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RESEARCH ARTICLE

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CAREGIVER'S KNOWLEDGE, PERCEPTION AND MITIGATION STRATEGIES TOWARDS TEENAGE PREGNANCY PREVALENCE IN SIAYA COUNTY, KENYA

*Kevin Ochieng, Jane Owenga, Elizabeth Omondi and Kevin Onuonga

Jaramogi Oginga Odinga University of Science and Technology

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ABSTRACT

Teenage pregnancy is the percentage of pregnant women aged 19 years or younger in a given period of time. It affects an estimated 21 million pregnancies each year in LMICs, of which approximately 50% are unintended and which resulted in an estimated 12 million births. In Africa, the rate of teenage pregnancy is 118 per 1000 females with 700,000 mortalities each year. In Kenya, the prevalence of teenage pregnancy is 15% while 21% in Siaya County. The high percentage in teenage pregnancy prevalence is attributed by factors such as peer pressure, poverty, lack of stable family structure, cultural practices, and lack of education on sexuality among others. In mitigation of teenage pregnancy, caregivers play a critical role which is closely linked to their perceptions and knowledge of teenage pregnancy. Gaining an understanding of caregiver perception and knowledge regarding teenage pregnancy and their role in mitigating the issue could help inform the development of effective interventions and policies. Studies specifically focusing on caregiver's knowledge, perceptions and mitigation strategies in Siaya County have been lacking. Therefore, the goal of this study was to determine caregiver's knowledge, perceptions and mitigation strategies towards teenage pregnancy prevalence in Siaya County. The specific objectives were to determine the prevalence of teenage pregnancy, determine the knowledge of caregivers towards teenage pregnancy, to determine the perception of caregivers towards teenage pregnancy and to establish the strategies put in place by caregivers in the mitigation of teenage pregnancy and to determine the association between caregiver socio-demographic attributes and teenage pregnancy prevalence in Siaya County. A cross-sectional study design was employed in this study. Pre-tested questionnaires and Key Informant Interview guide were used to collect data. A multi-stage cluster sampling technique was used to select a total of 319 households, while purposive sampling was used to select 6 key informants who participated in the study. Descriptive statistics and Chi-square test of independence were used to analyse quantitative data with the aid of SPSS version 23. Qualitative data were thematically analysed by using Nvivo software. The study findings revealed that the majority of caregivers displayed knowledge on teenage pregnancy based on a five-point Likert scale while had experience with a pregnant teenager. Caregivers generally held negative perceptions of teenage pregnancy but expressed positive perception towards perceived mitigation strategies listed, as indicated by weighted averages. Although caregivers agreed with practicing some of the mitigation strategies, they disagreed with others. Additionally, the study findings demonstrated that no statistically significant relationships were found between gender ($P=0.218$), age ($P=0.665$), marital status ($P=0.752$), occupation status ($P=0.866$), education level ($P=0.113$), and teenage pregnancy prevalence. Religion ($P\leq 0.050$), on the other hand, exhibited a significant influence on teenage pregnancy prevalence in Siaya County. The results of this study provide valuable insights into caregiver perceptions of teenage pregnancy and the mitigation methods they employed. The findings will inform the development of policies and interventions that address teenage pregnancy, which could help to identify best practices, challenges, and gaps in mitigating the problem.

*Corresponding author: Kevin Ochieng

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INTRODUCTION

Teenage pregnancy is the percentage of pregnant women aged 19 years or younger in a given period of time (WHO, 2022). According to World Health Organization (WHO) of 2016, analysis estimates that 16 million females between the ages of 15 and 19 get pregnant each

year. Additionally, developing countries account for 95% of all adolescent pregnancies (Ayele et al., 2018). Moreover, the average adolescent pregnancy rate in industrialized nations was 29 births per 1000 girls; however, it was as high as 133 births per 1000 in undeveloped countries. Furthermore, the rate in Africa is 118 per 1000 females. Similarly, about 70,000 female teens die each year in Africa (Sully et al., 2019).

Several demographic, behavioural, family and societal factors have been linked to teen pregnancy (Ochen *et al.*, 2019). These include peer pressure among teenagers, poverty, lack of stable family structure, cultural practices like early teenage marriages, lack of education on sexuality, having an elder sister with a history of teenage pregnancy, being unaware of fertile period during the menstrual cycle (Mezmur *et al.*, 2021), early sexual activity (Alukagberie *et al.*, 2023), early initiation of drinking or smoking and lack of contraceptive use (Bennetsen *et al.*, 2023). Caregivers play a pivotal role in mitigating teenage pregnancy, and this role is closely linked to their perceptions and knowledge (Emelumadu *et al.*, 2014). Caregivers who possess accurate and comprehensive knowledge about the implications of early pregnancy are better equipped to engage in open and informed conversations with teenagers. This can lead to adolescents becoming more aware of the potential consequences of their actions and choices since teenagers are likely to value their family's perception on sexual behaviour and childbearing (Skosana *et al.*, 2020). According to a study by Bah, (2016), teenagers who gave birth believed their family supported them, while those who abstained believed their family was against it. Furthermore, the perceptions that caregivers hold about teenage pregnancy can profoundly affect their proactive approach to addressing the issue. When caregivers hold negative views about teenage pregnancy and express disappointment towards their pregnant daughters, they might not prioritize discussions about safe sex practices and pregnancy prevention within the household. This, unfortunately, creates a conducive environment for the occurrence of teenage pregnancy (Tryphina Skosana *et al.*, 2020). Teenage pregnancy is often associated with increased risk of maternal and child death, low birth weight, and poor health outcomes for both the mother and the child (Yah *et al.*, 2020).

In Kenya, teenage pregnancy is a significant problem, with approximately one in five teenage girls having experienced pregnancy by the age of 19, and is widely perceived as a negative thing by the society (KNBS, 2023a, Ayieko *et al.*, 2023). In Siaya, teenage pregnancy is often seen as a sign of poor family planning and lack of education, and it is considered a major barrier to social and economic development (Omoro *et al.*, 2017). Siaya is one of the counties with the highest rates of teenage pregnancy in Kenya, with approximately 21% of teenage girls having experienced pregnancy by the age of 19 as compared to neighbouring counties such as Kisumu (11.1%), Kakamega (15.1%) and Busia (18.3%) (KNBS, 2023a). Moreover, according to the Kenya Demographic and Health Survey, (2014), a person in Kenya makes their sexual debut around 15, and the same is true for teen pregnancies, while in Siaya County, by the age of 17, half of the County's women (20-49 years old) and men (20-54 years old) had their first sexual experience. One in five (17%) females between the ages of 15 and 19 have started having children. 3.6 % of women expect their first child, and 13.6% have already given birth, compared to 3.4% and 14.7% nationally. The adolescent birth rate (age-specific fertility rate) for females in Siaya County is 97 births per 1000 girls, which is higher than the national average of 96 (AFIDEP, 2015). This is a cause for concern as teenage pregnancies often result in school dropouts and only 2% of teenagers return to school and early marriages, which exacerbate the cycle of poverty in the county (KNBS, 2023b). The Kenyan government has implemented strategies to mitigate teenage pregnancy (Adolescent Sexual and Reproductive Health Policy, 2015). One of the measures is the provision sex education in schools, better awareness of the contraceptives and enhanced prosecution of the perpetrators (Sully *et al.*, 2019). However, the number of girls involved is still huge and leads to affected girls missing opportunities in life. Another strategy is to provide access to affordable and quality reproductive health services, which includes contraception and access to safe abortion services through the establishment of youth-friendly clinics that provide confidential and non-judgmental services to teenagers (Kenya Youth Policy, 2018). Moreover, community-based interventions have been implemented to prevent teenage pregnancy (Kumar *et al.*, 2018). Religious leaders too have been involved in addressing teenage pregnancy issue by promoting abstinence, which is one of the preventive measures (Taylor *et al.*, 2021).

These interventions have been focused on promoting positive social norms, reducing gender-based violence, and enhancing communication between parents and teenagers but have not worked effectively in prevention of teenage pregnancy in Kenya (NCPD, 2021). Siaya County established interventions and strategies such as the formation of a Multi-sectorial teenage pregnancy task force, organizing annual adolescent open days to discuss teenage pregnancy issues, developing an action plan for Adolescent Reproductive Health and HIV, intensifying school health activities, and increasing adolescent and Youth-friendly services which have had limited impact in teenage pregnancy reduction in the region (Siaya County Health Sector Strategic Plan 2013-2018 and Annual Work Plan -2018 & 2019). Addressing adolescent pregnancy and the well-being of the mothers and children is a top priority in global public health (Walawe *et al.*, 2016), and the need to investigate caregivers' perception and mitigation strategies towards teenage pregnancies is vital in understanding of these challenges. Other literatures have suggested that interventions fail to produce results because they lack knowledge of and sensitivity concerning the existing community norms and beliefs (Miriti & Mutua, 2019). This had led to limited scientifically sound data on the caregiver's knowledge, perception and mitigating strategies on teenage pregnancies compared to the magnitude of the sexual and reproductive health (SRH) problems experienced in Siaya County. Consequently, no study has been conducted in Siaya County to examine the knowledge, perception and mitigation strategies put in place by caregivers in preventing teenage pregnancy. This study explored caregivers knowledge, perception and mitigation strategies around the issues related to prevalence teenage pregnancy within the Kenyan context.

