

LIST OF TABLES

LIST OF FIGURES

GLOSSARY OF TERMS

Adolescence, defined as the age range from 10 to 19 years or the transitional phase between childhood and adulthood (Sawyer et al., 2012), is characterized by maturation involving physical, cognitive, behavioral, and psychosocial transformations (Diers, 2013).

Pregnancy-related stress refers to the emotional, psychological, and physical strain experienced by women during pregnancy, arising from concerns about their health, the health of the fetus, childbirth, parenting, financial stability, social support, and other life pressures. This form of stress is distinct from general stress, as it is specifically associated with the demands and uncertainties inherent to pregnancy. Elevated pregnancy-related stress can adversely affect maternal well-being and pregnancy outcomes.

Resilience is defined as a collection of personal and contextual resources that enable individuals to mitigate the impact of stressors on their lives.

Social capital refers to the networks of relationships among individuals residing and working within a particular society, encompassing interactions between individuals, social networks, prevailing norms, and resultant trust.

ACRONYMS AND ABBREVATION

HIV	Human Immunodeficiency Virus
IAWG	Inter-Agency Working Group for Reproductive Health in Crises
SRH	Sexual Reproductive Health
SRHR	Sexual Reproductive Health and Rights
STIs	Sexually Transmitted Infections
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees

ABSTRACT

Introduction. This study examined the relationship between resilience and perceived pregnancy-related stress among pregnant adolescent refugees in the Rhino Camp Refugee Settlement in Northwestern Uganda. The primary objectives were to determine the prevalence of perceived pregnancy-related stress and to assess the association between resilience and pregnancy-related stress in this population sample.

Methodology. A cross-sectional design was used, incorporating both quantitative and qualitative methods. A total of 249 participants were recruited using systematic random sampling, with the sample size calculated based on an estimated adolescent pregnancy prevalence of 21.5% among Ugandan refugees. Quantitative data were analyzed using descriptive statistics and logistic regression to explore the associations between resilience, stress, and other variables. Qualitative data were analyzed thematically to identify key patterns and themes in the participants' experiences.

Results. Among the respondents, 77.2% (186) exhibited low resilience, and 80.5% (194) reported moderate pregnancy-related stress. There was a significant inverse correlation between resilience and perceived pregnancy-related stress ($r = -0.15$, $p = 0.02$). Multivariate analysis identified three independent predictors of increased pregnancy-related stress: lack of parental engagement in care (OR = 3.56, CI: 1.65–7.71), male partner rejection of the pregnancy (OR = 3.43, CI: 1.45–8.12), and reported feelings of shame (OR = 3.39, CI: 1.01–11.34).

Conclusion. The findings indicate a significant inverse association between resilience and perceived pregnancy-related stress among pregnant adolescent refugees in Rhino Camp. Older adolescents and those who received greater parental support, which reflects higher social capital, demonstrated higher resilience. These results underscore the importance of social support and resilience as critical factors in mitigating pregnancy-related stress among adolescent refugees.

Key Words: Adolescent pregnancy; Resilience; Pregnancy-related stress; Refugees Social support; Uganda

CHAPTER 1: INTRODUCTION

1.1 Background of the Study

Pregnant women frequently face an elevated risk of mental health disorders, including anxiety, depression, and self-harm. It is estimated that 21 million girls aged 15–19 in developing regions become pregnant annually, with 12 million of these pregnancies culminating in childbirth (Mattelin et al., 2024). A systematic review investigating the global prevalence of antenatal depression identified a pooled prevalence rate ranging from 15% to 65% in low- to middle-income countries (Agaba, 2024; Nakisita et al., 2023; Zemene et al., 2024). Despite a reduction in the global adolescent birth rate from 64.5 births per 1,000 women aged 15-19 years in 2000 to 41.3 births per 1,000 women in 2023, adolescent pregnancies continue to pose a significant public health challenge, particularly in less developed regions (Iliadou et al., 2019). This underscores the urgent need for comprehensive interventions to address the unique challenges faced by adolescent mothers worldwide.

Adolescent pregnancies pose considerable health risks to both mothers and infants (Sedgh et al., 2015). Adolescent mothers are vulnerable to life-threatening conditions, such as eclampsia, puerperal endometritis, and systemic infections (Jennings et al., 2019). Infants born to adolescent mothers face an elevated risk of low birth weight, preterm delivery, and severe neonatal complications (Marvin-Dowle & Soltani, 2020). These pregnancies have far-reaching implications, affecting the social, educational, and economic well-being of young mothers, their children, their families, and the broader health sector (Chandramouli et al., 2013). Addressing these issues comprehensively is crucial for breaking the generational cycle of poverty and adverse health outcomes. Teenage pregnancy is a significant public health challenge, particularly in many African nations (Asnong et al., 2018; Ayalew et al., 2022; Miller & Rasmussen, 2017). It is linked to increased adverse maternal and neonatal outcomes and substantial social, educational, and economic consequences (Kassa et al., 2018). Adolescent pregnancies are notably prevalent in vulnerable communities, such as among refugees (Bogic et al., 2015; Jennings et al., 2019; Soeiro et al., 2023). Therefore, it is imperative to address adolescent pregnancies to mitigate the negative life trajectories they entail and enhance the well-being of the affected communities.

Africa hosts the largest population of refugees, approximately 30 million, constituting nearly one-third of the 117.2 million refugees worldwide (Agaba 2024; Kamugisha et al. 2024). Notably, over half of these refugees are girls under 18 years of age. Uganda, the focal point of this study, is Africa's leading refugee-hosting nation, accommodating over 1.6 million refugees (Agaba, 2024). A recent systematic review identified that adolescent refugee girls encounter distinct and intensified challenges, which exacerbate the risks and consequences associated with pregnancy-related stress

(Kamugisha et al., 2024). Another systematic review posits that restricted access to healthcare, education, and social support within refugee settings significantly heightens vulnerability (Jennings et al., 2019). Similarly, systematic reviews indicate that factors such as poverty, fragile social networks, stigma surrounding sexual and reproductive health (SRH), violence, and limited educational and employment opportunities substantially contribute to teenage pregnancies in refugee communities (Daalen et al., 2021; Jennings et al., 2019; Soeiro et al., 2023). Addressing these issues within the refugee context is imperative to enhance the health and well-being of young women and their children.

Resilience, conceptualized as a set of personal and contextual resources that assist individuals in mitigating stressors, may play a pivotal role in alleviating pregnancy-related stress among pregnant refugee adolescents (Hajure et al., 2024). A systematic review identified resilience as a protective factor against pregnancy stressors and consequent adverse maternal and neonatal outcomes in low-income countries (Daalen et al., 2021; Hajure et al., 2024).

Since the 1960s, Uganda has actively provided assistance to refugees. The most recent influx, which commenced in mid-2016, represents the largest influx the nation has ever experienced. This surge is primarily attributed to instability in the Democratic Republic of Congo (DRC) and the ongoing conflict in Sudan, which culminated in the creation of South Sudan. Consequently, a significant number of individuals, particularly from the DRC and South Sudan, have sought refuge in Uganda. Most of these refugees have been accommodated in camps in northwestern Uganda, specifically within the Arua District's Rhino Camp settlements (Agaba, 2024). The establishment of the Bidi-Bidi camp in the Yumbe District, situated in the West Nile Region, was necessitated by the recent outbreak of conflict in South Sudan during July and August 2016. As of October 2016, the Bidi-Bidi camp housed 300,000 registered refugees, while the Rhino Camp accommodated 63,370 refugees, predominantly from South Sudan. Resettlement agencies reported receiving no fewer than 1,000 refugees daily since June 2017 (Agaba, 2024; Kamugisha et al., 2024; Nakisita et al., 2023).

For the first time in the nation's history, the number of refugees exceeded one million, with certain regions in Northwestern Uganda, such as Obongi and Adjumani, hosting more refugees than local residents. Refugees endure highly stressful conditions due to trauma experienced before and after migration, rendering them particularly susceptible to mental health issues, trauma, and stress, which can be exacerbated by pregnancy-related hormonal changes (Kamugisha et al., 2024). This study provides evidence of the challenges and vulnerabilities faced by Uganda's refugee population. Specifically, addressing the complex issue of teenage pregnancies within refugee communities necessitates an understanding of their unique challenges, which is essential for

developing and implementing resilience-based interventions for young mothers and their children in the future.

1.2 Problem Statement

Pregnant adolescent refugee girls represent a highly vulnerable and underserved demographic, confronting a confluence of risks that jeopardize their physical, psychological and social well-being. As of May 2024, Uganda hosts approximately 1.7 million refugees, 24% of whom are adolescents, and struggles to address the multifaceted needs of this rapidly expanding and youthful refugee population (UNHCR, 2024). In settlements such as Rhino Camp, the majority of adolescent refugees have fled protracted conflict, family disruption, and poverty in countries such as South Sudan and the Democratic Republic of the Congo. Within these displacement contexts, adolescent girls are disproportionately exposed to early and often coerced sexual activity, which can lead to unintended pregnancies. Pregnancy among adolescent refugees presents significant challenges, being associated with heightened risks of maternal and child morbidity, school dropout, social exclusion, economic dependency, sexual and gender-based violence, and exposure to unsafe abortions and sexually transmitted infections, including HIV (Hajure et al., 2024). These biological and social adversities are exacerbated by severe psychological burdens such as shame, self-hatred, loneliness, stigma, and chronic stress.

Despite numerous global and national initiatives aimed at addressing adolescent pregnancy and supporting pregnant adolescents in humanitarian contexts (Jennings et al., 2019), the prevalence of teenage pregnancy remains notably high within settlements, with a reported 21% in Rhino Camp, according to 2021 DHIS2 data. This highlights the persistent policy and programmatic deficiencies. Efforts to mitigate the consequences of adolescent pregnancy frequently fail to adequately consider the complex interactions between mental health, psychosocial stress, and resilience capacity, particularly within fragile refugee environments characterized by resource scarcity, displacement, and weakened social networks.

Inadequate recognition and management of pregnancy-related stress and its determinants among adolescent refugee girls have significant public health implications. This oversight elevates the risk of adverse health outcomes for both mothers and infants, perpetuates cycles of poverty and exclusion, and undermines Uganda's commitment to the health and rights of refugees and adolescents. A focused understanding of these challenges is crucial for ensuring equity, enhancing maternal and adolescent mental health outcomes, and informing humanitarian and health policies in one of the world's largest refugee-hosting nations.

1.3 General Objective and purpose of the study

To establish the perceived pregnancy-related stress, resilience, and associated factors among pregnant refugee adolescent girls in the Rhino Camp Refugee Settlement of Northwestern Uganda.

1.3.1 Specific Objectives

i. To determine the emotional experiences among refugee pregnant adolescents in Rhino Camp refugee settlement, Northwestern Uganda.

ii. To establish the prevalence of perceived pregnancy-related stress among refugee pregnant adolescents in Rhino Camp Refugee Settlement, Northwestern Uganda.

iii. To assess the factors associated with resilience and perceived pregnancy-related stress among pregnant refugee adolescent girls in Rhino Camp, Refugee Settlement, Northwestern Uganda.

1.4 Study Questions

To achieve the purpose of the study, three main research questions arising from the research objectives will be asked.

i. What are the emotional experiences of pregnant refugee adolescents in Rhino Camp Refugee Settlement, Northwestern Uganda?

ii. What is the prevalence of perceived pregnancy-related stress among pregnant refugee adolescents in Rhino Camp, Refugee Settlement, Northwestern Uganda?

iii. What are the associated factors between resilience and perceived pregnancy-related stress among pregnant refugee adolescent girls in Rhino Camp, Refugee Settlement, Northwestern Uganda?

1.5 Study Scope (Geographical, Content, and Time)

The study scope covers the geographical description, content, and time below

1.5.1 Geographical Scope

The research was conducted in the Rhino Camp Refugee Settlement, located in Northwestern Uganda. Originally established in 1980, Rhino Camp experienced significant growth due to the civil war in South Sudan and currently hosts over 140,000 refugees, primarily South Sudanese. The settlement spans areas within the Odupi, Omugo, and Uriama sub-counties in the Terego District and extends into the Rigbo sub-county of the Madi Okollo District. Despite the provision of healthcare, education, and social support services, refugees, particularly adolescent girls, face considerable

challenges. This site was chosen for the study because of the high number of pregnant adolescent girls experiencing perceived pregnancy-related stress. A collaborative survey conducted by the SGBV Working Group in Rhino Camp (Kamugisha et al., 2024) indicated that over 600 refugee girls reported experiencing stress.

1.5.2 Content Scope

This study aimed to comprehend the prenatal mental health of adolescent refugee girls. Specifically, this study sought to assess perceived pregnancy-related stress and examine the role of resilience in enhancing the mental health and well-being of pregnant adolescent refugee girls in Uganda.

1.5.3 Time

This cross-sectional electronic study, conducted over four months, aimed to investigate pregnancy-related stress and its interrelations among pregnant adolescent refugee girls residing in Rhino Camp, a refugee settlement in Northwestern Uganda.

1.6 Justification of the Study

Although various interventions exist to address pregnancy-related stress among pregnant adolescent refugee girls at the Rhino Camp Refugee Settlement, there remains a significant knowledge gap regarding strategies that specifically target the unique stressors faced by this population. The health risks associated with pregnancy-related stress in this group are substantial, including increased rates of hypertension, cardiovascular disease, preterm labor, and low birth weight.