Statement of the problem: Pregnancy-related complications and delivery are the greatest cause of mortality for girls between the ages of 15 and 19. Unmarried pregnant teenagers experience school dropout, stigma, rejection, or violence from partners, parents, and classmates. Girls' possibilities for future education and work may be jeopardized as a result of adolescent pregnancy and childbirth (World Health Organization, 2019). Despite the extensive research on teenage pregnancy, there is a noticeable gap in the literature regarding the knowledge and perceptions of caregivers in relation to teenage pregnancy. Additionally, existing studies primarily focus on the experiences of teenagers themselves, leaving a significant gap in our understanding of how caregivers, such as parents, guardians, or family members, perceive and understand teenage pregnancy. Siaya County has implemented interventions and strategies; however, their impact in reducing teenage pregnancy rates in the region has been limited in mitigation of teenage pregnancy in the region (Siaya County Health Sector Strategic Plan 2013-2018, 2013). According to Godia *et al.*, (2014), understanding caregiver perception is crucial for developing effective intervention programs and support mechanisms, as caregivers play a pivotal role in shaping the sexuality behaviours of teenagers. While previous research has explored various factors contributing to teenage pregnancy, a comprehensive investigation into caregiver knowledge, perception and their mitigation strategies towards teenage pregnancy remains conspicuously absent, despite the significant magnitude of the sexual and reproductive health (SRH) challenges experienced in Siaya County. Addressing this gap is essential for informing policies, educational programs, and support initiatives aimed at preventing teenage pregnancy. Future research in this area will provide valuable insights into the dynamics between caregivers and teenagers in the context of reproductive health, which remains unexplored. Based on these gaps, this study explored knowledge, perception and mitigation strategies among caregivers around the issues related to the prevalence of teenage pregnancy.

Broad objective: To determine caregiver's knowledge, perception and mitigation strategies on teenage pregnancy prevalence in Siaya County.

Specific Objectives

1. To determine the knowledge of caregivers towards teenage pregnancy in Siaya county.

2. To determine the perception of caregivers towards teenage pregnancy in Siaya county.
3. To establish the strategies put in place by caregivers in the mitigation of teenage pregnancy in Siaya County.
4. To determine the association between the socio-demographic attributes of caregivers and the prevalence of teenage pregnancy in Siaya county

Justification of the study: Teenage pregnancy is a significant social issue in Siaya County, given the burden its high burden with approximately 21% of teenage girls having experienced pregnancy by the age of 19 (KNBS, 2023). This was a cause for concern as teenage pregnancies often result in school dropouts, early marriages, and poverty, which exacerbated the cycle of poverty in the county. Additionally, caregivers play a crucial role in influencing the behaviour and decisions of teenagers by either acting as enablers or barriers towards mitigating teenage pregnancy. Understanding their perceptions towards teenage pregnancy and mitigation measures in preventing the problem could help in designing effective interventions and policies. Moreover, there was lack of studies that have specifically focused on the caregiver's knowledge, perceptions and mitigation strategies in Siaya County. Studies on teenage pregnancy in Kenya have mainly focused on the youth's knowledge and behaviour towards pregnancy and the effectiveness of interventions, with little attention to the caregiver's knowledge, perceptions and the association of socio-demographic attributes and teenage pregnancy, prompted the need for this study.

Significance of the Study: This study holds significant importance in understanding the knowledge, perception of the caregivers and mitigation strategies regarding teenage pregnancy in Siaya County. By engaging in discussions within the community, valuable insights could be gained to effectively manage and reduce adolescent pregnancy locally. Understanding caregiver's knowledge and perceptions on teenage pregnancy could also help in identifying the gaps and challenges in mitigating teenage pregnancy in Siaya County. It could also inform the development of personalized and culturally sensitive interventions that involve caregivers as key stakeholders in mitigating teenage pregnancy. In conclusion, conducting a study on caregiver's knowledge, perceptions and mitigation strategies towards teenage pregnancy in Siaya County was crucial in informing policies and interventions that address teenage pregnancy, which could also help to identify best practices, challenges, and gaps in mitigating the problem. The research will also add to the body of knowledge already available on teen pregnancies. The results of this study will also inspire more research on teen pregnancy in Siaya County.

Scope of the study: The study was conducted in Siaya County, Kenya. The study targeted primary caregivers in 57,823 households who had an experience of having had a pregnant teenager. The study aimed at the knowledge, perception of caregivers on teenage pregnancy and mitigation strategies used in controlling teenage pregnancy in Siaya County. The study was conducted for a period of one year.

Limitations of the study: The interpretation of the findings from this study took into account several limitations. Firstly, social desirability bias may have influenced the responses of caregivers, particularly those who had pregnant teenagers in their households and felt that their perspectives were subject to judgment. Consequently, the representation of caregivers' true knowledge or perceptions may have been distorted, as socially desirable responses were favoured. To resolve this limitation, the researcher encouraged the respondents to be free and genuine in their views as confidentiality was assured and that genuine results would help in generating accurate interventions to counter the menace. Lastly, this study was restricted to a single ward in Siaya County, which restricts the generalizability of the findings to other wards within the same county. The researcher ensured proper sampling techniques leading to a representativeness study sample hence increasing generalizability of the findings in addressing the limitation. To address these limitations, all these measures were taken during the study to ensure that the findings align as closely as

possible with the actual views and experiences of caregivers in Siaya County. However, it was important to acknowledge these limitations when interpreting the study's results.

METHODOLOGY

Study area: Alego Sub County in Siaya County served as the study area. Siaya County is situated in the Nyanza Region of the Lake Victoria Basin. It is bordered to the north by Busia County, east by Kakamega County, Vihiga County, south by Kisumu County, and west by Lake Victoria. It has a population of 842,304 and a land area of 2,530.5Km². There are 30 electoral wards and six sub-counties in Siaya County. AlegoUsonga, Bondo, Gem, Ugenya, Ugunja, and Rarieda are the sub-counties. Out of the six sub-counties in Siaya County, AlegoUsonga Sub-County has a significant area of 605.8 square kilometres. Bondo Sub-County, Gem Sub-County, Ugenya Sub-County, and Busia County are its neighbours to the south, east, north, and west. With an elevation of 1220 meters above sea level, AlegoUsonga sub-county is located between latitudes 00^o 18'North and 0^o26'North and between longitudes 33^o5 8'East and 34^o 33'East (KNBS and SID, 2013). The locals of AlegoUsonga carry out various social and economic activities, such as mixed subsistence farming, mining, transportation, and communication. Christians make up the bulk of the population. The Sub County is endowed with health facilities and one referral hospital which provides health services to its members (Siaya County-Annual Development Plan 2017-2018, 2017).

Study design: This study used a concurrent mixed method among caregivers from the sampled households in AlegoUsonga, Siaya County from January 2021 to January 2022. This approach combined rigorous quantitative analyses (descriptive cross-sectional survey) and qualitative methods (Key Informant Interviews) which were combined concurrently. Qualitative research was used to explore comprehensively the knowledge and perception of caregivers towards teenage pregnancy.

Target population: A population is a collection of pieces or cases, individuals, things, events, or objects that meet particular standards and are used to extrapolate study findings. The target population of this research consisted of all caregivers from all the 57,823 households which was the estimated number of households in AlegoUsonga Sub County (KNBS, 2019). In each household, a caregiver of a teenage girl was targeted.

Inclusion Criteria: The study participants included all caregivers for quantitative and qualitative study who were willing, provided consent to participate in the study and had experience of teenage pregnancy.

Exclusion Criteria: The study excluded all participants who did not provide consent to engage in the research in both qualitative and quantitative study, those who were not present during data collection period, and anybody else who was unwilling to participate in the study.

Sample size determination: The sample size was determined by using the formula by Fishers *et al.*, (2014) to generate the sample size. The sample size was calculated as follows:

$$n = \frac{Z^2 PQ}{d^2}$$

Where;

n = desired sample size

Z = the normal deviation at the required confidence level.

P = the proportion in the target population estimate to have characteristic being measured.

Q = 1-p (the proportion of the population without the characteristics).

d = the level of statistical significance test (0.05). The prevalence of teenage pregnancy in Siaya County is 21% according to Kenya National Bureau of Statistics report of January 2023. Therefore, using this formula, the sample size was generated as below:

$$n = \frac{1.96^2 \times 0.21(1-0.21)}{0.05^2} = 254.9$$

The sample size was therefore 255 respondents.

By calculating the design effect with sample size

$$\begin{aligned} N &= DEFF + 255 \\ &= 1 + ICC(m-1) + 255 \\ &= 1 + 0.05 * (629-1) + 255 \\ N &= 287.4 \end{aligned}$$

The adjusted sample size was therefore 287 respondents
Since

Intra-cluster correlation is assumed 0.05
m is the average number of households in the cluster (13818/22) is 629(KNBS and SID, 2013)

To cater for the non-response of the questionnaires, an adjustment to the sample size was made based on the anticipated non-response using the formula below:

$$N^* = \frac{N}{(1-W)}$$

Where;

N* = is the adjusted sample size = 287
N = is the calculated sample size
W = is the percentage anticipated non-response rate is 10%.
Therefore, based on the above formula the new sample size was;

$$N^* = \frac{287}{1-0.1} = 318.88$$

The final sample size was 319 for quantitative data

Sampling Procedure: The study employed multi-stage cluster sampling to choose the study's primary respondents. This sampling design was chosen because it offers a method for sampling a population in situations where there is not a complete population list or when it isn't feasible to create one(Ebrahim, 2018).In the first step, AlegoUsonga was divided into six clusters: North Alego, South East Alego, West Alego, Central Alego, Siaya Township and Usonga ward. South East Alego was randomly selected from the clusters in the second step for administration of quantitative data collection. South East Alego has 22 sub locations namely: Agoro Oyombe, Agoro Lieye, Barding, Bar Agulu, Rambo, Agage, Usingo, Randago, Usere, Ojwando, Nyajuok, Kogelo, Mur Ng'iya, Nyajuok, Mur Malanga, Bar Olengo, Magungu, Nyang'inja, Rakuom, Ochiewa, Mugane and Masumbi sub location. The villages in each of these sub-locations were then considered to arrive at 13,818 households (KNBS and SID, 2013) as shown in Table 3.1 below.

Table 1. Distribution in terms of Households

No.	Clusters /Locations	Population
1	Siaya Township	11797
2	North Alego	9754
3	South East Alego	13818
4	Usonga	4202
5	West Alego	9125
6	Central Ward	9127
	Total	57823

Source (KNBS and SID, 2013)

In the third step, the number of households in each village was obtained from local administrative leader in South East Alego for

study implementation. The households were listed in an excel and given and identification numbers. In the sixth step, 319 households were systematically randomly selected from the list of participation in the study. Systematic random sampling technique was important in allowing the researcher to have confidence in a sample that was representative. A systematic sampling interval of respondents was derived from;

$$\text{Sampling interval} = \frac{\text{Total sample frame}}{\text{Sample size.}}$$

$$\text{Sample interval} = \frac{13818}{319} = 43.31 = 43$$

In cluster (South East Alego), the sampling interval was 43; meaning 1 household in every 43 households from the total number of households was selected. Since 1 household in every 43 households was needed, a random number table was used to select the first household from the study population. The 23rd household was used as starting point and then selected every 43rd household from this point. As such, 23rd + 43rd households were selected on the list, then (23rd + 43rd) + 43rd household, and so forth until 319 sample size was obtained from the entire cluster. From each household, a caregiver was targeted. See the multi-stage sampling process in Figure 3.1. For qualitative data collection, the sample was derived from the same population to complement the quantitative results and give a deeper understanding between the variables (Ishtiaq, 2019). The researcher purposively identified and selected key informants for qualitative data collection. Equal number of local administrators from different sub location within study area and religious leaders from different religion were purposively selected based on their understanding and lived experience of teenage pregnancy and the mitigation strategies being investigated. Three chiefs and three religious leaders who were also caregivers in the study area, were, therefore, selected and consented to participate in the study. The total number of participants recruited to participate in qualitative data collection was extremely deemed fit since the researcher became empirically confident that saturation was achieved thereby multiple perception of individuals were already been captured (Omona, 2013).

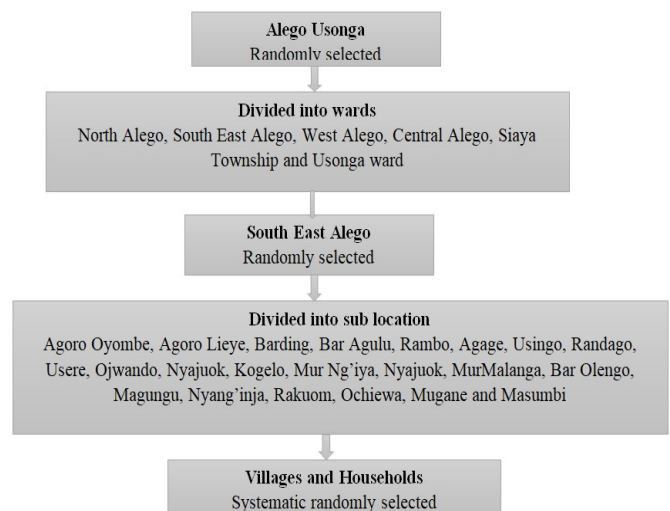


Figure 1. Multi-stage sampling process

To achieve this study sample, the researcher identified the geographical center of the village with the assistance of village chairman and counted all households from the center to the edge of a village. One household from the total counted was selected to act as the first household to visit. This method was done for all villages in order to attain the sample size of 319 households.

Pretesting: Pre-testing was done to minimise the risks of encountering unmanageable problems during data collection and analysis in the main study (Janghorban et al., 2014). It provides information concerning comprehensibility of the questions, difficulties that respondents would have in answering the questions

and the duration of completing the questionnaires or interview guides (Ploughman *et al.*, 2010). Furthermore, the pre-testing of the instruments is meant to determine the suitability of the language used, the focus of the questions and presence of any other defects to allow for corrections before they are used in the main study (Orwasa & Orodho, 2018). The study instruments were pretested with 28 caregivers from a neighbourhood cluster which was not the actual study area, 26 participants participated in the retest for quantitative data and 2 participants were for qualitative pre-test both at Siaya Township. The instruments were checked to determine if the data obtained compliments the quantitative findings and result in a coherence understanding of the caregiver's perception towards teenage pregnancy and mitigation strategies (Venkatesh *et al.*, 2013). Likewise, pre-testing enabled the researcher to check the correctness of language used and clarity of the instruments that allowed the respondents and the researcher to have a common picture of meaning of the interview questions (Ghorbanzadeh *et al.*, 2023).

Validity of the study tools: According to Mohamad *et al.*, (2015), validity is the extent to which the participants and the researcher's interpretations and conceptions have similar meanings. These are standard practices for determining a measure's content validity. It was necessary to rigorously examine the questionnaires in order to ensure that all research questions were covered by its contents. The researchers discussed the instruments with peer colleagues to improve the content and submitted the instrument to two experts in the health science department at Jaramogi Oginga Odinga University of Science and Technology (JOUST) in order to increase validity. The researchers further improved the validity of the instrument by making necessary corrections based on feedback from peers and experts.

Reliability of the study tools: According to Mohamad *et al.*, (2015), internal consistency reliability determines the correlation between all items that constitute a construct to prove that the items measure the same concepts. The researchers determined internal consistency reliability by using Cronbach Coefficient Alpha (α) because the items in the instruments measured more than two responses as opposed to Kruder-Richardson (KR- 20) formula that is used in dichotomous scales (Trakman *et al.*, 2017). The items for questionnaires were tested for internal consistency using Cronbach Coefficient Alpha method. Data with relatively high internal consistency had Alpha Coefficient of ≥ 0.7 was generalized to reflect opinions of all respondents in the target population. The following formulae were used to determine internal consistency reliability:

$$\alpha = \frac{N}{N-1} \left(\frac{\sigma_x^2 - \sum_{i=1}^N \sigma_{y_i}^2}{\sigma_x^2} \right)$$

Where:

N= is the number of survey items in the scale.

σ_x^2 = is the variance of the observed total scores.

$\sigma_{y_i}^2$ = is the variance of item i for person y.

The questionnaire was pretested with 26 caregivers from a neighbourhood cluster, with an average of 0.955, which was within the acceptable reliability range hence rendering the tool reliable. This was to confirm the ease of understanding of the questions and correct the wording of the sentence. Reliability of the study guides for key informant interviews was determined by using the constant comparative method Orwasa & Orodho, (2018) whereby the qualitative data obtained during pre-test was reviewed line by line to identify apparent concepts or expressions (themes) which were coded and categorised while taking note of the respondents lived experiences. The underling themes were checked if they complement and validate data obtained during pre-test of the questionnaires (Trakman *et al.*, 2017).

Data collection procedure: Quantitative data was collected using pretested interviewer questionnaires. Data was collected by Research assistants for a period of three months between April 2021 and August 2021. The respondents who did not consent to participate

were thanking for their time. The researchers led the research assistants to collect the data from the respondents who consented to participate in the study. The research assistants filled the questionnaire while asking the respondent the questions. Qualitative data was collected using study guides. Key informants were recruited and consented to participate in the study. The researchers conducted the interview while research assistants facilitated the scheduling of the interviews. The interview was tape recorded and later transcribed for analysis for in-depth understanding on the perception towards teenage pregnancy and mitigation strategies.