This study aimed to determine the prevalence of pregnancy-related stress and investigate the association between resilience and pregnancy-related stress among pregnant adolescent refugees. By examining the interplay between resilience and perceived stress, this study addresses a critical gap in understanding how psychosocial factors impact health outcomes in adolescent refugee girls. The findings not only contribute to the existing body of knowledge in Uganda but also provide evidence-based recommendations for strengthening resilience and addressing mental health challenges among young refugees in similar settings.

1.7 Study Significance

Despite Uganda's progressive refugee policies, pregnant adolescent refugee girls continue to experience significant challenges that place them at a heightened risk of adverse mental health outcomes. In settings such as the Rhino Camp Refugee Settlement, persistent resource shortages, overwhelmed healthcare and education systems, inadequate housing and sanitation, and limited social support networks compound the unique stresses associated with adolescent pregnancy. While Uganda offers refugees the right to move

freely, work, and access national services, the practical application of these entitlements is frequently constrained by high refugee numbers and a lack of funding.

Current understanding of how pregnant adolescent refugees manage pregnancy-related stress is limited, particularly regarding the factors that foster resilience within this vulnerable group. Supportive relationships and community resources may mitigate stress, but little empirical evidence exists to inform interventions or policies in the Ugandan context. Inadequate attention to the mental health needs of pregnant adolescent girls risks leaving their unique vulnerabilities unaddressed.

This pressing gap underscores the need for research focused on identifying the determinants of pregnancy-related stress and resilience among pregnant adolescent refugee girls. By generating evidence on the role of resilience and the contextual factors that enhance or undermine mental well-being, this study aims to inform the design of effective targeted strategies to support mental health and psychosocial outcomes for this population. Addressing this knowledge deficit is essential for guiding humanitarian organizations, service providers, and policymakers in developing responsive interventions and policy measures tailored to the realities faced by adolescent refugee girls in Uganda's refugee camps.

1.8 Conceptual Framework

The figure below indicates the conceptual framework for the study

Figure 1: Conceptual Framework

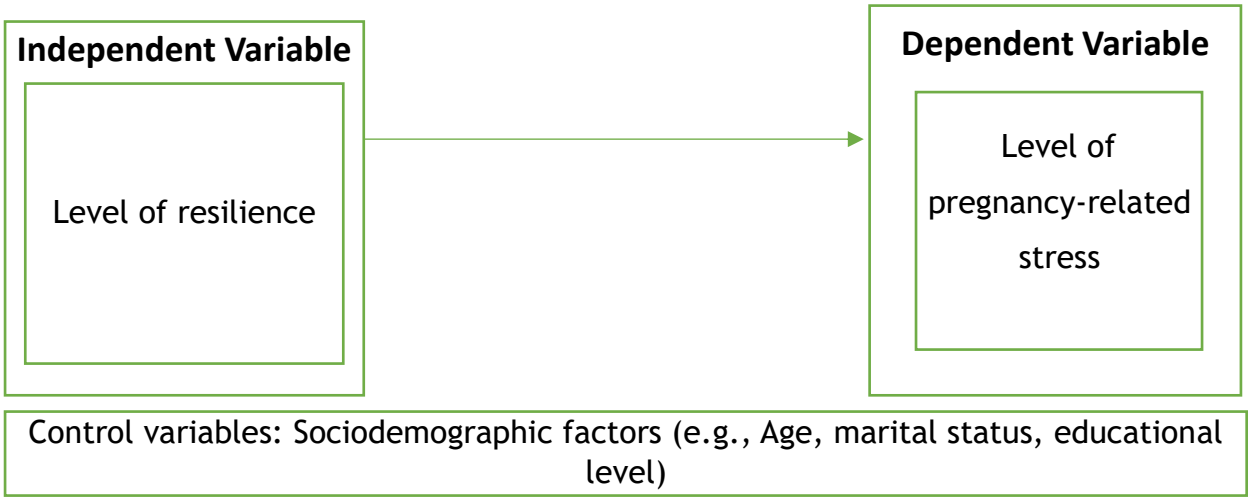


Figure 1: Conceptual Framework

The conceptual framework of this study is grounded in resilience theory, which asserts that individuals have the capacity to recover and flourish despite significant adversity. In the context of pregnant refugee adolescent girls, resilience is a crucial factor in managing and mitigating pregnancy-related stress. The theory highlights several essential components that enhance an individual's ability to cope with stress, leading to the hypothesis that pregnant refugee adolescent girls with higher resilience will experience reduced perceived pregnancy-related stress. By concentrating on fostering resilience, this study aims to offer a comprehensive approach to supporting pregnant refugee adolescent girls in navigating the complex intersections of pregnancy, adolescence, and refugee status.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

Numerous publications, including journals, articles, and reports, have addressed resilience-based interventions and stress among pregnant refugee adolescents, offering significant insights into this research area. However, the existing literature is not comprehensive. This study contributes to the academic understanding of pregnant adolescent girls by addressing the gaps identified in previous publications, as discussed below.

2.1 Pregnancy-related stress among refugee pregnant adolescents

Pregnancy-related stress is a significant concern among pregnant refugee adolescents, a demographic that encounters unique challenges due to the intersection of displacement and the physical and emotional demands of pregnancy. The literature on this subject highlights the multifaceted nature of stress within this group, emphasizing individual and contextual factors. For instance, refugee adolescents are particularly susceptible to elevated stress levels during pregnancy because of their exposure to pre-migration trauma, ongoing instability in refugee camps, and limited access to healthcare services (Nakisita et al., 2023; Adhena & Fikre, 2023). These stressors can exacerbate pregnancy-related complications and adversely affect maternal and fetal health outcomes. Furthermore, evidence underscores the importance of addressing social support systems to alleviate stress (Adhena & Fikre, 2023; Rowe et al., 2023).

Research evidence underscores the critical importance of social support in mitigating pregnancy-related stress among pregnant refugee adolescents (Miller & Rasmussen, 2017). These adolescents face a unique combination of stressors, including pre-migration trauma, ongoing instability within refugee camps, and limited access to healthcare services (Ayalew et al., 2022; Bogic et al., 2015; Chandra-Mouli et al., 2013; Rowe et al., 2023). The cumulative impact of these stressors exacerbates pregnancy-related complications, adversely affecting both maternal and fetal outcomes (Bedaso et al., 2021; Lynn et al., 2011; Marvin-Dowle & Soltani, 2020; Rm et al., 2020). Furthermore, socio-economic challenges, such as poverty and lack of educational opportunities, intensify the stress experienced by these adolescents (Asnong et al., 2018; Miller & Rasmussen, 2017). Addressing these challenges through targeted financial aid, vocational training, and educational programs can provide the necessary support to alleviate the economic burden. Longitudinal research is also essential for understanding the long-term effects of pregnancy-related stress on mothers and their children, thereby informing the development of comprehensive, context-specific interventions.

Addressing these stressors requires a multifaceted approach. Robust social networks and supportive relationships within refugee communities can substantially mitigate perceived stress (Jong, 2017; Sedgh et al., 2015; Soeiro et al., 2023). Findings from systematic reviews indicate that social integration and access to community resources are crucial for bolstering resilience among pregnant refugee adolescents. Effective interventions may include establishing strong community support systems, providing psychosocial counseling, and ensuring access to adequate prenatal care (Mattelin et al., 2024).

Despite these insights, significant gaps remain in the literature. Notably, while numerous studies emphasize the psychological dimensions of stress, there is a paucity of research addressing the socioeconomic challenges contributing to pregnancy-related stress among adolescent refugees. Furthermore, there is a pressing need for longitudinal studies to elucidate the long-term effects of pregnancy-related stress on both mothers and their offspring (Akgör et al., 2022; Olajubu et al., 2021; Tuxunjiang et al., n.d.; Wagnild & Collins, 2019). Consequently, the extant literature offers a foundational understanding of the factors contributing to pregnancy-related stress among pregnant refugee adolescents. However, additional research is imperative to inform the development of comprehensive, context-specific interventions that address both the psychological and socio-economic dimensions of this issue.

2.2 Resilience among refugee pregnant adolescents

The literature underscores the significance of resilience in alleviating pregnancy-related stress among adolescent refugees. Nonetheless, it is imperative to concentrate on specific resilience-based interventions, including social capital, mentorship, psychosocial support, and financial assistance to effectively address this issue.

2.2.1 Social Capital

Social capital, characterized by networks of relationships among individuals residing and working within a specific society, is crucial for bolstering resilience. The development of robust social networks can offer emotional support, facilitate information exchange, and provide practical assistance, all of which are indispensable for pregnant adolescents in refugee contexts (Miller & Rasmussen, 2017). For example, participation in group activities and community gatherings can cultivate a sense of belonging and collective resilience, thereby mitigating feelings of isolation and stress (Bedaso et al., 2021; Ivanova et al., 2019).

Notable instances of social capital programs include the "Women and Girls Safe Spaces" initiative implemented by the International Rescue Committee (IRC). This program establishes a supportive environment in which women and girls can access services, develop networks, and receive emotional support (Agaba, 2024; Kamugisha et al., 2024;

Nakisita et al., 2023). Empirical evidence indicates that these safe spaces significantly alleviate symptoms of depression and anxiety, enhance perceptions of safety, and improve the overall well-being.

2.2.2 Mentorship

Mentorship programs play a crucial role in enhancing resilience by offering guidance, support, and positive role models for pregnant adolescents (Iliadou et al., 2019; Olajubu et al., 2021). These initiatives provide practical advice, emotional support, and assistance in navigating the complex challenges associated with pregnancy and motherhood, particularly in the refugee context. The significance of mentorship is profound, as it cultivates a sense of stability and confidence among young mothers who frequently encounter challenging circumstances.

Mentors can significantly influence the lives of pregnant adolescents by sharing their experiences and offering reassurance during uncertain times. This relationship fosters trust and promotes open communication, which is crucial for addressing the emotional and psychological challenges associated with pregnancy (Holland et al., 2016; Magnani et al., 2005; Mattelin et al. 2024). Additionally, mentors can assist adolescents in accessing resources and services that they might otherwise be unaware of, such as health care, nutritional support, and educational opportunities.

Research has indicated that mentorship can lead to enhanced mental health outcomes by bolstering self-efficacy and mitigating feelings of isolation and anxiety. For example, Gagnon et al. (2002) demonstrated that adolescents participating in mentorship programs exhibit increased resilience and are better prepared to manage the challenges associated with pregnancy and early motherhood. These programs also promote the development of essential life skills, such as decision-making, problem-solving, and stress management, which are crucial during the transition to parenthood.

Mentorship programs play a crucial role in establishing a supportive community for pregnant adolescents and facilitating connections with peers who encounter similar challenges. This communal environment can mitigate the feelings of loneliness and alienation often experienced by young mothers, thereby providing a support network that extends beyond the mentor-mentee relationship (Gagnon et al., 2002; Kalisch et al., 2015; Singh et al., 2018). Group mentorship activities, such as workshops and peer discussions, further reinforce these connections and foster collective resilience. Consequently, mentorship programs are vital for bolstering the resilience of pregnant refugee adolescents. By offering guidance, support, and positive role models, these programs assist young mothers in navigating the complexities of pregnancy and motherhood, ultimately leading to improved mental health and better pregnancy outcomes.

2.2.3 Psychosocial Support

Psychosocial support, encompassing counseling and peer support groups, is integral to fostering resilience among pregnant refugee adolescents. Access to mental health services facilitates coping with the stress and trauma associated with displacement, thereby enhancing emotional well-being and pregnancy outcomes (Fearon et al., 2012; Lynn et al., 2011). Peer support groups, which provide a platform for adolescents to share their experiences and coping strategies, have proven effective in bolstering resilience and mitigating anxiety and depression (Miller & Rasmussen, 2017).

Recent research has underscored the effectiveness of various psychosocial interventions. For example, a meta-analysis by Bukuluki et al. (2021) demonstrated that structured group therapy sessions significantly alleviated symptoms of post-traumatic stress disorder (PTSD) and depression among refugee women in Uganda. Additionally, individual counseling, when tailored to the specific cultural and social contexts of refugee adolescents, has proven beneficial in reducing stress and enhancing resilience (Bukuluki et al., 2021; Fearon et al., 2012; Magnani et al., 2005). Moreover, integrating psychosocial support with other forms of assistance, such as educational programs and vocational training, provides a more holistic approach to improving mental health and resilience. For instance, Gagnon et al. (2002) indicated that when psychosocial support was combined with skill-building activities, participants exhibited higher levels of self-efficacy and reduced levels of perceived stress.

The integration of family- and community-based interventions can significantly enhance the efficacy of psychosocial support. Involving family members in the counseling process fosters a supportive environment that reinforces the coping strategies acquired during the therapy sessions. Community-based programs, such as social gatherings and cultural events, cultivate a sense of belonging and collective resilience, which can substantially mitigate feelings of isolation and stress (Bedaso et al., 2021; Bogic et al., 2015; Dadi et al., 2020). Consequently, a comprehensive approach to psychosocial support, which combines individual therapy, peer support, educational and vocational training, and community engagement, is crucial for addressing the unique challenges encountered by pregnant refugee adolescents. These interventions can markedly enhance resilience, resulting in improved mental health and pregnancy outcomes for both the mothers and their children.

2.2 Importance of resilience in enhancing maternal health during pregnancy

Resilience, defined as the capacity to adapt positively to stress and adversity, is integral to maternal health during pregnancy and childbirth. It influences both psychological well-being and pregnancy outcomes (Anisman et al., 2024). Elevated resilience levels have been correlated with diminished symptoms of depression and anxiety and

improved emotional stability, which are vital for both maternal and fetal health (Miller & Rasmussen, 2017). During pregnancy, a period characterized by substantial physical and emotional changes, resilience enables women to better manage stressors, thereby fostering a healthier pregnancy experience (Hajure et al., 2024; Holland et al., 2016; Rm et al., 2020). Effective stress management has been associated with a reduced incidence of preterm birth and postpartum depression (Asnong et al., 2018; Holland et al., 2016; Marvindowle & Soltani, 2020). In a study involving 531 pregnant women, those with higher resilience levels reported fewer symptoms of depression and enhanced overall emotional well-being (Wagnild & Collins, 2009).

Resilience plays a crucial role in facilitating social and psychological adaptation during pregnancies. It empowers pregnant women to maintain a positive perspective and effectively manage the challenges associated with pregnancy, thereby enhancing their self-esteem and confidence (Fearon et al., 2012; Id et al. 2020). This positive adaptation is particularly vital in socially vulnerable contexts, where stressors are prevalent and resilience can alleviate their adverse effects. Recognizing the essential role of resilience in maternal health highlights the necessity for interventions aimed at enhancing resilience among pregnant women, particularly in high-stress environments such as refugee settlements (Miller and Rasmussen, 2017). Such interventions can lead to improved pregnancy outcomes and better long-term health for both mothers and their children.

2.3 Resilience and pregnancy-related stress

Pregnancy is a period of heightened emotional sensitivity in women, primarily attributable to hormonal fluctuations. During this phase, women may also experience increased social vulnerability, susceptibility to minor health issues, and diminished productivity, necessitating enhanced care and support (Ayalew et al., 2022; Bogic et al., 2015). Although social interventions, such as enhancing social participation, have the potential to improve maternal health, the global maternal health agenda predominantly emphasizes essential interventions aimed at reducing maternal mortality (Miller and Rasmussen, 2017). Empirical evidence suggests that social support and robust social networks correlate with improved self-rated health during pregnancy and favorable pregnancy outcomes (Daalen et al., 2021; Hajure et al., 2024; Wagnild & Collins 2019). Nevertheless, a more comprehensive analysis of how social capital, as a resilience-based intervention, can alleviate pregnancy-related stress is needed. Social capital, defined as the relationships among individuals, social networks, prevailing norms, and resultant trust, plays a pivotal role in accessing medical services and influencing overall health outcomes (Lynn et al., 2011; Rm et al., 2020).

Individuals with higher levels of social capital are generally associated with a decreased incidence of mental health issues and lower stress levels. This is facilitated by enhanced

access to information and resources, bolstered self-worth, social support, and increased self-confidence (Miller & Rasmussen, 2017). Recent research conducted in refugee settlements in Uganda underscores the significance of social capital in fostering resilience among pregnant women. For example, Zemene et al. (2024) demonstrated that social networks and community support substantially alleviated stress levels among pregnant refugees in Uganda, highlighting the pivotal role of social capital in high-stress environments.

In addition to social capital, other forms of resilience, such as psychological and community resilience, are crucial. Psychological resilience pertains to an individual's capacity to mentally or emotionally manage a crisis and has been associated with improved pregnancy outcomes through mechanisms such as reduced anxiety and depression levels (Singh et al., 2018). Conversely, community resilience encompasses a wider range of factors, including social, economic, and institutional elements that collectively enhance the well-being of community members (Kassa et al., 2018).

Nevertheless, the literature reveals divergent findings regarding the effectiveness of these forms of resilience. While certain studies emphasize their positive effects, others highlight their limitations and contextual variations. For instance, Soeiro et al. (2023) contend that psychological resilience is highly subjective and may not be universally applicable across diverse cultural and socioeconomic contexts. Similarly, Bedaso et al. (2021) noted that community resilience is significantly influenced by existing social structures and resources, which may not be sufficiently developed in all regions. These discrepancies necessitate a more critical examination of how various forms of resilience interact and contribute to the mitigation of pregnancy-related stress.

The researcher concurs with the author regarding the positive impact of social support and networks on health during pregnancy and aims to critically examine how social capital, as a resilience-based intervention, mitigates pregnancy-related stress. Although the literature acknowledges the significance of social support in alleviating pregnancy-related stress, it frequently lacks a critical analysis of the role of social capital in achieving these outcomes. Further investigation is warranted to elucidate the mechanisms through which social capital enhances resilience and reduces stress, particularly in high-stress environments such as refugee settlements (Adhena & Fikre, 2023; Bukuluki et al., 2021; Ivanova et al., 2019). Consequently, while existing studies highlight the advantages of social support in maternal health, there is a pressing need to examine the role of social capital more thoroughly. By comprehending and leveraging social capital alongside other forms of resilience, such as psychological and community resilience, more effective interventions can be developed to support pregnant women, especially in socially vulnerable contexts (Hajure et al., 2024; Iliadou et al., 2019; Kalisch et al., 2015).

CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

This chapter delineates the research methodology, encompassing the study design, data sources, study population, sample size calculation, sampling procedures, study variables, data collection techniques, data collection instruments, data analysis plan, quality control measures, dissemination plan, ethical considerations and study limitations.

3.1 Research Design

The research design was delineated into four components: the research approach, strategy, duration, and clarification.

3.1.1 Research Approach

A descriptive cross-sectional study was conducted to determine perceived pregnancy-related stress, resilience, and associated factors among pregnant refugee adolescent girls in the Rhino Camp Refugee Settlement in Northwestern Uganda.

3.1.2 Research Strategy

The research strategy encompasses a comprehensive plan for conducting the study. A cross-sectional study design was employed that incorporated both quantitative and qualitative methodologies. The qualitative approach is particularly beneficial for obtaining an in-depth understanding of the research context and processes involved. This approach includes interviews, questionnaires, and document reviews (Amin, 2005).

3.1.3 Research duration

The study was conducted over a period of six (6) months to assess the presence and extent of causal effects between the independent and dependent variables. This timeframe allowed for adequate data collection and provided a representative view of the events over the specified period.

3.1.4 Research classification

This study employed both quantitative and qualitative research methodologies to examine the relationship between resilience and perceived pregnancy-related stress among pregnant refugee adolescent girls in the Rhino Camp Refugee Settlement in Northwestern Uganda. A cross-sectional design was selected for this investigation because of its capacity to facilitate the simultaneous assessment of multiple variables and their interrelationships. This design choice was particularly apt given the study's

objective of exploring the intricate dynamics between stress, resilience, and the unique circumstances of pregnancy among refugee adolescents. This design allowed for the collection of detailed, context-specific data at a single point in time, thereby making it well-suited for capturing the interactions among these factors.

3.2 Study population

The research was conducted among pregnant adolescent refugees residing in the Rhino Camp Refugee Settlement in Northwestern Uganda.The research focused on pregnant adolescent refugees living in the Rhino Camp Refugee Settlement, located in Northwestern Uganda. Established in 1980, this settlement hosts a diverse population of refugees primarily from South Sudan, the Democratic Republic of Congo, and other neighboring countries. This study aimed to investigate the unique challenges and experiences faced by this vulnerable group, considering the intersecting factors of adolescence, pregnancy, and refugee status.

3.3 Sample size determination

The sample size for this study was calculated using the Kish Leslie formula (1965), considering the prevalence of stress related to adolescent pregnancy, which was recorded at 21.5% in the Rhino Camp Settlement for the calendar year 2021.

$$N = \frac{Z^2 pq}{d_2}$$

N = Sample size

Z = z-score at 95% confidence level

P = Prevalence of adolescent pregnancy among refugees in Rhino Camp Settlement for the calendar year 2021 (P=21.5%) district health information system version two (dHIS2).
q = Complement of p (1-p) d
= Margin of error (0.05)

$$N = \frac{1.96^2 * 0.215 * (1 - 0.215)}{0.05^2}$$

$$CapN = \frac{3.6864 * 0.215 * (0.785)}{0.0025}$$

$$N = \frac{0.6223}{0.0025}$$

$$N = 248.8$$

Approximately 249 (calculated sample size).

3.4 Selection criteria

The inclusion criteria were limited to pregnant adolescents aged 10–19 years residing in the Rhino Camp Refugee Settlement in Northwestern Uganda. *The exclusion criteria* encompassed all nationals, including pregnant adolescents aged 10–19 years, residing in the same settlement. Data collection focused exclusively on refugee adolescents and was conducted through individually administered questionnaires using the Kobo Collect Tool, which was pre-tested for validity. Participants were selected through simple random sampling from a defined sampling frame. Although no specific adjustments were made for non-response, the study achieved a high response rate, with 99.6% of those approached consenting, resulting in a minimal non-response rate of 0.4%, thereby reducing the risk of non-response bias.

3.5 Sampling Techniques

This study employed both probability and non-probability sampling techniques. Probability sampling was used to select participants from the general population to ensure a representative sample. Non-probability sampling, specifically purposive sampling, was used to recruit experts in the field for in-depth interviews. This combination of sampling methods allowed for a comprehensive approach, capturing both broad demographic trends and specialized insights into the research problem.

3.5.1 Purposive Sampling

Purposive sampling was used to select pregnant adolescents within the Rhino Camp Refugee Settlement. This non-probability sampling method enabled the researcher to identify individuals with pertinent characteristics and firsthand experiences. This facilitated the collection of rich data from respondents with critical insights, supporting a deeper analysis of the issue. This approach allowed for the inclusion of participants who could offer valuable perspectives on adolescent pregnancy within the refugee settlement. By focusing on individuals with direct knowledge, this study gathered meaningful data, thereby enhancing the quality of the research findings.

3.5.2 Simple random sampling

To ensure a representative and unbiased selection of pregnant refugee adolescents (aged 10–19 years) residing in the Rhino Camp Refugee Settlement, excluding nationals, a simple random sampling method was employed. The sampling frame was constructed using antenatal care (ANC) registers, reports from community health workers, and lists from partner organizations in two zones with high rates of pregnancy-related stress: Zone 7 (Omugo sub-county) and Ocea Zone (Uriama sub-county).

The sample size was determined using standard formulas based on the estimated prevalence of adolescent pregnancy, a 95% confidence level, and the desired margin of error. Participants were selected from the compiled frame using random numbers generated via Microsoft Excel, ensuring that each eligible adolescent had an equal probability of selection. Trained research assistants proficient in Arabic approached the selected participants, provided study information, and obtained informed consent, including parental or guardian consent for minors. Data collection was conducted using a digitally administered, pre-tested Kobo Collect questionnaire that included both open- and closed-ended questions.

The sampling and data collection processes prioritized reliability, validity, and ethical standards, with daily data quality checks conducted by the supervisors and the principal investigator. The response rate was 99.6%, effectively minimizing the non-response bias. The study received ethical approval from the Uganda Christian University Research Ethics Committee, Office of the Prime Minister, and local health authorities. Participation was voluntary, with strict adherence to privacy and confidentiality protocols. This rigorous approach ensured the collection of robust and trustworthy data reflecting the experiences of pregnant adolescent refugees in these high-need zones.

3.6 Data collection methods

Primary data were collected through interviews and group discussions. A structured individual questionnaire was used to capture quantitative data using the Kobo Collect application. Secondary data were obtained through documentary reviews.

3.6.1 Interviewing

The researcher employed interviews to collect qualitative data from managers, commandants responsible for livelihood, health workers, protection officers, and the UNHCR livelihood focal person at the Rhino Camp settlement. Conducting face-to-face interviews facilitated the acquisition of more comprehensive data, enabling the researcher to gain additional insights from the participants. These interviews also allowed for a deeper analysis and understanding of respondents' expressions. An interview guide was used during the interview sessions.

3.6.2 Focus group discussion

Focus group discussions (FGDs) were integral to the qualitative aspect of this study, functioning as both a methodological triangulation tool and a means to enhance the comprehension of intricate social phenomena. Participants were purposively selected to ensure diversity in terms of age, education, pregnancy experiences, and duration of residence in the refugee settlement, thereby capturing a wide range of perspectives and lived experiences of refugee women.

Each focus group consisted of 8–12 participants, facilitating dynamic, interactive exchanges and promoting the exploration of both shared and divergent viewpoints. The FGDs were conducted by trained moderators proficient in Arabic and familiar with the cultural context, supported by note-takers who documented nonverbal cues and group interactions. Discussions adhered to a semi-structured guide but allowed for flexibility to delve deeper into the emergent themes and issues raised by the participants.

This approach fostered a safe and supportive environment that encouraged open dialogue on sensitive topics. Participants were assured of confidentiality, and informed consent was obtained prior to their participation. The group setting not only enriched the data but also facilitated the identification of collective narratives, group norms, and social dynamics that might not have emerged in individual interviews alone. All discussions were audio-recorded (with permission), transcribed verbatim, and supplemented with detailed field notes for a comprehensive analysis.