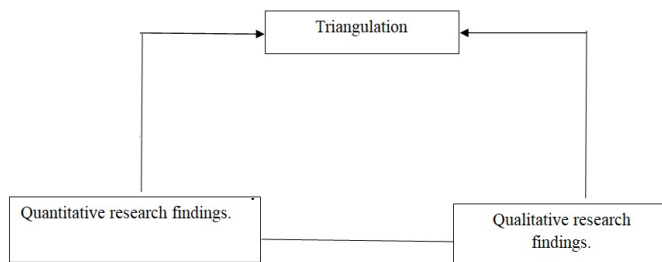
Data analysis method: The analytical procedure for quantitative data involved editing, coding, cleaning and entering in the SPSS version 23-computer program while qualitative data involved transcribing, coding, contextualizing and offering interpretations. Data analysis included repeated review of all questionnaire data, interview transcripts and relevant documents to gain points of convergence in the research results (Stadtlander, 2014). Data from various sources were triangulated to allow for refinement of interpretations and solidification of the findings. The primary data analysis method that was employed in this study was Pearson chi-square test analysis for inferential statistics. Quantitative data was derived from the questionnaire items which some involved measurement from Likert scale, ranging from 1, 2, 3, 4 and 5. Where 1 represents Strongly Disagree, 2 Disagree, 3 Undecided, 4 Agree and 5 strongly agree respectively. The responses from the respondents were organised in a codebook and entered into the computer with the aid of Statistical Package for Social Sciences (SPSS) version 23 for windows computer program initially to test for distribution assumptions using the Kolmogorov-Smirnov (K-S) test (Ishtiaq, 2019). The use of the K-S test allowed for determining whether the sample came from a hypothetical normal distribution to qualify the data collected to be suitable for further parametric statistical analysis (Bolen *et al.*, 2014). Lastly, Pearson chi-square test statistics was conducted to examine whether and to what extent of caregivers' socio demographic variables and prevalence of teenage pregnancy prevalence in Siaya County. Descriptive statistics were presented in tables of measures of central tendency such as frequencies, percentages, means and standard deviation while inferential statistics were in form of co-efficient and beta weights. Statements under the knowledge and perception of the caregivers were measured on a five- point Likert Scale ranging from strongly disagree (1) to strongly agree (5). Weighted average of 3.50-5.00 indicated agreement to a statement while a range of 1.00-2.49 indicated disagreement to a statement. Specifically, weighted average of 1.00-1.49 represented strongly disagrees; 1.50-2.49 represented disagree; 2.50-3.49 represented undecided, 3.50-4.49 represented agree and 4.50-5.00 represented strongly agree. Accordingly, following the recommendations of Heo *et al.*, (2022) the interpretations of the responses by the respondents were made.

The researcher analysed the responses using weighted average (WA) and standard deviation. On the basis of this, the decision rule for each item under caregiver perception. Qualitative data analysis was based on transcripts of the key informant interviews analysed thematically according to the research objectives and reported in themes, narratives and direct quotations of the interviewees (Kiger & Varpio, 2020) indicated that thematic analysis is a method for systematically, identifying, organizing and reporting patterns of meaning (themes) across a dataset. Through focusing on meaning across a dataset, thematic analysis allowed researchers to understand and make sense of shared meanings and experiences. Therefore, thematic analysis does not aim at identifying unique and idiosyncratic meanings and experiences found only within a single data item (Kiger & Varpio, 2020) but it is a flexible approach of identifying what was common to the way a phenomenon is perceived, understood or experienced by the participants in relation to the topic being studied, and of making sense of those commonalities by addressing the whole dataset or its small section or sections (Vaismoradi & Snelgrove, 2019). Consequently, the data was analysed using reflective thematic analysis, as described by Kiger & Varpio, (2020) and Connelly & Peltzer, (2016).

While adopting a critical realist framework, analyses involved identifying both semantic and latent meanings in the dataset, following both deductive and inductive approach to generate codes from the qualitative sources of data thereby enabled the researcher to identify the patterns of meaning in the study. The themes were actively constructed from the data by clustering a set of codes which tend to converge to a particular view-point to address the phenomena being studied in-depth leading to a coherent interpretation, discussion and conclusion in line with research objectives (Stadtländer, 2014). The analysis process involved first transcribing and organizing all the data, then giving the codes to the first set of field notes drawn from the interviews, having noted personal reflections and other comments in the margin. The second stage involved sorting and sifting through the materials to identify similar phrases, relationships between the variables, patterns, themes and common sequences. The third stage was the identification of patterns, processes, commonalities and differences and taking them out to the field in next wave of data collection. The fourth stage was the elaboration of a small set of generalizations that cover the consistencies discerned in the database. Finally, an examination of the generalizations made in light of a formalized body of knowledge in the form of constructs or theories was done (Kiger & Varpio, 2020).

Triangulation of the Quantitative and Qualitative research findings: Quantitative and qualitative findings generated were triangulated to provide clear explanations of the relationships between the study variables. Figure 3.2 shows the triangulation model that this study adopted.

Figure 3.2. Research study findings triangulation model



Source: (Ashraf et al., 2020)

Figure 3.2 illustrates the triangulation process adopted by this study. It showed how quantitative and qualitative findings were integrated after analysis. Integration described the extent to which the quantitative and qualitative findings create coherence in the study (Ishtiaq, 2019).

Internal validity of mixed methods data: In order to enhance internal validity of mixed methods data, the researchers ensured that the both sample of the qualitative and quantitative phase of the study were drawn from the same sample that was used during study to provide rich information about the quantitative findings to allow for a better understanding of the caregiver's perception towards teenage pregnancy and mitigation strategies. Similarly, the researchers used adequate and representative sample during of the study for both quantitative and qualitative study (Ishtiaq, 2019).

Ethical Consideration: To conduct academic research, the researcher received approval from the post-graduate studies office of JaramogiOgingaOdinga University of Science and Technology (JOUST), ethical clearance from JOUST, and; JaramogiOginga Teaching and Referral Hospital (JOOTRH) Ethical Review Committee. This information was used when the researcher applied for a research permit from National Commission for Science, Technology, and Innovation (NACOSTI), which ultimately enabled the researchers to get other permission letters from the Ministry of Education, Science and Technology (MOEST) Director and the County Commissioner. These letters enabled the researchers to access the subjects in AlegoUsonga Sub County. Informed consent, which is

the process by which people decide whether to engage in an investigation or not after being informed of the facts regarding the research, was used to get permission from the study participants. Every detail necessary to understand the research, its goal and how it will directly or indirectly benefit the participants were explained. Before participants signing to participate, each participant had the opportunity to ask any questions about the research. Similarly, participants were informed of voluntary participation in the investigation and were assured of confidentiality and anonymity of records that were received. In this line, all the identifying information from the participants were anonymized and data kept in kept in undisclosed safe that was only accessible to the researcher for purposes of reporting the research findings to JOUST, JOOTRH, and NACOSTI. This also protected the participant from harm or risk that might have resulted from data sharing. However, no participant withdrawn from the study. Upon completion of the research study, the researcher promised to destroy the data obtained. On justice, during sampling, the researchers used cluster sampling technique to ensure that heterogeneity of the study population was increased, by creating cluster that contained subsets of the population whose members had similar characteristics (homogeneous) to allow for representative sample size by coming up with study sample whose composition was proportionately determined when each possible participant is given an equal chance to participate. The informed consent is at appendix I. The researchers ensured that ethical considerations were applied and adhered to for the protection of the participants.

RESULTS

Socio-demographic characteristics of the study participants:The study sought to determine the socio demographic characteristics of the study participants in terms of age, gender, level of education, marital status, main occupation and religion.

Table 2. Socio-demographic characteristics of respondents
N=319

Participants Characteristics		Frequency (n)	Percentage (%)
Gender of respondents	Male	122	33.20
	Female	197	66.80
Marital Status	Single Parent	25	7.80
	Married	212	66.50
	Separated	31	9.70
	Widow	33	10.30
	Widower	18	5.60
Age of respondents	30 -39 years	45	14.10
	40 - 49 years	96	30.10
	50 -59 years	122	38.20
	60 Years and above	56	17.60
Highest Level of Education	Primary	86	27.00
	Secondary	114	35.70
	Tertiary/college	85	26.60
	University	34	10.70
Main Occupation	Self-employed	108	33.90
	Employed	109	34.10
	Not employed	102	32.00
Religion of respondents	Christian	273	85.60
	Muslim	21	6.60
	Traditional	25	7.80

Source: Field data, 2021

The gender distribution of the caregivers indicated that 33.20% were male, while the majority, accounting for 66.80%, was female. In terms of marital status, the highest percentage was married participants at 66.50%, followed by widows at 10.30%. The remaining respondents were classified as separated (9.70%), single parents (7.80%), and widowers (5.60%). Regarding age, the largest proportion of respondents fell within the 50-59 years' category, comprising 38.20% of the sample. The 40-49 years' group at 30.10% followed this. Participants aged 30-39 years constituted 14.10%, while those aged 60 years and above accounted for 17.60%. In terms of education level, secondary education was the most prevalent

category at 35.70%, followed by primary education at 27.00%. Tertiary/college education accounted for 26.60%, while university education represented 10.70% of the respondents. The main occupations of the participants were distributed evenly, with self-employed individuals comprising 33.90%, employed individuals at 34.10%, and unemployed participants at 32.00%. Lastly, the majority of the respondents identified as Christians, making up 85.60% of the sample, followed by individuals practicing traditional religions at 7.80% and Muslims at 6.60%. These findings provide a comprehensive overview of the demographic characteristics of the study participants.