3.7 Data collection procedure

3.7.1 Quantitative Data Collection

Quantitative data were gathered using a pretested structured questionnaire comprising four sections. The first section elicited *sociodemographic information*, including age, education, marital status, and household composition of the respondents. The second section assessed *perceived pregnancy-related stress* using the standardized 10-item Perceived Stress Scale (PSS), with responses rated on a five-point Likert scale (0 = never to 4 = very often) and a total possible score of 0–40; higher scores indicated greater stress. Four items (items 4, 5, 7, and 8) were reverse-scored, and the total scores were categorized as low (1–13), moderate (14–26), or high (27–40). The third section measured the *frequency of five emotional experiences—shame, guilt, loneliness, helplessness, and stigmatization*—using a four-point scale (0 = never, 3 = always). The fourth section evaluated *resilience* using the 14-item Wagnild and Young Resilience Scale, scored on a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree). Higher scores indicate greater resilience, and total scores were grouped as low (≤64), moderate (65–80), and high (≥82).

3.7.1.2 Instrument Validation and Reliability

To ensure content and face validity, the instruments were reviewed by subject-matter experts in psychology and maternal and child health nursing. The questionnaire was pilot-tested among 15 pregnant adolescents to assess its clarity and comprehension. The Cronbach's alpha coefficients for the emotional experience, resilience, and perceived stress scales were 0.92, 0.80, and 0.70, respectively, demonstrating acceptable to excellent reliability.

3.7.2 Qualitative Data Collection

Qualitative data were collected through in-depth interviews and focus group discussions (FGDs). Rapport and trust were established with the participants through ongoing engagement and genuine interest in their lived experiences. All respondents provided informed written consent, and data collection was facilitated by trained enumerators and interpreters fluent in Arabic and culturally familiar with the community. Six focus group discussions and multiple key informant interviews were conducted to explore individual and shared perspectives. Throughout the data collection, the researchers also performed observations and maintained detailed field notes to complement and enrich the qualitative narratives. Strict measures were taken to preserve confidentiality and ensure cultural and ethical sensitivity throughout the study.

3.8 Date Collection Instruments

The study employed a structured questionnaire and an interview guide to collect primary data, ensuring informed study outcomes.

3.8.1 Quantitative Questionnaire

Questionnaires were developed to investigate the primary theme of the relationship between resilience and perceived pregnancy-related stress among pregnant adolescent refugee girls residing in the Rhino Camp refugee settlement in Northwestern Uganda.

3.8.2 Interview guide

This tool was also employed to enable the researcher to adjust the respondents' answers when necessary. In-depth interviews with participants are thus considered instrumental in establishing rapport and fostering open and relaxed dialogue, which is anticipated to produce high-quality data.

3.9 Data Process and Analysis

3.9.1 Quantitative Analysis

Quantitative data were meticulously edited, coded, and entered into SPSS version 26 for the analysis. Descriptive statistics, including frequencies, percentages, means, and

standard deviations, were computed to characterize the study's sample and key variables. Associations between independent variables and perceived pregnancy-related stress were evaluated using bivariate logistic regression analysis with a 95% confidence interval. Independent Student's t-tests and one-way ANOVA were conducted to assess the relationships between continuous and categorical variables, while Pearson's correlation coefficient was employed to examine associations between continuous variables. Where necessary, variables with low category frequencies were dichotomized to facilitate robust regression analysis. Perceived pregnancy-related stress was categorized as "low/moderate" and "high" for inferential modeling. Variables with significance at $p < 0.05$ in the bivariate analyses were included in a multivariate logistic regression model to identify independent predictors. Statistical significance was set at $p < 0.05$.

3.9.2 Qualitative Analysis

The qualitative data obtained from the focus group discussions were transcribed verbatim. A thematic analysis was conducted, beginning with multiple readings of the transcripts to achieve familiarization, followed by systematic coding performed by two independent researchers. The codes were subsequently organized into principal themes and subthemes that encapsulated both the shared and divergent participant experiences. To enhance analytic rigor, all coding and theme development were cross-verified by the research team. Field notes and reflective memos were incorporated to enrich the interpretation and provide context. During the interpretation phase, qualitative and quantitative results were synthesized to offer a comprehensive and triangulated understanding of the research findings.

3.10. Ethical considerations

Ethical considerations were addressed according to the standards of the Declaration of Helsinki. The Uganda Christian University's ethical review board granted approval on February 20th, 2024, with authorization from the Prime Minister's Office to conduct research in the refugee settlement. Informed consent was obtained from the participants, allowing oral consent when preferred. Privacy was maintained through de-identified questionnaires and isolated interviews with participants. Participants were informed that only refreshments would be provided and that participation carried minimal risks. The voluntary nature of participation was emphasized, with the freedom to withdraw at any time. The benefits of this study were described in terms of its contribution to maternal and child health policy in refugee settlements. Conflicts of interest were disclosed, and plans for sharing the results with stakeholders, including Uganda Christian University Medical School and Terego District Local Government, were outlined. This ethical approach ensured the protection of the participants and the integrity of the research.

CHAPTER 4: PRESENTATION AND INTERPRETATION OF FINDINGS

4.0 Introduction

This chapter provides a detailed analysis of the study findings related to resilience, perceived pregnancy-related stress, and associated factors among pregnant adolescents in the Rhino Camp Refugee Settlement in Northwestern Uganda. This chapter begins by describing the sociodemographic characteristics of the study population in relation to pregnancy-related stress and resilience. It then examines aspects of physical health during pregnancy, emotional well-being, access to essential healthcare services, resilience levels, and perceived effectiveness of resilience-oriented interventions. Both bivariate and multivariate analyses were performed to identify factors independently associated with pregnancy-related stress among pregnant refugee adolescents. Of the 250 adolescents initially approached for participation, 249 consented, yielding a high response rate of 99.6%.

4.1. Socio-demographic characteristics

Of the study participants, the majority (n=206; 82.7%) were aged 16–19 years, while n=43 (17.3%) were aged 12–15. Most respondents were single at the time of the study (n=149; 71.9%), with the remaining respondents (n=70, 28.1%) reporting that they were married. In terms of educational attainment, 236 (94.8%) had received formal education, and 13 (5.2%) had attended informal education only (see Table 1). Regarding the country of origin, most participants (n=234; 94.0%) were from South Sudan, while n=15 (6.0%) originated from the Democratic Republic of the Congo (DRC). No other countries of origin were reported.

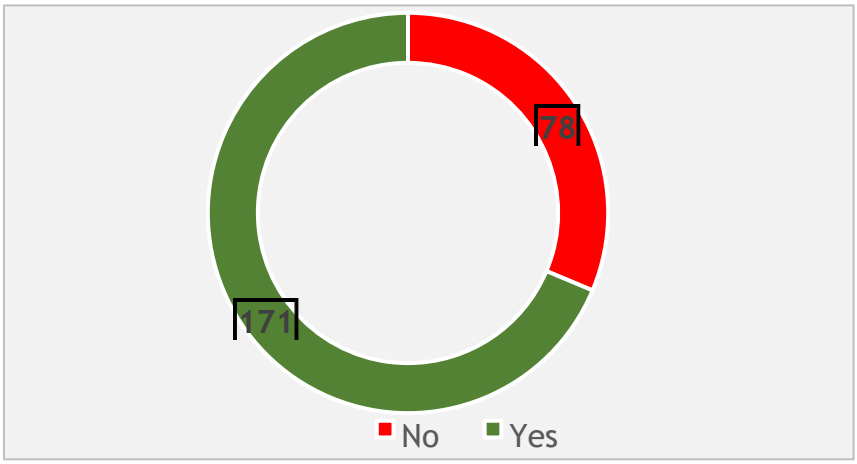
Table 1: **Socio-demographic characteristics of the participant (N=249)**

Variables	Frequency (n)	Percentages (%)
Marital Status		
Married	70	28.11
Single	149	71.89
Age		
12 – 15	43	17.27
16 -19	206	82.73
Education type		
Informal	13	5.22
Formal	236	94.78
Country of Origin		
Democratic Republic of Congo	15	6.02
South Sudan	234	93.98

Data source: Primary

Among the 249 respondents, the majority (171, 68.7%) reported that their partners accepted the pregnancy, while 78 (31.3%) indicated that their partners did not accept the pregnancy.

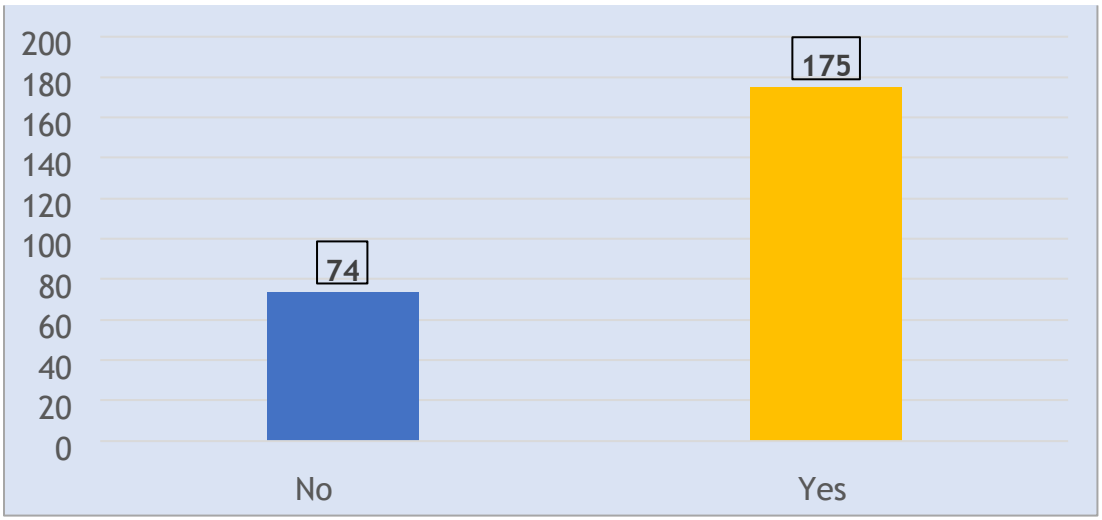
Figure 2: shows the number of partners in accepted pregnancy



Data source: Primary

Similarly, most respondents (175, 70.3%) reported that their parents were involved in their pregnancy care, while 74 (29.7%) indicated that their parents were not involved.

Figure 3 shows the number of parents involved in care.



Data source: Primary

4.2. Pattern of emotional experiences among refugee pregnant adolescents in Rhino Camp, Refugee-Settlement, Northwestern Uganda

Emotional experiences were categorized as shame, guilt, loneliness, helplessness, and stigmatization experiences. As shown in Table 2, shame was the most frequently reported

emotion, with 65.1% of respondents experiencing it occasionally or consistently in their lives. This was followed by loneliness (60.7%), stigmatization (60.6%), helplessness (51.6%), and guilt (44.9%).

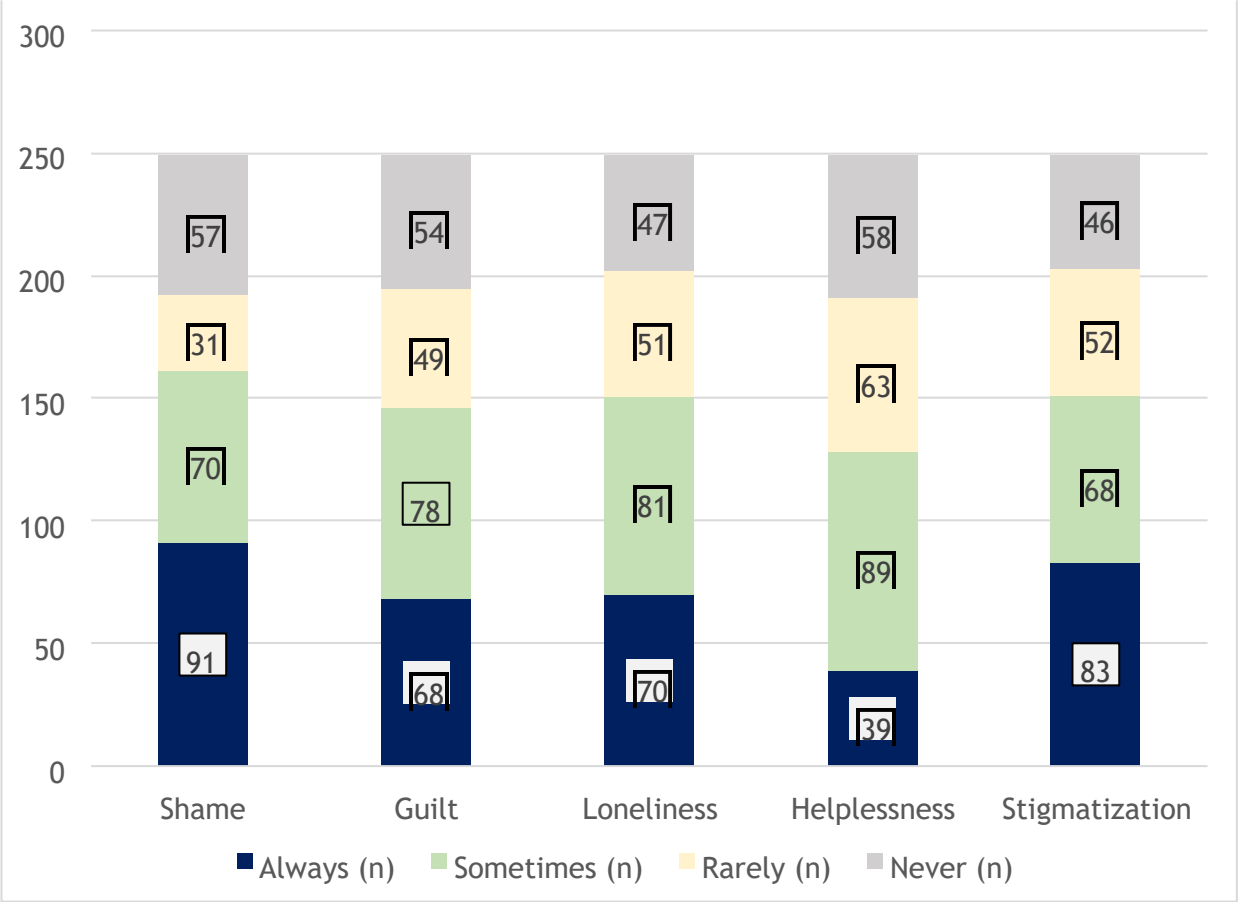
Table 2: **Respondents' patterns of emotional experiences.**

Emotional Experience	Always n (%)	Sometimes n (%)	Rarely n (%)	Never n (%)
Shame	91 (36.5)	70 (28.1)	31 (12.4)	57 (22.8)
Guilt	68 (27.4)	78(19.5)	49(19.5)	54 (21.6)
Loneliness	70(28.2)	81(32.5)	51 (20.7)	47 (18.8)
Helplessness	39(15.6)	89(36.0)	63(25.3)	58(23.2)
Stigmatization	83 (33.3)	68(27.3)	52 (20.8)	46 (18.4)

Source: Primary data

The data presented in Figure 4 show that shame was the most frequently reported emotion consistently experienced by pregnant adolescent refugees in the Rhino Camp Refugee Settlement, with 91 respondents (36.5%) indicating that they “always” felt this way. This was followed by feelings of stigmatization (83 respondents, 33.3%) and loneliness (70 respondents, 28.2%).