Knowledge on teenage pregnancy: The study sought to explore the knowledge of the participants on teenage pregnancy and mitigation strategies towards teenage pregnancy. The table 4.2 indicates that 87.77% of the study participants are aware of teenage pregnancy while 78.06% of them have had an experience with a pregnant teenager in their household. The participants were further asked to give their opinions on the statements relating to knowledge towards teenage pregnancy including questions on the causes and consequence of teenage pregnancy. The responses were measured using five point Likert scale and presented in a table.

The findings presented in Table 4.3 reveal the participants' agreement regarding the causes of teenage pregnancy in the study area. The results indicate that peer pressure among teenagers (mean=4.18, SD=0.909), poverty among caregivers (mean=4.22, SD=0.863), lack of stable family structure among teenagers (mean=4.26, SD=0.872), early teenage marriage or cultural practices (mean=4.28, SD=0.894), lack of sexual education and awareness (mean=4.31, SD=0.872), drug abuse by teenagers (mean=4.16, SD=0.917), sexual violence or abuse (mean=4.24, SD=0.940), and school dropout (mean=4.10, SD=0.935) were perceived as significant factors contributing to teenage pregnancy. The weighted average of 4.22 indicates that caregivers in the study area possessed a good understanding of the causes of teenage pregnancy. Further exploration of knowledge of teenage pregnancy the study captured various responses. For instance, Interviewee mentioned that;

"These are pregnancies below the age of 19yrs." (R4).

The study further established the causes of teenage pregnancy in the community from the qualitative study, R2 stated that;

"... they will go to this dance disco at funerals, videos and movies where they meet the boys so I do blame parents so much because they do not take care. The next thing is that these young ladies do

Table 4.2. Knowledge on teenage pregnancy

		Freq (n)	Percent (%)
Have ever heard about teenage pregnancy	Yes	280	87.77
	No	39	12.23
Have had an experience with a pregnant teenager in your household?	Yes	249	78.06
	No	70	21.94

Source: Field data, 2021.

Table 4.3. Descriptive statistics on causes of teenage pregnancy

Causes of teenage pregnancy		Prevalence of teenage pregnancy		Mean		Std. Deviation
		Yes n (%)	No n (%)	Statistic	Std. Error	
Peer pressure among teenagers	Strongly disagree	4(1.25%)	8(2.5%)	4.18	0.05	0.91
	Disagree	1(0.31%)	4(1.25%)			
	Neutral	7(2.19%)	14(4.39%)			
	Agree	48(15.05%)	109(34.17%)			
	Strongly agree	37(11.60%)	87(27.27%)			
Poverty among caregivers	Strongly disagree	4(1.25%)	6(1.88%)	4.22	0.048	0.863
	Disagree	1(0.31%)	4(1.25%)			
	Neutral	6(1.88%)	10(3.13%)			
	Agree	54(16.93%)	108(33.86%)			
	Strongly agree	32(10.03%)	94(29.47%)			
Lack of stable family structure(Broken families)	Strongly disagree	3(0.94%)	7(2.19%)	4.26	0.049	0.872
	Disagree	1(0.31%)	3(0.94%)			
	Neutral	5(1.57%)	13(4.08%)			
	Agree	53(16.61%)	94(29.47%)			
	Strongly agree	35(10.97%)	105(32.92%)			
Early teenage marriage(cultural practices)	Strongly disagree	4(1.25%)	8(2.51%)	4.28	0.05	0.894
	Disagree	1(0.31%)	2(0.63%)			
	Neutral	2(0.63%)	12(3.76%)			
	Agree	45(14.11%)	100(31.35%)			
	Strongly agree	45(14.11%)	100(31.35%)			
Lack of sexual awareness(Sex Education)	Strongly disagree	3(0.94%)	7(2.19%)	4.31	0.049	0.872
	Disagree	1(0.31%)	3(0.94%)			
	Neutral	5(1.57%)	10(3.13%)			
	Agree	47(14.73%)	92(28.84%)			
	Strongly agree	41(12.85%)	110(34.48%)			
Drug abuses by young people (Alcohol abuse)	Strongly disagree	3(0.94%)	10(3.13%)	4.16	0.051	0.917
	Disagree	1(0.31%)	4(1.25%)			
	Neutral	5(1.57%)	14(4.39%)			
	Agree	52(16.30%)	110(34.48%)			
	Strongly agree	36(11.29%)	84(26.33%)			
Sexual violence or abuse i.e. rape	Strongly disagree	3(0.94%)	10(3.13%)	4.24	0.053	0.94
	Disagree	1(0.31%)	6(1.88%)			
	Neutral	3(0.94%)	9(2.82%)			
	Agree	50(15.67%)	94(29.47%)			
	Strongly agree	40(12.54%)	103(32.29%)			
WEIGHTED AVERAGE				4.22		

Table Legend: 1-totally disagree, 2-disagree, 3-neutral, 4-agree; 5-totally agree Calibration by weighted average.

Table 4.4. Descriptive statistics on caregiver Knowledge of consequences of teenage pregnancy

Consequences of teenage pregnancy		Prevalence of teenage pregnancy		Mean		Std. Deviation
		Yes(n)	No (n)	Statistic	Std. Error	Statistic
Maternal mortality	Strongly disagree	2(0.63%)	9(2.82%)	4.16	0.049	0.881
	Disagree	1(0.31%)	4(1.25%)			
	Neutral	8(2.51%)	13(4.08%)			
	Agree	52(16.30%)	115(36.05%)			
	Strongly agree	34(10.66%)	81(25.39%)			
Psychological effects i.e. depression	Strongly disagree	5(1.57%)	15(4.70%)	3.86	0.061	1.092
	Disagree	11(3.44%)	10(3.13%)			
	Neutral	5(1.57%)	28(8.78%)			
	Agree	49(15.36%)	107(33.54%)			
	Strongly agree	27(8.46%)	62(19.44%)			
Chased from home	Strongly disagree	4(1.25%)	12(3.76%)	4.21	0.058	1.035
	Disagree	2(0.63%)	8(2.51%)			
	Neutral	6(1.88%)	12(3.76%)			
	Agree	41(12.85%)	81(25.39%)			
	Strongly agree	44(13.79%)	109(34.19%)			
School drop out	Strongly disagree	1(0.31%)	12(3.76%)	4.25	0.054	0.961
	Disagree	2(0.63%)	5(1.57%)			
	Neutral	6(1.88%)	12(3.76%)			
	Agree	41(12.85%)	89(27.90%)			
	Strongly agree	47(14.73%)	104(32.60%)			
Health risk	Strongly disagree	1(0.31%)	11(3.45%)	4.19	0.055	0.979
	Disagree	2(0.63%)	9(2.82%)			
	Neutral	7(2.19%)	16(5.02%)			
	Agree	49(15.36%)	83(26.02%)			
	Strongly agree	38(11.91%)	103(32.29%)			
Premature birth	Strongly disagree	2(0.63%)	11(3.45%)	4.21	0.054	0.964
	Disagree	3(0.94%)	4(1.25%)			
	Neutral	3(0.94%)	19(5.96%)			
	Agree	47(14.73%)	87(27.27%)			
	Strongly agree	42(13.17%)	101(31.66%)			
Still birth	Strongly disagree	3(0.94%)	17(5.33%)	3.95	0.063	1.119
	Disagree	5(1.57%)	12(3.76%)			
	Neutral	14(4.39%)	22(6.90%)			
	Agree	40(12.54%)	91(28.53%)			
	Strongly agree	35(10.97%)	80(25.08%)			
Death of child due to improper care – Poverty	Strongly disagree	2(0.63%)	10(3.13%)	3.95	0.063	1.119
	Disagree	2(0.63%)	7(2.19%)			
	Neutral	9(2.82%)	16(5.02%)			
	Agree	45(14.11%)	94(29.47%)			
	Strongly agree	39(12.23%)	95(29.78%)			
Weighted average				4.13		

Table Legend: 1-totally disagree, 2-disagree, 3-neutral, 4-agree; 5-totally agree Calibration by weighted average.

need some things which they can use on their life and they cannot get them easily. Things like pads, clothes and other things such as perfumes and whatever that they may use in their life and they cannot get them easily if they cannot get them from their parents, they get them elsewhere.” (R2)

The results presented in Table 4.4 illustrate the participants' agreement regarding the consequences of teenage pregnancy. The findings indicate that the participants perceived maternal mortality (mean=4.16, SD=0.881), psychological effects such as depression (mean=3.86, SD=1.092), being chased from home after pregnancy (mean=4.21, SD=1.035), school dropout (mean=4.25, SD=0.961), health risks (mean=4.19, SD=0.979), premature birth by the teenager (mean=4.21, SD=0.964), stillbirth by the teenager (mean=3.95, SD=1.119), and death of the new-born due to improper care or poverty (mean=4.17, SD=0.961) as significant consequences of teenage pregnancy. The calculated weighted average of 4.13 indicates that caregivers in the study possessed a good understanding of the consequences associated with teenage pregnancy.

Perception of the caregivers towards teenage pregnancy in the community: The study sought to determine the perception of the participants towards teenage pregnancy. The participants were asked to give their opinions on the statements relating to perception towards teenage pregnancy and mitigation strategies. The responses were measured using five point Likert scale which involved levels of agreement coded as 1 for totally disagree, 2 for disagree, 3 for neutral, 4 for agree and 5 totally agree.

Table 4.5 below provides valuable insights into caregivers' perspectives on teenage pregnancy. The findings reveal a consistent pattern of disapproval and negative sentiments among caregivers regarding girls becoming pregnant in the community (mean=4.10, SD=0.962), as well as the community's prevailing negative attitude towards teenage pregnancy (mean=4.06, SD=1.007). Caregivers also recognized teenage pregnancy as a significant issue within the community (mean=4.17, SD=0.805) and agree that it has adverse effects on teenagers' education (mean=4.30, SD=0.892). In summary, with an overall cumulative mean of 4.16, it becomes evident that caregivers predominantly agreed that they and the entire community feel bad towards teenage pregnancy. Teenage pregnancy is a problem and affect teenager's school work. By feeling bad about teenage pregnancy, the statement, however, indicate that caregivers have negative perception towards teenage pregnancy.

On exploring further on how caregivers feel about girls who are falling pregnant in the community, R5 stated that;

“It is not a good picture and the parents whose children are involved do not feel good since when the girl becomes pregnant it becomes another burden to them.” (R5).

“We feel bad because their future may take a different turn because most the time these girls are still in school and depending on the direction or the way their parents bring them up they may end up not getting an education.”(R6).

Table 4. 5. Caregiver's perception towards Teenage Pregnancy

Perception		Prevalence of teenage pregnancy		Mean		Std. Deviation
		Yes (n)	No (n)	Statistic	Std. Error	
Caregiver feeling bad about teenage pregnancy	Strongly disagree	4(1.25%)	12(3.76%)	4.1	0.054	0.962
	Disagree	3(0.94%)	5(1.57%)			
	Neutral	2(0.63%)	11(3.45%)			
	Agree	57(17.87%)	117(36.68%)			
	Strongly disagree	31(9.72%)	77(24.14%)			
Community having bad feeling about teenage pregnancy	Strongly disagree	3(0.94%)	13(4.08%)	4.06	0.056	1.007
	Disagree	4(1.25%)	4(1.25%)			
	Neutral	10(3.13%)	22(6.70%)			
	Agree	43(13.48%)	104(32.60%)			
	Strongly agree	37(11.60%)	79(24.76%)			
Thought on teenage pregnancy affecting teenager's school work in the community	Strongly disagree	3(0.94%)	5(1.57%)	4.17	0.045	0.805
	Disagree	2(0.63%)	11(3.45%)			
	Neutral	0(0)	6(1.88%)			
	Agree	48(15.05%)	92(28.84%)			
	Strongly agree	44(13.79%)	108(13.79%)			
Teenage pregnancy being a problem in the community.	Strong disagree	2(0.63%)	1(0.31%)	4.3	0.05	0.892
	Disagree	4(1.25%)	10(3.13%)			
	Neutral	8(2.51%)	13(4.08%)			
	Agree	47(14.73%)	123(38.56%)			
	Totally agree	36(11.29%)	75(23.51%)			
Weighted average				4.16		

Table Legend: 1-totally disagree, 2-disagree, 3-neutral, 4-agree; 5-totally agree Calibration by weighted average.

Table 4.6. Descriptive statistics on perception of caregivers on mitigation strategies towards teenage pregnancy

		Prevalence of teenage pregnancy		Mean		Std. Deviation
		Yes(n)	No(n)	Statistic	Std. Error	
Provision of sex education and awareness creation to teenagers in the community	Strongly disagree	3(0.94%)	11(3.45%)	4.1	0.054	0.962
	Disagree	4(1.25%)	4(1.25%)			
	Neutral	4(1.25%)	21(6.58%)			
	Agree	51(15.99%)	107(33.54%)			
	Strongly agree	35(10.97%)	79(24.76%)			
Parental teen communication about pregnancy and sexuality can mitigate teenage pregnancy	Strongly disagree	3(0.94%)	9(2.82%)	4.21	0.05	0.898
	Disagree	1(0.31%)	5(1.57%)			
	Neutral	2(0.63%)	10(3.13%)			
	Agree	51(15.99%)	112(35.11%)			
	Strongly agree	40(12.54%)	86(26.96%)			
Allowing teenagers to use contraceptives to mitigate teenage pregnancy	Strongly disagree	3(0.94%)	11(3.45%)	4.16	0.052	0.924
	Disagree	3(0.94%)	2(0.63%)			
	Neutral	4(1.25%)	11(3.45%)			
	Agree	55(17.24%)	111(34.80%)			
	Strongly agree	32(10.03%)	87(27.27%)			
Allowing access information on contraceptives by teenagers to mitigate teenage pregnancy	Strongly disagree	5(1.57%)	10(3.13%)	4.09	0.051	0.912
	Disagree	3(0.94%)	2(0.63%)			
	Neutral	3(0.94%)	11(3.45%)			
	Agree	55(17.24%)	132(41.38%)			
	Strongly agree	31(9.72%)	67(21.00%)			
Establishing connections for teens who are pregnant to be effectively referred to pertinent services	Strongly disagree	4(1.25%)	11(3.45%)	4.14	0.052	0.934
	Disagree	4(1.25%)	1(0.31%)			
	Neutral	3(0.94%)	11(3.45%)			
	Agree	55(17.24%)	115(36.05%)			
	Strongly agree	31(9.72%)	84(26.33%)			
Establishing more polices and regulation to control teenage pregnancy	Strongly disagree	3(0.94%)	12(3.76%)	4.27	0.053	0.946
	Disagree	3(0.94%)	1(0.31%)			
	Neutral	3(0.94%)	6(1.88%)			
	Agree	47(14.73%)	96(30.09%)			
	Strongly agree	41(12.85%)	107(33.54%)			
Stakeholder capacity building	Strongly disagree	5(1.57%)	11(3.45%)	4.08	0.054	0.957
	Disagree	1(0.31%)	5(1.57%)			
	Neutral	6(1.88%)	14(4.39%)			
	Agree	53(16.61%)	119(37.30%)			
	Strongly agree	32(10.03%)	73(22.88%)			
Community development and economic empowerment	Strongly disagree	5(1.57%)	10(3.13%)	4.12	0.054	0.968
	Disagree	2(0.63%)	6(1.88%)			
	Neutral	3(0.94%)	15(4.70%)			
	Agree	46(14.42%)	114(35.74%)			
	Strongly agree	41(12.85%)	77(24.14%)			
Re-entry policy for teen mothers	Strongly disagree	5(1.57%)	11(3.45%)	4.09	0.054	0.96
	Disagree	1(0.31%)	5(1.57%)			
	Neutral	6(1.88%)	13(4.08%)			
	Agree	54(16.93%)	115(36.05%)			
	Strongly agree	31(9.72%)	78(24.45%)			
Weighted average				4.14		

Table Legend: 1-totally disagree, 2-disagree, 3-neutral, 4-agree; 5-totally agree Calibration by weighted average.

Caregiver perception on mitigation strategies towards teenage pregnancy: Caregivers asked about their perception on mitigation strategies. Table 4.6 presents caregiver's perceptions regarding various strategies to mitigate teenage pregnancy. The findings highlight caregivers' belief in the effectiveness of several measures as preventive methods. These measures included providing sex education and awareness to teenagers in the community (mean=4.10, standard deviation=0.962), encouraging parental communication on pregnancy and sexuality (mean=4.21, standard deviation=0.898), enabling teenagers to access contraceptives (mean=4.16, standard deviation=0.924), facilitating access to contraceptive information for teenagers (mean=4.09, standard deviation=0.912), establishing referral connections for pregnant teens to essential services (mean=4.14, standard deviation=0.934), implementing additional policies and regulations (mean=4.27, standard deviation=0.946), enhancing stakeholder capacity (mean=4.08, standard deviation=0.957), promoting community development and economic empowerment (mean=4.12, standard deviation=0.968), and implementing re-entry policies for teen mothers (mean=4.09, standard deviation=0.960).

participants were asked question to regarding their level of agreement depending on the mitigation strategy. The findings presented in Table 4.7 shed light on the mitigation strategies employed by the study participants to address teenage pregnancy. The results reveal varying levels of agreement among the participants regarding these strategies. Some participants expressed agreement with certain approaches, such as providing sex education and awareness (mean=4.13, standard deviation=0.973) and facilitating communication with teenagers (mean=4.21, standard deviation=0.988) regarding teenage pregnancy. However, there were participants who disagreed with several mitigation strategies. For instance, there was disagreement concerning allowing teenagers to use contraceptives (mean=1.50, standard deviation=0.501), granting teenagers access to information about contraceptives (mean=1.29, standard deviation=0.452), participating in capacity building initiatives to combat teenage pregnancy (mean=1.15, standard deviation=0.355), engaging in community development and economic empowerment efforts (mean=2.39, standard deviation=1.471), and supporting re-entry policies for teen mothers to continue their education (mean=1.99, standard deviation=1.528).