Figure 3: Graphical pattern of specific emotional experience among respondents



Source: Primary data

4.3. The prevalence of perceived pregnancy-related stress among refugee pregnant adolescents in Rhino Camp, Refugee-Settlement, and Northwestern Uganda

A bivariate logistic regression analysis was conducted to examine the association between sociodemographic variables and pregnancy-related stress among pregnant adolescent refugees in the Rhino Camp Settlement, Northwestern Uganda. The results of the cross-tabulation are presented in Table 4.

Most respondents experiencing pregnancy-related stress and resilience were from South Sudan, with this association reaching statistical significance ($p = 0.006$). Educational attainment also showed a significant relationship, as most participants with formal education ($n = 236$, 95%) had a significantly different prevalence of pregnancy-related stress ($p = 0.001$). Having biological children was associated with pregnancy-related stress ($n = 225$, 90%, $p < 0.045$). Age and marital status also played a role; adolescents aged 16-19 were nine times more likely to experience stress during pregnancy compared with their younger counterparts ($p = 0.001$).

Partner and parental involvement are notable protective factors. Pregnant adolescents whose partners accepted the pregnancy were ten times more likely to be stress-free ($p < 0.001$), while those whose parents were involved in their care were eleven times more likely to report lower stress levels. These findings underscore the importance of social support and engagement in reducing pregnancy-related stress among refugee adolescents (see Table 4 for the detailed results).

Table 2: Socio-demographic variables of the respondents with prevalence of pregnancy-related stress among refugee adolescent girls at Rhino Camp Refugee Settlement, north-western Uganda.

Variables	Frequency N (%)	OR (CI)	P value
Age group			
12 - 15	43(17)	Ref	
16 - 19	206 (83)	9.30 (3.59- 24.1)	<0.001
Education			
Informal	13(5)	Ref	
Formal	236(95)	14.64 (8.14- 26.33)	<0.001
Marital status			
Married	70 (28)	Ref	
Single	149(72)	8.10 (0.06-0.18)	<0.001
Country of Origin			
DRC	15(6.02)	Ref	
South Sudan	234 (93.98)	0.75 (0.29-1. 98)	<0.006
Partner accepted pregnancy			
No	78(31)	Ref	
Yes	171(69)	10.01(0.12-0.19)	<0.000
Parents involved in care.			
No	74(30)	Ref	
Yes	175(70)	11.23(7.16-18.01)	<0.002

Source: Spss *output*

4.4. Social-demographic variables associated with Resilience factors

Higher resilience levels were observed among older adolescents ($p < 0.001$), those who were married ($p = 0.02$), those living with their spouses ($p < 0.001$), and respondents whose pregnancies were accepted by their partners ($p = 0.02$), as shown in Table 4.2.2.

Table 4.2.2. Relationship between Resilience and Socio-demographic variables.

Variables	Resilience mean (SD)	Test statistic t-test/ ANOVA	p
Age (years)		-3.95	0.0001
12 –15	50.53 (11.21)		
16 –19	57.79 (10.88)		
Marital status		-3.11	0.02
Single	54.95 (10.58)		
Married	59.67 (11.99)		
Education type		-0.63	0.53
Informal	55.13 (12.28)		
Formal	56.65 (11.16)		
Personal monthly income		1.02	0.36
No income	54.72 (11.16)		
Yes income	53.24(10.02)		
Living place		6.04	0.0001
Alone/with friends	58.50 (11.07)		
With parents	54.44 (10.94)		
With extended family	50.12 (11.46)		
With male partner	60.26 (10.94)		
Partner accepted pregnancy		2.43	0.02
No	53.97 (13.08)		
Yes	57.71 (10.10)		

Parents involved in care.		0.09	0.93
No	56.61 (12.19)		
Yes	56.46 (10.93)		

Source: SPSS Output

4.5 Bivariate analysis between resilience factors and prevalence of pregnancy-related stress among refugee adolescent girls at Rhino-camprefugee-settlement, north-western Uganda.

Bivariate analysis revealed that pregnant adolescents whose pregnancies were not accepted by their partners were nearly three times more likely to experience perceived stress than those whose pregnancies were accepted (OR = 2.57, 95% CI: 0.29–22.39). Regarding mentorship, participants who did not share their experiences had significantly higher odds of perceived stress (OR = 8.33, 95% CI: 1.01–68.43). In terms of psychosocial factors, adolescents who lacked emotional support were twice as likely to report perceived stress (OR = 2.14, 95% CI: 1.10–4.17), and those without supportive peer groups had increased odds (OR = 1.90, 95% CI: 1.03–3.48). Social support was a key protective factor; pregnant adolescents who received family support were five times more likely to be free from perceived stress compared with those without family support (OR = 5.18, 95% CI: 1.37–19.58).

Table 3: **Resilience factors and prevalence of pregnancy-related stress among refugee adolescent girls at Rhino Camp Refugee Settlement, north-western Uganda.**

Variables	Frequency (n)	OR (CI)	P-Valve
Social support			
Friends/church	206(82.7)	Ref	
Family	43(17.3)	5.18(1.37-19.58)*	0.003
Psychosocial			
Counseling	60(24.1)	Ref	
Emotional	85(34.1)	2.14 (1.10-4.17)*	0.008
Peer groups	104(41.8)	.90(1.03- 3.48)*	0.014
Mentorship			
Life skills	23(9.2)	Ref	
Share experience	106(42.6)	8.33 (1.01-68.43)*	0.028
Health care	102(48.2)	1.93 (0.20-18.61	0.582
Monetary factor			
Consumption assistance	100(40.2)	Ref	
Partners pregnancy	149(59.2)	2.57 (0.29-22.39)	0.021

Source: Spss output

Interview informants and focus group discussions

This section addresses the interview informants and focus group discussions (FGD) conducted in this study. The research was executed in two phases, involving interviews with key informants and focus group discussions to gather insights on strategies to alleviate stress among refugee adolescent girls at the Rhino Camp Refugee Settlement in north-western Uganda. The variables examined included social support, psychosocial factors, mentorship, financial factors contributing to resilience, and sociodemographic factors of the participants.

Description of competencies of informants

This section examines the competencies of health providers, social workers, community advocates, educators, parents of pregnant adolescent girls, mental health professionals, and librarians. As a focal area and mediator variable in this study, personnel competence was assessed in terms of the availability of technical skills, knowledge of user preferences, information sources and resources, attitude, retrieval skills, and communication. The study determined that the informants possessed all these competencies, as they were professionals well versed in the core elements of pregnancy-related stress among refugee adolescent girls at the Rhino Camp Refugee Settlement.

Experiences of Pregnancy-Related Stress

One key informant highlighted the heightened vulnerability of refugee adolescent girls who become pregnant, noting that displacement, limited access to healthcare, and exposure to violence and exploitation increase their risk. Participants stressed the importance of addressing the underlying contributors to adolescent pregnancy in refugee settings, such as poverty, lack of education, and inadequate reproductive health services.

Quantitative findings (Table 4) indicate that pregnant adolescents who shared their experiences of perceived stress reported significantly lower stress levels than those who did not ($p = 0.028$, 106 respondents [42.6%]). This result was further supported by the focus group discussions. For example, several participants described feeling fearful or isolated.

"I felt scared of my parents. They quarreled, and I felt isolated because I feared being close to them. I sometimes wanted to abort, due to advice from friends." (Participants 2, 3, 6, and 8)

Others expressed persistent stress and shame.

"I felt ever stressed and ashamed about the pregnancy. I did not want to meet my friends from school." (Participants 4 and 6)

Emotional pregnancy-related stress

Key informant interviews revealed that refugee adolescent girls often experience significant stigma and shame associated with teenage pregnancy, both within their communities and in their host countries. Fear of judgment from family members, peers, and the broader society contributes to increased feelings of isolation and emotional distress. Quantitative analysis supports the role of emotional and peer influences in

pregnancy-related stress, with emotional influence (p = 0.008, 85 respondents [34.1%]) and peer influence (p = 0.014, 104 respondents [41.8%]) showing significant associations (Table 4). Insights from the focus group discussions further highlighted the profound impact of these emotional and social challenges on pregnant refugee adolescents.

Participant 6*: I was not eating well because I was stressed. I would sleep a lot. I had a lot of Physical weakness and did not like to work. My friends did not isolate me but sometimes I feared because I was ashamed. I had no money to care for my needs such as cravings*

Participant 5:

My boyfriend ran away when I conceived so I felt rejected and stressed about taking care of me and the baby alone. I used to go to a health center for antenatal but lacked money to buy things for me and clothes for the baby. My parents and friends used to help me.

Social support for pregnancy-related stress

One participant shared that she lacked friends during her pregnancy because the community regarded her as a "spoiled child." She also described limited family support, having lost her mother in the war, and serving as the primary provider for her household, as her father and brother struggled with substance use.

Family Dynamics. Family dynamics have emerged as a critical factor influencing the extent of social support accessible to pregnant refugee adolescent girls in the host country. Some participants reported receiving substantial familial support, including emotional encouragement, practical assistance, and guidance throughout their pregnancies. Conversely, others experienced strained relationships owing to cultural or generational disparities, which exacerbated feelings of isolation and stress.

Community Networks. Beyond familial support, assistance from the broader community, including friends, neighbors, and community organizations, is crucial. However, establishing and maintaining these networks often presents challenges in displacement contexts, where social structures are fragmented and community members are dispersed. Additional obstacles, such as language and cultural differences, may further impede the formation of supportive, peer connections.

Quantitative findings indicated that refugee adolescent girls without family support experienced higher stress levels than those with supportive families (p = 0.003, 43 respondents [17.3%]). This was further confirmed by qualitative insights from the focus group discussions, such as the experience reported by Participant 3:

I was confused because some friends advised me to abort, while others advised me to keep it. I decided to keep my baby regardless and not aborted. I told my boyfriend and he did not support abortion. My parents were tough at first but they forgave me and now I am going to stay with my husband. I had access to the hospital; I slept and would work normally. Another related response was from (Participant 5):*my boyfriend ran away when I conceived so I felt rejected and stressed about taking care of me and the baby alone. I used to go to a health center for antenatal but lacked money to buy things for me and clothes for the baby, my parents came and used to help me.*

4.6 Association between resilience and perceived pregnancy-related stress among pregnant refugee adolescent girls in Rhino Camp, Refugee-Settlement, northwestern Uganda

To establish whether there was a relationship between perceived pregnancy-related stress, resilience, and sociodemographic factors, Pearson Correlation and regression analyses were performed.

Table 5: Model Fit Indices

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	522	273	224	1.08

The findings indicate that resilience—measured through psychosocial factors, mentorship, and social capital—as well as sociodemographic characteristics, significantly influence pregnancy-related stress among adolescents. The adjusted R^2 value of 0.224 shows that these factors collectively account for 22.4% of the variance in pregnancy-related stress, while the remaining 77.6% is explained by other factors outside the scope of this study.

4.7. Pattern of Perceived Pregnancy-related Stress and Resilience

Relationship between perceived pregnancy-related stress, resilience, and sociodemographic factors.

Table 4: Correlation between perceived pregnancy-related stress, resilience, and social demographic factors

Variables		Resilience factor	Social demographic factor	Related Stress among Adolescents
Resilience factors	Pearson Correlation	1	989**	.521**
	Sig. (2tailed)		0	0.002
Social demographic actors	Pearson Correlation	.989**	1	.520**
	Sig. (2tailed)	0		0.002
Related Stress among Adolescence	Pearson Correlation	.521**	.520**	1
	Sig. (2tailed)	0.002	0.002	

Source: SPSS output **Correlation is significant at the 0.01 level (2-tailed).

Correlation analysis, as presented in Table 4.2, revealed that both resilience and sociodemographic factors were significantly correlated with pregnancy-related stress among adolescents, with p-values of less than 0.005 and 0.02, respectively, and a correlation coefficient of 0.521. This finding indicates a positive and moderate association between these variables and pregnancy-related stress levels. Consequently, the results suggest a significant positive relationship between perceived pregnancy-related stress, resilience, and sociodemographic characteristics in this study population.

4.8 Logistic regression analysis and predictors of perceived pregnancyrelated stress for Adolescence

Demographic, resilience, and health factors that were significantly associated with perceived pregnancy-related stress were incorporated into a multivariate logistic

regression analysis. This analysis utilized dichotomized perceived stress levels as the dependent variables, categorizing perceived pregnancy-related stress into 'low/moderate' and 'high' levels.

Table 4.3 Multiple Logistic regression analysis of predictors of perceived pregnancyrelatedstress for Adolescents

Variables	Beta	P	OR	95 CI
Resilience (ref Low)				
Moderate/high	0.45	0.27	1.6	0.71–3.45
Social capital				
Improved well-being				
Church /community/				
Family (ref *Mentorship*)	0.31	0.33	2.2	0.47-2.47
Health care	0.29	0	2.5	0.61-5.46
Psychosocial support (ref Emotional)				
Peer groups	. 0.07	0.08	1.3	0.80-7.01
Social demographic				
Age (years)				
16–19 (ref 12–15)	0.32	0.48	1.4	0.57–3.35
Marital status (ref Married)				
Single	**0.01**	**0.99**	**1**	**0.44–2.30**
Education type (ref Informal)				
Formal	1.04	0.31	0.8	0.88–9.22
Income status (ref Some income)				
No income	-0.6	0.27	0.5	0.18–1.61
Feeling of shame (ref Rarely/never)				

Sometimes/always	1.22	0.04*	3.4	1.01–11.34
Feeling of guilt (ref Rarely/never)				
Sometimes/always	0.31	0.54	1.4	0.50–3.73
Loneliness (ref Rarely/never)				
Sometimes/always	0.63	0.12	1.9	0.84–4.21
Helplessness (ref Rarely/never)				
Sometimes/always	-0.1	0.75	0.9	0.42–1.86
Felt stigmatized (ref Rarely/never)				
Sometimes/always	-0.2	0.7	0.8	0.24–2.58
Living place (ref Others)				
With partner	0.49	0.27	1.6	0.68–3.96
Partner's acceptance (ref Yes)				
No	1.23	0.01*	3.4	1.45–8.12
Parental involvement (ref Yes)				
No	1.27	0.01*	3.6	1.65–7.71
Peer influence (ref Yes)				
No	-0.3	0.36	0.7	0.37–1.44

Source: Spss output *statistically significant at p<0.05*

Five characteristics emerged as independent predictors of higher levels of perceived pregnancy-related stress among respondents: absence of parental involvement in care (OR = 3.56; 95% CI: 1.65–7.71), lack of experience sharing (OR = 2.52; 95% CI: 0.61–5.46), male partner's rejection of the pregnancy (OR = 3.43; 95% CI: 1.45–8.12), feelings of shame (OR = 3.39; 95% CI: 1.01–11.34), and limited access to healthcare (OR = 2.12; 95% CI: 0.44–3.43).

Interview informants and focus group discussions

Physical health during pregnancy

The informants expressed that they had the right attitude and care to pass on the information to the patients regarding perceived pregnancy-related stress. Some of the direct comments were: "*They develop anemia, and some lose their first pregnancies due to unsafe abortions. One youth said that they developed a fistula immediately after giving birth and did not have any support from the father of the child since he fled to South Sudan with fear of being persecuted and the parents did not have the money to support neither"*. (Participant 2) This was shown in table 4.3.1 that adolescent girls who received physical health during pregnancy had more chances of being stress-free than those who didn't receive the service with (P=0.02, OR=2.12) Under focus group discussion their comments include:

> *At that time, I used to fall sick but had access to a health facility. I had financial challenges also, at home I would sleep well, and at times I would have a hard time sleeping when I was overthinking. My family supported me with finance, advice, and a home to stay. They also gave me advice which helped to reduce my stress.*(Participant1)

Emotional well-being.

The findings, as presented in the table, indicate that respondents experienced a range of emotions. A total of 65.1% reported feeling shame occasionally or consistently, often due to uncertainty about their future after childbirth and concerns about whether their parents would accept or reject them. As one participant shared, "I felt so scared and I was annoyed because my boyfriend abandoned me. He ran away after I told him I was pregnant."

Another respondent mentioned that*:*

> *I was so stressed because I was not working; I did not have money to support myself and the baby. Everything looked very difficult for me when I found out I was pregnant. I cried. I was threatened and beaten by relatives, so I got annoyed and left the home to go to my husband.*

A third respondent *added:*

> *I was scared because my father was annoyed with me for getting pregnant. With time he has forgiven me and I live well with him and I am not scared anymore.*

> And fourth respondent said and quoted:*for me, it was not easy. I was threatened and beaten by my father. I was stressed and ashamed because my father chased me away to go to the owner of the pregnancy. Even my husband shortly left and went to Congo up to now. When my father realized that my husband had abandoned me and I was suffering, he later accepted me back he is the one now helping me to take care of the baby.*

Partner accepted pregnancy

The results indicate that pregnant adolescent girls whose partners accepted their pregnancy experienced significantly lower stress levels than those whose partners rejected the pregnancy ($p = 0.01$, $OR = 3.43$). This finding is supported by qualitative data, as one participant shared, "I felt so scared and was annoyed because my boyfriend abandoned me. He ran away after I told him I was pregnant."

Another participant (Participant7) stated:

> *After my boyfriend knew that I was pregnant got lost me, my challenges were financial, so I dropped out of school. I was also challenged medically because I fell ill many times. Sometimes, I would regret and cry, and I was not happy when I lacked something.*

Parental involvement

The findings indicate that adolescents whose parents were involved in their pregnancy were significantly more likely to experience lower stress levels than those without parental involvement ($p = 0.01$, $OR = 3.6$). This result is further supported by focus group discussions, as illustrated by Participant 3, who stated:The findings indicate that parental involvement in an adolescent girl's pregnancy is associated with significantly lower stress levels ($p = 0.01$, $OR = 3.6$) compared to those whose parents are not involved. This was echoed in the focus group discussion, where Participant 3 remarked the following:

> *I had no challenges. At first, I was scared because my father was annoyed with me for getting pregnant. With time he has forgiven me and I live well with him and I am not scared anymore.*

In conclusion, this study elucidates the relationship between resilience, social support, and sociodemographic factors affecting pregnancy-related stress among adolescent refugees in the Rhino Camp Settlement. Enhanced resilience, supportive relationships with parents and partners, and strong social capital were linked to reduced stress. In

contrast, experiences of shame, stigma, rejection by parents or partners, and insufficient support significantly increased stress. These findings emphasize the need to bolster psychosocial resources and cultivate supportive environments to alleviate the adverse effects on pregnant adolescents in displacement settings. These insights offer guidance for developing targeted interventions and policies to enhance the well-being of vulnerable populations.

CHAPTER 5: SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS.

5.0: Introduction

Following its presentation, analysis, and discussion, the research summary, conclusion, and recommendations are offered in this chapter. It displays the study's results in connection to the conceptual framework and its specific goal. It also demonstrates how the results of other studies conducted by various researchers differ and are comparable to this study.

5.1: Summary of findings

This study assessed the prevalence and determinants of pregnancy-related stress among pregnant adolescent girls in the Rhino Camp Refugee Settlement in Northwestern Uganda. The findings revealed a significant burden of pregnancy-related stress, with notable associations between stress levels and factors such as age, marital status, living arrangements, partner and parental support, and individual resilience. Multivariate analysis identified lack of parental involvement, absence of experience sharing, partner rejection of pregnancy, feelings of shame, and limited access to healthcare as independent predictors of heightened stress.

5.2 Contextualizing the Findings

Sociodemographic Dynamics and the Refugee Experience

The study population consisted primarily of South Sudanese refugees in a Ugandan settlement setting, where the prevalence of adolescent pregnancy (41.1%) substantially exceeds the national (25%) and regional sub-Saharan African averages (19.3%) [Uganda Bureau of Statistics [UBOS] & ICF, 2021]. This elevated rate reflects the added vulnerability of refugee girls, who face disrupted social networks, poverty, and reduced access to reproductive health resources (Namugaya, Namatovu, & Kananura, 2021). Older adolescents (16–19 years) were more likely to report pregnancy and higher resilience than younger teens, mirroring trends observed in Nakivale and Bidibidi settlements and underscoring age-specific risks (Ivanova et al. 2019).

Marriage, Social Support, and Cultural Context

Married adolescents and those cohabiting with partners experienced markedly lower stress and higher resilience, findings consistent with the Demographic and Health Surveys data and attributable to stronger social acceptance and practical support. This cultural acceptance of marriage and childbearing among older teens in Uganda and South Sudanese communities may buffer respondents from some pregnancy-

related stressors. Conversely, single adolescents face greater emotional and logistical challenges, amplifying their stress during pregnancy.

Partner and Parental Involvement

Partner and parental support are critical protective factors. Adolescents whose partners accepted the pregnancy and whose parents were involved in their care reported substantially less stress, findings aligned with the theoretical and empirical literature that positions social support as a central mitigator of perceived stress (Cohen & Wills, 1985; Shishehgar, Roshanaei, & Javadifar, 2014). However, some adolescents living with parents reported heightened stress, suggesting that co-residence does not always guarantee emotional or practical support. The disparity in parental effectiveness may be related to strained family dynamics, generational differences, or the psychosocial impact of displacement itself.

Resilience and Emotional Well-Being

The overall assessment revealed low resilience among the majority of pregnant adolescents, a trend that matches previous findings showing that adolescent mothers demonstrate lower resilience than their adult counterparts. Participants with higher resilience not only experienced reduced perceived stress but also reported fewer negative emotions, including shame, guilt, helplessness, and loneliness. These emotional burdens, reinforced by qualitative accounts, underline the psychosocial hardships of adolescent pregnancy in disrupted refugee contexts.

Comparisons to Other Contexts and Studies

The heightened susceptibility to pregnancy-related stress observed in this population is consistent with the broader empirical literature documenting the compounded challenges faced by adolescents in humanitarian settings. In Uganda and similar refugee contexts, barriers to sexual and reproductive health education and services, coupled with the trauma and social fragmentation of displacement, exacerbate the risks that adolescent girls face regarding pregnancy and mental health.

Independent Predictors of Pregnancy-Related Stress

Finally, multivariate analysis confirmed that lack of parental involvement, absence of experience sharing, partner rejection, feelings of shame, and inadequate healthcare access independently predicted higher stress levels. These nuanced, interconnected determinants reflect not only the individual vulnerabilities of adolescent refugees but also their complex familial, community, and institutional environments.

5.3 Recommendations

Drawing upon the findings of this study, the following recommendations are proposed to mitigate pregnancy-related stress among adolescent refugee girls in Uganda. Each recommendation is anchored in trauma-informed principles, ensuring that interventions

are attuned to the cumulative adversity and psychosocial needs characteristic of this demographic group.

Integrate Mental Health into Routine Antenatal Care

It is imperative that mental health screening and trauma-informed psychosocial assessments be systematically integrated into standard antenatal care within refugee settlements. Healthcare professionals should receive training in trauma-informed and adolescent-responsive practices to build trust and reduce the risk of re-traumatization in this population. Screening protocols must employ validated and contextually appropriate tools, and it is essential to establish clear referral pathways to mental health and psychosocial support services within existing healthcare infrastructure. Collaborations with the Ministry of Health, international non-governmental organizations, and agencies such as the UNHCR and IRC can facilitate the scaling and sustainability of these initiatives.

Expand and Tailor Resilience-Building Programs

Existing youth and psychosocial support interventions in Uganda should be tailored to address the specific challenges pregnant adolescents face during displacement. Trauma-informed curricula should impart skills in emotional regulation, healthy coping mechanisms, and stress management. By leveraging youth clubs, safe spaces, peer support groups, and mentoring relationships, these programs cultivate psychological safety, trust, and empowerment. The adaptation of successful models, such as the AVSI Foundation's Graduation to Resilience, should be prioritized with a strong emphasis on participatory and culturally relevant approaches.

Strengthen Family and Community Engagement

Community outreach and family education initiatives should integrate trauma-informed communication strategies to ensure that messages are conveyed non-judgmentally and supportively. These programs should specifically target parents, guardians, and influential family members using accessible platforms such as radio, community meetings, and faith-based organizations. Outreach efforts should aim to enhance the capacity to provide consistent emotional and practical support to pregnant adolescents and address the stigma and misconceptions surrounding adolescent pregnancy within both refugee and host communities.

Enhance Access to Livelihood and Life Skills Opportunities

Livelihood interventions targeting pregnant adolescents should be implemented within a trauma-informed framework that upholds their dignity and ensures psychological safety. Training and micro-grant opportunities should be integrated into existing

economic empowerment initiatives, such as Village Savings and Loan Associations (VSLAs), and provided in environments that are both youth-friendly and supportive. Collaboration with governmental and non-governmental organization partners will enhance integration and optimize the reach and relevance of these interventions.