Table 4.7. Descriptive statistics on mitigation strategies towards teenage pregnancy

Mitigation strategies	Prevalence of teenage pregnancy		Mean		Std. Deviation	
	Yes(n)	No(n)	Statistic	Std. Error		
Provision of sex education and awareness to teenagers in the community	Strongly disagree	5(1.57%)	13(4.08%)	4.13	0.054	0.973
	Disagree	1(0.31%)	1(0.31%)			
	Neutral	6(1.88%)	12(3.76%)			
	Agree	44(13.79%)	118(36.99%)			
	Strongly agree	41(12.85%)	78(24.45%)			
Communication with my teenagers about pregnancy	Strongly disagree	5(1.57%)	13(4.08%)	4.21	0.055	0.988
	Disagree	1(0.31%)	3(0.94%)			
	Neutral	2(0.63%)	7(2.19%)			
	Agree	44(13.79%)	107(33.54%)			
	Strongly agree	45(14.11%)	92(28.84%)			
Allowing teenagers to use contraceptives	Strongly disagree	39(12.23%)	119(37.39%)	1.5	0.028	0.501
	Disagree	58(18.18%)	103(32.29%)			
Allowing teenagers to access information on contraceptives	Strongly disagree	75(23.51%)	153(47.96%)	1.29	0.025	0.452
	Disagree	22(6.90%)	69(21.63%)			
Participation in capacity building to end teenage pregnancy	Strongly disagree	91(28.53%)	181(56.73%)	1.15	0.02	0.355
	Disagree	6(1.88%)	41(12.85%)			
Participation in community development and economic empowerment	Strongly disagree	50(15.67%)	67(21.00%)	2.39	0.082	1.471
	Disagree	9(2.82%)	82(25.71%)			
	Neutral	10(3.13%)	24(7.52%)			
	Agree	14(4.39%)	13(4.08%)			
	Strongly agree	14(4.39%)	32(10.03%)			
Supporting re-entry policy to school for teen mothers	Strongly disagree	55(17.24%)	140(43.89%)	1.99	0.086	1.528
	Disagree	5(1.57%)	48(15.05%)			
	Neutral	0(0)	2(0.63%)			
	Agree	9(2.82%)	9(2.82%)			
	Strongly agree	27(8.46%)	22(6.90%)			
Weighted average			2.38			

Table Legend: 1-totally disagree, 2-disagree, 3-neutral, 4-agree; 5-totally agree Calibration by weighted average.

To evaluate the overall perception of these mitigation strategies, the weighted average score was calculated. Strategies with scores above the mean of 3.50 were considered to have a positive perception, while those below the mean were considered to have a negative perception. Since the weighted average was 4.14, it indicates that the participants held a positive perception towards the mitigation strategies, as indicated in Appendix IV. Notably, when the interviewees were asked what they think can or should be done to reduce the number of teenagers who get pregnant in the community, R6 stated that;

“..... programmes can be initiated which will teach these girls how to take good care of themselves at teenage age and support some of these girls with social amenities that they lack and even organise lunch programmes at school so that some people do not take advantage of their hunger.....”. (R6).

Mitigation Strategies towards Teenage Pregnancy: The study further sought to find the mitigation strategies caregivers use in the prevention of teenage pregnancy in the community. The study

To assess the overall perception of these mitigation strategies, a weighted average score was calculated. Strategies with scores above the mean of 3.50 were considered indicative of agreement, while those below the mean were seen as indicating disagreement. Given the weighted average of 2.38, it suggests that the participants expressed disagreement regarding the mitigation strategies for teenage pregnancy, as indicated in Appendix VI. In addition, the results reveal that the mitigation strategies put in place by caregivers were associated with prevalence of teenage pregnancy (P-value < 0.05).

Additional probing of the participants revealed the theme of caregivers as key players in reducing teenage pregnancy as indicated below;

“Caregivers are supposed to give direction and understand to the teenagers with the current century, basically the problem in the society is that we want to bring up our children the way we were brought up without understanding the changes, so we have to understand the changes according to the current situation.”(R5).

"They should be educating these teenagers; they should be sitting down and interacting with them on the dangers of getting pregnant early yeah. You know getting pregnant also means you are involving in sex and that is not good so they should also teach them that early sex is not good yeah because you can expose yourself to HIV and other viral diseases which may result to HIV once you get infected it means there is no cure so you will be living yes, but you will be living on drugs and sometimes even your body the antidote is very weak and you will be in a position that you can get any.... your body will not be in a position to resist some diseases."(R1).

The relationship between socio-demographic attributes of primary caregivers and the prevalence of teenage pregnancy in Siaya County.

The sought to determine the relationship between socio-demographic variables that included gender, age, marital status, occupational status, education level and religion; and the prevalence of teenage pregnancy. This was done by establishing the existence of multicollinearity between socio-demographic variables to determine the relationship.

Multicollinearity: To identify the presence of multicollinearity, the research used the Variance Inflation Factor.

study participants and prevalence of teenage pregnancy. The p-values were calculated to assess the strength and significance of the relationships. The results of the chi-square analysis examining the relationship between socio-demographic variables of caregivers and teenage pregnancy prevalence. The chi-square analysis in table 4.9 above revealed that gender, age, marital status, education, and occupation of caregivers were not significantly associated with the prevalence of teenage pregnancy (P-value>0.05). However, there was a significant association between the religion of caregivers and the prevalence teenage pregnancy prevalence (($X^2=5.976$; $df=2$; P-value=0.050).

DISCUSSION

Caregiver's knowledge on teenage pregnancy: The study findings revealed that majority of the caregivers know what teenage pregnancy is and have had an experience with pregnant teenager. The findings further showed that most respondents had knowledge of the causes and consequences of teenage pregnancy as they expressed their level of agreement with the causes of teenage pregnancy as was asked. The findings from key informant interviews revealed that caregivers had good understanding of teenage pregnancy, causes and consequences. The findings of the study are in agreement with the findings that were obtained by Kirubamani, (2019) that noted a majority of the study

Table 4.8. The Variance Inflation Output

Model		Collinearity Statistics	
		Tolerance	VIF
1	Caregiver gender	0.981	1.020
	Caregiver age	0.916	1.092
	Caregiver marital status	0.960	1.041
	Caregiver level of education	0.948	1.055
	Caregiver occupation status	0.941	1.063
	Caregiver religion	0.968	1.033

a. Dependent Variable: Prevalence of teenage pregnancy

Table 4.9. Pearson chi-square analysis of the relationship between socio-demographic variables of caregivers and teenage pregnancy prevalence

		Prevalence of teenage pregnancy		Chi-square statistics
		Yes(n)	No(n)	
Caregiver gender	Male	37	69	$X^2=1.578$; $df=1$; $P-value=0.218$
	Female	60	153	
Caregiver age	30-39 years	12	33	$X^2=1.575$; $df=3$; $P-value=0.665$
	40-49 years	31	65	
	50-59 years	34	88	
	60 years and above	20	36	
Caregiver marital status	Single parent	7	18	$X^2=1.911$; $df=4$; $P-value=0.752$
	Married	66	146	
	Separated	10	21	
	Widow	11	22	
	Widower	3	15	
Caregiver level of education	Primary	27	59	$X^2=0.732$; $df=3$; $P-value=0.866$
	Secondary	37	77	
	Tertiary/College	23	62	
	University	10	24	
Caregiver occupation status	Self-employed	27	81	$X^2=4.356$; $df=2$; $P-value=0.113$
	Employed	41	68	
	Not employed	29	73	
Caregiver religion	Christian	78	195	$X^2=5.976$; $df=2$; $P-value=0.050$
	Islam	6	15	
	Traditional	13	12	

Table Legend: Source field data, 2021.

According to the findings in Table 4.8, the VIF for the independent variables is between 1 and 5 while tolerance is below 1. A lower tolerance indicates a lower multicollinearity between variables. Additionally, a VIF ranging from 1 to 5 shows no multicollinearity, whereas a VIF greater than 5 shows there is the presence of multicollinearity. According to the results, multicollinearity does not exist between the variables.