Implement Trauma-Informed Resilience Training at Community Level
It is imperative to prioritize community-based training sessions focused on resilience and ensure that they are conducted in safe, supportive, and accessible environments. These workshops should be interactive and peer-driven, emphasizing empowerment, solidarity, and social connections among adolescent girls. Trainers and facilitators should be well-versed in trauma-informed methodologies and employ participatory and culturally responsive approaches to enhance both individual and collective coping capacities.

Policy Advocacy and Coordination
Policy frameworks and inter-agency coordination platforms should mandate the adoption of trauma-informed approaches in all programs serving adolescent refugees. Policymakers should secure funding and develop standardized operational guidelines to ensure the integration of trauma-informed care across various sectors, including health, protection, education, and livelihoods. It is essential to meaningfully engage adolescents in the design, monitoring, and evaluation of programs to ensure that their perspectives and needs are central to the continuous improvement of services.

Uganda can leverage its existing resources and partnerships to support pregnant teenage refugees by implementing trauma-informed care in all programs and policies. This initiative seeks to enhance mental and reproductive health outcomes and aligns with global health and social science.

5.4 Area of Future Research

Building on the significant associations identified between resilience, social support, and pregnancy-related stress among adolescent refugee girls, future research should further explore the complex and multidimensional experiences of this population. The present study underscores the necessity of contextually tailored interventions that integrate psychological, social, and economic components to mitigate stress and enhance well-being in humanitarian settings.

Longitudinal research is imperative to investigate the long-term mental health and reproductive outcomes of pregnant adolescents who are displaced. Such studies would yield essential insights into causal pathways and the sustainability of interventions,

thereby addressing the fundamental limitation of cross-sectional research. Incorporating the measurement of ongoing and cumulative adversity, such as exposure to violence, displacement trajectories, and socioeconomic shocks, would enhance our understanding of the broader determinants of both stress and resilience.

In line with contemporary trends in research on adolescent and maternal mental health, future studies should implement mixed methods and participatory approaches that prioritize the voices of adolescent girls. By integrating structured surveys with qualitative interviews or focus group discussions, researchers can capture nuanced perspectives and context-specific coping strategies that may not be apparent through closed-ended questionnaires. Moreover, focusing on the experiences of specific subgroups, such as girls without parental support, unmarried adolescents, and those facing multiple vulnerabilities will enhance the precision of targeted interventions.

Extending research beyond healthcare facilities to encompass schools, community organizations, and informal social networks may enhance the generalizability of the findings and elucidate protective or risk factors specific to various environments. Moreover, employing experimental and quasi-experimental designs is crucial for the rigorous evaluation of multisectoral interventions. Particular attention should be given to those incorporating trauma-informed care, economic empowerment, and community-based support to ascertain the most effective strategies for enhancing mental health and resilience among pregnant adolescents in refugee and low-resource settings. It is imperative that empirical evidence on adolescent pregnancy and maternal mental health among refugees informs the creation of effective rights-based programs.

5.5 Conclusion

This study highlights the impact of social, psychological, and structural factors on pregnancy-related stress among adolescent refugee girls in the Rhino Camp Refugee Settlement in Northwestern Uganda. The findings show that resilience, parental and partner support, and social capital are crucial in mitigating stress, while lack of support, partner rejection, shame, and inadequate care access increase vulnerability. Within Uganda's progressive yet resource-constrained refugee response, these results underscore challenges faced by pregnant adolescents in displacement, where disrupted family structures, stigma, and service gaps intersect. Addressing this population's needs requires integrated, culturally sensitive strategies that strengthen resilience, enhance social support, and ensure equitable access to youth-friendly reproductive health services. Such approaches are essential for improving psychosocial outcomes and supporting adolescent refugee mothers' well-being in Uganda and similar settings worldwide.

REFERENCES

Adhena, G., & Fikre, A. (2023). *Teenage pregnancy matters in refugee setup : early pregnancy among adolescent girls in Kule refugee camp , Gambella , Ethiopia*. *0*, 1–12.

Agaba, D. K. (2024). *Analysing the implementation of refugee laws and policies in relation to women and girls : A case of Kampala , Uganda*.

Akgör, U., Ekinci, Ö., Soyak, B., & Kuru, O. (2022). *Psychological Well-Being Among Refugee Pregnant Adolescents : A Controlled Study From Turkey*. *27*(1), 119–125. https://doi.org/10.5505/ejm.2022.98975

Anisman, H., Doubad, D., Asokumar, A., & Matheson, K. (2024). Neuroscience and Biobehavioral Reviews Psychosocial and neurobiological aspects of the worldwide refugee crisis : From vulnerability to resilience. *Neuroscience and Biobehavioral Reviews*, *165*(February), 105859. https://doi.org/10.1016/j.neubiorev.2024.105859

Asnong, C., Fellmeth, G., Plugge, E., Wai, N. S., Pimanpanarak, M., Paw, M. K., Charunwatthana, P., Nosten, F., & Mcgready, R. (2018). *Adolescents ' perceptions and experiences of pregnancy in refugee and migrant communities on the Thailand-Myanmar border : a qualitative study*. 1–13.

Ayalew, H. G., Liyew, A. M., Tessema, Z. T., Worku, M. G., Tesema, G. A., Alamneh, T. S., Teshale, A. B., Yeshaw, Y., & Alem, A. Z. (2022). Prevalence and factors associated with unintended pregnancy among adolescent girls and young women in sub-Saharan Africa , a multilevel analysis. *BMC Women's Health*, 1–9. https://doi.org/10.1186/s12905-022-02048-7

Bedaso, A., Adams, J., Peng, W., & Sibbritt, D. (2021). The relationship between social support and mental health problems during pregnancy : a systematic review and meta - analysis. *Reproductive Health*, 1–23. https://doi.org/10.1186/s12978-02101209-5

Bogic, M., Njoku, A., & Priebe, S. (2015). *Long-term mental health of war-refugees : a systematic literature review*. https://doi.org/10.1186/s12914-015-0064-9

Bukuluki, P., Kisaakye, P., Mwenyango, H., & Palattiyil, G. (2021). Adolescent sexual behaviour in a refugee setting in Uganda. *Reproductive Health*, 1–11. https://doi.org/10.1186/s12978-021-01181-0

Chandra-mouli, V., Sc, M., Camacho, A. V., D, M., Michaud, P., & D, M. (2013). WHO Guidelines on Preventing Early Pregnancy and Poor Reproductive Outcomes Among Adolescents in Developing Countries. *Journal of Adolescent Health*, *52*(5), 517–522. https://doi.org/10.1016/j.jadohealth.2013.03.002

Daalen, K. R. Van, Dada, S., Issa, R., Chowdhury, M., Jung, L., & Freedman, J. (2021). *A Scoping Review to Assess Sexual and Reproductive Health Outcomes ,*

Challenges and Recommendations in the Context of Climate Migration. *2*(October). https://doi.org/10.3389/fgwh.2021.757153

Dadi, A. F., Miller, E. R., Bisetegn, T. A., & Mwanri, L. (2020). *Global burden of antenatal depression and its association with adverse birth outcomes : an umbrella review*.

Fearon, E., Chabata, S. T., Thompson, J. A., Cowan, F. M., & Hargreaves, J. R. (2012). *Sample Size Calculations for Population Size Estimation Studies Using Multiplier Methods With Respondent-Driven Sampling Surveys Corresponding Author :3*, 1–7. https://doi.org/10.2196/publichealth.7909

Gagnon, A. J., Merry, L., & Robinson, C. (2002). *A Systematic Review of Refugee Women ' s Reproductive Health*.

Hajure, M., Alemu, S. S., Abdu, Z., Tesfaye, G. M., Workneh, Y. A., Dule, A., Hussen, M. A., & Wedajo, L. F. (2024). *Resilience and mental health among perinatal women : a systematic review*. *July*. https://doi.org/10.3389/fpsyt.2024.1373083

Holland, C. E., Kouanda, S., Pitche, V. P., Lougu, M., Schwartz, S., Anato, S., Ouedraogo, H. G., Tchalla, J., Yah, C. S., Kapesa, L., Ketende, S., Beyrer, C., & Baral, S. (2016). *Using Population-Size Estimation and Cross-sectional Survey Methods to Evaluate HIV Service Coverage Among Key Populations in Burkina Faso and Togo*. *131*(6), 773–782. https://doi.org/10.1177/0033354916677237

Id, R. B., Id, J. A. B., Id, M. F., Ranasinha, S., Gray, M., Id, G. F., Misso, M., & Id, M. G. (2020). *The prevalence of mental illness in refugees and asylum seekers : A systematic review and*. *150*, 1–24. ttps://doi.org/10.1371/journal.pmed.1003337

Iliadou, M., Papadakaki, M., Sioti, E., Giaxi, P., Leontitsi, E., & Petelos, E. (2019). *Addressing mental health issues among migrant and refugee pregnant women : A call for action*. *4*, 1–8.

Ivanova, O., Rai, M., Mlahagwa, W., Tumuhairwe, J., Bakuli, A., Nyakato, V. N., & Kemigisha, E. (2019). *A cross-sectional mixed-methods study of sexual and reproductive health knowledge , experiences and access to services among refugee adolescent girls in the Nakivale refugee settlement , Uganda*. 1–11.

Jennings, L., George, A. S., Jacobs, T., Blanchet, K., & Singh, N. S. (2019). *A forgotten group during humanitarian crises : a systematic review of sexual and reproductive health interventions for young people including adolescents in humanitarian settings*. 15–17.

de Jong, J. (2017). Commentary to "An ecological model for refugee mental health: Implications for research." Epidemiology and Psychiatric Sciences, 26(2), 139–141. https://doi.org/10.1017/S204579601600069X

Kalisch, R., Müller, M. B., & Tüscher, O. (2015). *A conceptual framework for the neurobiological study of resilience*. 1400082. https://doi.org/10.1017/S0140525X1400082X

Kamugisha, F., Komakech, H., Kisakye, A. N., & Bukenya, J. (2024). *Prevalence of food insecurity and associated factors among refugee households in Rhino Camp Refugee Settlement , Arua District , Uganda*. *7*(1).

Kassa, G. M., Arowojolu, A. O., Odukogbe, A. A., & Yalew, A. W. (2018). *Prevalence and determinants of adolescent pregnancy in Africa : a systematic review and Meta-analysis*. 1–17.

Lynn, F. A., Alderdice, F. A., Crealey, G. E., & Mcelnay, J. C. (2011). International Journal of Nursing Studies Associations between maternal characteristics and pregnancy-related stress among low-risk mothers : An observational cross-sectional study. *International Journal of Nursing Studies*, *48*(5), 620–627. https://doi.org/10.1016/j.ijnurstu.2010.10.002

Magnani, R., Sabin, K., Saidel, T., & Heckathorn, D. (2005). *Review of sampling hardto-reach and hidden populations for HIV surveillance*. 67–72.

Marvin-dowle, K., & Soltani, H. (2020). European Journal of Obstetrics & Gynecology and Reproductive Biology : X A comparison of neonatal outcomes between adolescent and adult mothers in developed countries : A systematic review and. *European Journal of Obstetrics & Gynecology and Reproductive Biology: X*, *6*, 100109. https://doi.org/10.1016/j.eurox.2020.100109

Mattelin, E., Paidar, K., Söderlind, N., Fröberg, F., & Korhonen, L. (2024). A systematic review of studies on resilience and risk and protective factors for health among refugee children in Nordic countries. In *European Child & Adolescent Psychiatry* (Vol. 33, Issue 3). Springer Berlin Heidelberg. https://doi.org/10.1007/s00787-02201975-y

Miller, K. E., & Rasmussen, A. (2017). *The mental health of civilians displaced by armed conflict : an ecological model of refugee distress*. 129–138. https://doi.org/10.1017/S2045796016000172

Nakisita, O., Kirabo-nagemi, C., & Nakisita, O. (2023). *Examining the maternal health services-seeking behaviour among adolescent urban refugees in Kampala , Uganda*. *23*(1), 394–399.

Olajubu, A. O., Omoloye, G. O., Olajubu, T. O., & Olowokere, A. E. (2021). *Stress and resilience among pregnant teenagers in Ile-Ife , Nigeria*. 1–9.

Rm, H. J. R., Parenting, E., Coordinator, P., Hogan, L., Rm, C. S. E. H., Clinepi, M., Henry, A., Ddu, O., & Lecturer, S. (2020). *Responding to the health needs of women from migrant and refugee backgrounds — Models of maternity and postpartum care in high-income countries : A systematic scoping review*. *January*, 1343–1365. https://doi.org/10.1111/hsc.12950

Rowe, A., Bhardwaj, M., & Mccauley, M. (2023). Maternal multimorbidity - experiences of women seeking asylum during pregnancy and after childbirth : a

qualitative study. *BMC Pregnancy and Childbirth*, 1–12. https://doi.org/10.1186/s12884-02306054-x

Sedgh, G., Sc, D., Finer, L. B., Ph, D., Bankole, A., Ph, D., Eilers, M. A., Singh, S., & Ph, D. (2015). Adolescent Pregnancy , Birth , and Abortion Rates Across Countries : Levels and Recent Trends. *Journal of Adolescent Health*, *56*(2), 223–230. https://doi.org/10.1016/j.jadohealth.2014.09.007

Singh, N. S., Aryasinghe, S., Smith, J., Khosla, R., Say, L., Blanchet, K., & Smith, J. (2018). *A long way to go : a systematic review to assess the utilisation of sexual and reproductive health services during humanitarian crises*. 1–12. https://doi.org/10.1136/bmjgh-2017-000682

Soeiro, R. E., Paulo, J., Guida, D. S., Santos, C., & Costa, M. L. (2023). Sexual and reproductive health (SRH) needs for forcibly displaced adolescent girls and young women (10 – 24 years old) in humanitarian settings : a mixed - methods systematic review. *Reproductive Health*, 1–25. https://doi.org/10.1186/s12978-023-01715-8

Tuxunjiang, X., Li, L., & Wumaier, G. (n.d.). *The mediating e ect of resilience on pregnancy stress and prenatal anxiety in pregnant women*.

Wagnild, G. M., & Collins, J. A. (2019). *Gail M. Wagnild, PhD, RN, LAC; and Jeanette A. Collins, MSW, LAC 28*. 4.

Zemene, M. A., Ayele, B. A., Zewde, E. A., Yimer, T. Y., & Shimels, H. (2024). *Prevalence and Associated Factors of Teenage Pregnancy in Sub-Saharan Africa : Multilevel Modified Poisson Regression Analysis*. *June*, 1–9. https://doi.org/10.1177/21582440241248899

AVSI Foundation. (n.d.). Graduating to resilience. AVSI. https://www.avsi.org/en/graduating-to-resilience

Namugaya, F., Namatovu, J., & Kananura, R. M. (2021). Adolescent sexual behaviour in a refugee setting in Uganda. Reproductive Health, 18(1), 1–12. https://doi.org/10.1186/s12978-021-01181-0

DHS Program: dhsprogram.com/topics/Youth-Corner/uganda-dhs-key-indicators.cfm?utm_source=chatgpt.com

Lobel, M., Cannella, D. L., Graham, J. E., DeVincent, C., Schneider, J., & Meyer, B. A. (2008). Pregnancy-specific stress, prenatal health behaviors, and birth outcomes. Health Psychology, 27(5), 604–615. https://doi.org/10.1037/0278-6133.27.5.604

APPENDICES

Appendix I: Survey Questionnaire

Respondents: Refugee Pregnant Adolescents on Understanding Pregnancy-Related Stress and Resilience

Dear Respondent,

I am a student at Uganda Christian University, pursuing a Master's Degree in Public Health through the Save The Mothers program at Uganda Christian University. As part of the requirements for the completion of my studies, I am conducting research on "The Efficacy of Stress Resilience-Based Interventions on the Perceived Pregnancy-Related Stress Among Pregnant Refugee Adolescent Girls in Rhino Camp Refugee Settlement, Northwestern Uganda." This research is solely for academic purposes. I kindly request your participation in responding to the following questions as accurately as possible to help achieve the intended objectives. All information provided will be treated with the utmost confidentiality. Your honest responses and any additional comments you may have are crucial for the success of this study. I assure you that the information you provide will be kept confidential and will be used exclusively for academic purposes. Your cooperation in this study is highly appreciated.

Would you be willing to participate in this research?

Yes…… or No……..

Thank you.

Date: …… ……. …….

Day Month Year

Section 1: Demographic Information

1. Age: _____
2. Educational Background: _____
3. Marital Status: ☐Single ☐Married ☐Widowed ☐Divorced
4. Number of Children (if any): _____
5. Country of origin

Section 2: Pregnancy-Related Stress

On a scale of 1 to 5, where 1 is "Not at all stressful" and 5 is "Extremely stressful," please rate the following aspects regarding your pregnancy:

2.1. Physical health during pregnancy
☐1 ☐2 ☐3 ☐4 ☐5

2.2. Emotional well-being during pregnancy
☐1 ☐2 ☐3 ☐4 ☐5

2.3. Social support received during pregnancy
☐1 ☐2 ☐3 ☐4 ☐5

2.4. Access to necessary healthcare services
☐1 ☐2 ☐3 ☐4 ☐5

2.5. Financial concerns during pregnancy
☐1 ☐2 ☐3 ☐4 ☐5

2.6. Impact of COVID-19 on Pregnancy Stress

☐1 ☐2 ☐3 ☐4 ☐5

2.7. How did COVID-19 pandemic affect your stress levels during pregnancy?

_____

_____

Section 3: Resilience Assessment

3.1. How do you perceive your ability to cope with challenges and stressors during pregnancy?
☐Low ☐Moderate ☐High

3.2. Have you actively sought support or resources to enhance your resilience during pregnancy?
☐ Yes ☐ No

Section 4: Resilience-Based Interventions

4.1. Have you participated in any resilience-based interventions such as social capital programs, mentorship, or psychosocial support?
☐Yes ☐ No

4.2. If yes, please share your experiences and perceptions regarding the effectiveness of these interventions.

_____

_____

Section 5: Recommendations

5.1. Open-ended Questions:

5.1.1 Is there anything else you would like to share about your experiences?

_____

_____

5.1.2. Challenges,

_____

_____

5.3 Recommendations/suggestions related to pregnancy and resilience in the refugee settlement?

5.4 UCLA Loneliness scale

The next questions are about how you feel about different aspects of your life. For each one, tell me how often you feel that way.				
	Loneliness Scale	Hardly Ever	Some of the Time	Often
1	First, how often do you feel that you lack companionship?	1	2	3
2	How often do you feel left out?	1	2	3
3	How often do you feel isolated from others?	1	2	3

5.5 Anxiety: **GAD2**

	Over the last 2 weeks, how often have you been bothered by the following problems?	Not at all	Several days	More than half of days	Nearly every day
GAD1	Feeling nervous, anxious, or on edge				
GAD2	Not being able to stop or control worrying				

Thank you for your time and for accepting to participate in the study

Appendix II: Focus Group Discussion Interview Guide

Understanding Pregnancy-Related Stress and Resilience Among Refugee Pregnant Adolescents

I am a student at Uganda Christian University, pursuing a Master's Degree in Public Health through the Save The Mothers program at Uganda Christian University. As part of the requirements for the completion of my studies, I am conducting research on "The Efficacy of Stress Resilience-Based Interventions on the Perceived Pregnancy-Related Stress Among Pregnant Refugee Adolescent Girls in Rhino Camp Refugee Settlement, Northwestern Uganda." This research is solely for academic purposes. I kindly request your participation in responding to the following questions as accurately as possible to help achieve the intended objectives. All information provided will be treated with the utmost confidentiality. Your honest responses and any additional comments you may have are crucial for the success of this study. I assure you that the information you provide will be kept confidential and will be used exclusively for academic purposes. Your cooperation in this study is highly appreciated.

Would you be willing to participate in this research?

Yes…… or No……

Thank you.

Date: ……

Day Month Year

The guide is designed to explore experiences related to pregnancy-related stress and the perceived effectiveness of resilience-based interventions.

Introduction:

Commence with a formal welcome and introductions. Proceed with an elucidation of the objectives of the Focus Group Discussion. Highlight the significance of candid and sincere communication. Assure participants of the confidentiality of their contributions.

Icebreaker:

Initiate the discussion with a topic that is non-sensitive to ensure participants feel at ease. For example, invite them to recount a recent positive experience they have encountered.

Section 1: Experiences of Pregnancy-Related Stress

1.1. Introduction to Pregnancy:

Ask participants to share their thoughts on pregnancy.

What are the initial emotions or challenges you faced when you learned about your pregnancy?

1.2. Pregnancy Stressors:

Explore different aspects of pregnancy stress:

1.Physical health during pregnancy.

2.Emotional well-being.

1. Social support.
2. Access to necessary healthcare services.
3. Financial concerns.

1.3. Impact of COVID-19:

Discuss the influence of the COVID-19 pandemic on their stress levels during pregnancy.

How has the pandemic affected your access to healthcare and support?

Section 2: Levels of Resilience

2.1. Personal Coping Mechanisms:
Explore participants' individual strategies for coping with stress.

How do you personally cope with challenges during pregnancy?

2.2. Seeking Support:
Discuss participants' experiences in seeking support.

Have you actively sought support or resources to enhance your resilience during pregnancy?

Section 3: Resilience-Based Interventions

3.1. Participation in Interventions:
Inquire about any participation in resilience-based interventions (social capital programs, mentorship, and psychosocial support).

Have you participated in any programs or interventions aimed at supporting pregnant adolescents in the settlement?

3.2. Effectiveness of Interventions:
Explore participants' perceptions of the effectiveness of these interventions.

How do you feel these interventions have impacted your stress levels and well-being during pregnancy?

Section 4: Recommendations and Suggestions

4.1. Improving Support Services:

Ask for suggestions on how support services for pregnant adolescents in the settlement can be improved.

What changes or additions would you recommend to better support pregnant adolescents?

4.2. Challenges Faced:

Explore any challenges faced in accessing support or participating in interventions.

What challenges, if any, have you faced in seeking support or participating in programs?

Thank you very much for your time

Appendix III: Ethics Approval Letter

20th February, 2024

Catherine Nafula
Uganda Christian University
0774788292
Email: catherinenafula.n@gmail.com

UG-REC-026 APPROVAL NOTICE

To: Catherine Nafula, Principal Investigator

Re: UCU-REC Application titled: **Resilience-based Interventions and Perceived pregnancy-related stress among Pregnant refugee Adolescent girls: A case of rhino camp-refugee-settlement, North-western Uganda.**

Application Number: UCUREC-2023-745-1

Version: 4.0

Type: [ ] **Initial Review**
[ ] Protocol Amendment
[ ] Letter of Amendment (LOA)
[ ] Continuing Review
[ ] Material Transfer Agreement
[ ] Other, Specify:

I am pleased to inform you that the **UG-REC-026;** UCUREC approved the above referenced application.

Approval of the research is for the period from **20th February, 2024**, to **20th February, 2025**.

This research is considered minimal risk category.
As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.

2. Changes, amendments, and additions to the protocol or the consent form must be submitted to the REC for re-review and approval **prior** to the activation of the changes. The REC application number assigned to the research should be cited in any correspondence.

3. Reports of unanticipated problems involving risks to participants or other must be submitted to the REC. New information that becomes available which could change the risk: benefit ratio must be submitted promptly for REC review.

4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by subjects and/or witnesses should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
5. Regulations require review of an approved study not less than once per 12-month period. **Therefore, a continuing review application must be submitted to the REC eight weeks prior to the above expiration date of 20th February, 2025 in order to continue the study beyond the approved period.** Failure to submit a continuing review application in a timely fashion may result in suspension or termination of the study, at which point new participants may not be enrolled and currently enrolled participants must be taken off the study.
6. The REC application number assigned to the research should be cited in any correspondence with the REC of record.
7. Your research details have been shared with the Executive secretary of Uganda National Council for Science and Technology (UNCST) and you are **not** required to get clearance since you are a Masters Degree research. Refer to UNCST Research registration and clearance Policy and guidelines (July 2016) in Uganda section 6(e).

The following is the list of all documents approved in this application by **UG-REC _026:**

	Document Title	Language	Version	Version Date
1.	**Protocol**	**English**	1.0	2024-02-18
2.	Data collection tools	English	1.0	2024-02-18
3.	Informed Consent forms	English	1.0	2024-02-18

Signed and Stamped

……..

Prof. Peter Waiswa.
UCUREC Chairperson,
pwaiswa@musph.ac.ug

Appendix IV: OPM Research Clearence

THE REPUBLIC OF UGANDA

OFFICE OF THE PRIME MINISTER

DEPARTMENT OF REFUGEES ARUA REFUGEE DESK
PLOT 49 AVENUE ROAD P.O BOX 648, ARUA – UGANDA

TELEPHONE:0476420251, 0772854919

In any correspondence on this subject, please quote No: OPM/AR/055

2nd March 2024

Uganda Christine University

Dear Sir/Madam,

RE: PERMISSION TO ACCESS RHINO CAMP SETTLEMENT FOR DATA COLLECTION FOR ACADEMIC RESEARCH

Your letter on the above subject dated 20th February 2024 refers.

This is to inform you that permission has been granted to your student, Catherine N. Nafula to carry out data collection for academic research entitled ""***Resilience, Perceived Pregnancy-Related Stress and Associated Factors among Pregnant Refugee Adolescent Girls in Rhino Camp Refugee Settlement, Northwestern Uganda"*** in Rhino Camp Refugee settlement

By copy of this letter, the responsible officers are requested to accord Catherine N. Nafula the necessary assistance and support to enable her collect the data successfully.

While in the settlement, the student is requested to observe the rules and regulations governing the Refugee settlements.

After completion, share a copy of your final report with OPM on email: refugeepartnership@opm.go.ug

Yours faithfully,

OFFICE OF THE PRIME MINISTER
REFUGEE DESK OFFICE - ARUA
02 MAR 2024
PLOT 49 AVENUE RD
PO BOX 648 ARUA, UGANDA
TEL 0476620251

Solomon Osakan
REFUGEE DESK OFFICER

CC: The Settlement Commandant – Rhino Camp refugee settlement
CC: Ms. Catherine Nafula- Student UCU- Mukono

Appendix V: Work plan

Planned Activities	2024-2025													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Jan	Feb	Mar	Apr
Proposal Writing														
Proposal Presentation														
Seeking ethical Approval														
Pre-test of data collection tools														
Collection of Primary data														
Data Processing and Analysis														
Report writing and editing														
Presentation of dissertation														
Submission of the dissertation														
Defending of final dissertati														