Pearson chi-square analysis: The study employed chi-square to establish the relationship between socio-demographic variables of

Participants had adequate knowledge of the consequences of teenage pregnancy. Caregivers' towards teenage pregnancy might have been attributed by the high prevalence of teenage in the community and consistent health education by health workers in the community. Moreover, the study revealed that the problem of peer pressure, lack stable family structure, early marriages and sexual violence as causes of teenage pregnancy were perceived as commonest challenges. Pregnant teen girls also perceived by caregivers to face other health risks and complications including maternal death.

This is largely plausible given their premature body physiology, leading to premature birth, stillbirth, death of the new-born and school dropout thus deprive them biological, socio-economical and physical development (Kukundakwe, 2021). The good knowledge of caregivers on teenage pregnancy demonstrate the good job the government has on awareness creation through media on how to end teenage pregnancy and implementing some of the mitigation strategies.

Caregivers perception towards teenage pregnancy: The research went further to find out the perception of caregivers towards teenage pregnancy in the community. The findings showed that caregivers had poor perception towards teenage pregnancy. The results concur with those of Mgbokwere *et al.*, (2015) who found that several mothers rated the scenario as frightening and alarming, leading to dissatisfaction. Another research that supports these conclusions is Ashraf *et al.*, (2020) which showed that some caregivers would grieve and worry for the future of such girls while others would feel guilty for failing in their duty and not doing more to shield their kid from this situation. This study revealed that caregivers felt bad about girls getting pregnant and thought that the pregnancy affects teenager's education and future in the community. Additionally, the study established the perception of the general community towards teenage pregnancy indicating that they have a negative perception towards teenage pregnancy. On exploring further on how caregivers feel about girls who are falling pregnant in the community, some of the participants mentioned that it is not a good picture to the parents whose children are involved as they do not feel good since when the girl becomes pregnant it is like another burden to them. In addition, it was noted that the community feels bad as the future of the girls might take a different turn because in most cases these girls are still in school and depending on the direction or the way their parents bring them up they may end up not getting education. Thus, indicating that teenage pregnancy within the study area is viewed negatively based on the negative effects that it has on both the parent and the teenage daughter. This finding is consistent with that of Ashraf *et al.*, (2020) and Mgbokwere *et al.*, (2015) that some caregivers felt ashamed of their teen's pregnancy and were concerned about the reaction of family, friends, and neighbours. This finding reveal the importance of significant other of caregivers and teenagers towards the impact of teenage pregnancy.

The study, further, revealed the perception of caregivers towards perceived mitigation strategies. The findings showed that the participants of the study expressed their agreement that the provision of sex education and awareness, parental teen communication on pregnancy and sexuality, use contraceptives, access information on contraceptives, establishing referral connections for pregnant teens for pertinent services, establishing more policies and regulation, stakeholder capacity building, community development and economic empowerment and re-entry policy for teen mothers as mitigation strategies towards teenage pregnancy. These findings revealed that caregivers had good perception towards the mitigation strategies and agreed with Nabugoomu *et al.*, (2020) that caregivers, community and multi-stakeholders positive perception in the involvement, identification and establishment of strategies is key in the prevention of teenage pregnancy. This is because majority of the caregivers watch various campaigns and discussion on media which helped them build positive perception with the mitigation strategies towards teenage pregnancy.

Mitigation strategies toward teenage pregnancy: The study further sought to establish the mitigation strategies used towards teenage pregnancy. The finding revealed that some participants expressed their agreement on the engagement on providing sex education and awareness and, communication to teenagers about teenage pregnancy. These results are at odds with studies which hypothesized that teenagers are less likely to engage in delinquent sexual behaviour and more likely to postpone their first sexual encounter, the more caregivers talk about stuff like sex, unwanted pregnancies, and birth control with them (Hu & Wang, 2022). Furthermore, numerous sexual discourse is linked to teenagers being more open and closer to

their caregivers (Coakley *et al.*, 2017). The Key informant interview noted that parents should be educating teenage girls on the dangers of getting pregnant early. This finding is in agreement with that "sexual education by caregivers, as one of the main components of sexual socialization, is one of the best strategies for children's sexual health promotion." (Aluh *et al.*, (2018). Consequently, caregivers expressed disagreement with some of the mitigation strategies including allowing teenagers to use contraceptives, allowing teenagers to access information on contraceptives, participation in capacity building to end teenage pregnancy, participation in community development and economic empowerment and supporting re-entry policy to school for teen mothers towards teenage pregnancy. The findings agreed with the study conducted which found that strategies for mitigation of teenage pregnancy is closely linked to their perceptions and knowledge of caregivers (Baker, 2022), (Emelumadu *et al.*, 2014). Caregivers who possess accurate and comprehensive knowledge about the implications of teenage pregnancy are better equipped to engage in open and informed conversations with teenagers. This can lead to adolescents becoming more aware of the potential consequences of their actions and choices since teenagers are likely to value their family's perception on sexual behaviour and childbearing.

The relationship between socio-demographic attributes of caregivers and prevalence towards teenage pregnancy: The findings finally sought to determine the relationship between socio demographic variables attributes and teenage pregnancy prevalence. The results suggest that the relationship is not strong enough to show statistically significance between gender and prevalence of teenage pregnancy. The findings are consistent with Uwizeye *et al.*, (2020), that found that female caregivers and their guidance are important in preventing teenage pregnancy. This finding demonstrate that gender is not a determinant on teenage pregnancy. The results also showed that there was no significant relationship between age and prevalence of teenage pregnancy. In this study, there were more caregivers between the age of 50 years to 59 years as compared to those in their 60 years or other age groups. With these findings, we argue that younger caregivers may find it difficult to advise their teenagers about sexuality and teenage pregnancy. The findings also revealed that older caregivers may command more respect and are mature enough than younger caregivers. Thus, older caregivers know how to approach sexuality and teenage pregnancy context issues and create ambient environment to talk about them. We further argue that teenage pregnancy can happen regardless of caregivers age, thus, the findings are similar to that of Jonas *et al.*, (2016; Kassa *et al.*, (2018); Uwizeye *et al.*, (2020); Worku *et al.*, (2021), which found that caregiver age can influence teenage pregnancy to some extent but it cannot prevent teenage pregnancy from happening. Further, results showed that there was no significant relationship between marital status and prevalence of teenage pregnancy. The findings revealed that marital status of caregivers does not influence teenage pregnancy. This finding contradicts a study that was carried in Uganda which found that there was a signification association between teenage pregnancy and marital status of the caregiver (Worku *et al.*, 2021), Uwizeye *et al.*, 2020). In the same way, we argue that when caregivers separate, teenagers are more likely to engage into risky sexual behaviour at an early age than when they are married hence can lead to teenage pregnancy.

The results further indicated that there was no significant relationship between occupational status and prevalence of teenage pregnancy. In this study, most caregivers were employed, slightly higher than those not employed or self-employed. Findings from this present study indicated that occupational status of caregivers does not contribute to prevalence of teenage pregnancy. The findings contradicted the findings of a study by Nwoguzze, (2020) and Malesi *et al.*, (2021) that established that teenager whose caregivers are employed are less likely to involve into early pregnancy as compared to those not employed or self-employed. However, the findings are consistent with those findings of Uwizeye *et al.*, (2020), that found that teenage pregnancy can happen irrespective of the caregiver occupational status. Likewise, we argue that caregiver may be employed but still

cannot provide the financial needs of the teenager hence enabling teenage pregnancy. Moreover, the findings revealed that there was no significant relationship between educational level and prevalence of teenage pregnancy. The findings indicated that most caregivers attained secondary education level while few attained university education level. The findings showed that caregivers' educational achievement has less impact to play on the prevalence of teenage pregnancy. Although, caregivers with less education advice less their teens on the risk factors for teenage pregnancy as compared to those with higher educational level since they know and understand the mitigation strategies of teenage pregnancy. The findings of this study is consistent with that of Nwogueze, (2020) that found that educational level achievement of caregivers are not correlated with teenage pregnancy. Lastly, the findings revealed that there was a significant relationship between religion and prevalence of teenage pregnancy. The findings indicated that majority of caregivers were Christians and few were from either Muslims or traditional religion. The findings showed that for caregivers who value religion, their teenagers were victims of teenage pregnancy. Since it is believed that religion provide a moral framework for socialization (Nwogueze, 2020), the prevalence of teenage pregnancy still was correlated with religion. This findings were in agreement with the study conducted on determinants of teenage pregnancy that found that religion was associated with teenage pregnancy (Yakubu & Salisu, 2018). In our argument, this may have been attributed due to different practices along religion lines and the choice of mitigation measure.

CONCLUSION

The study found majority of the study participants knew and had experience with a pregnant teenager within their household. They were able to identify its risk factors and consequences of teenage pregnancy. However, the study participants held negative perceptions towards teenage pregnancy viewing it as undesirable and expressing concern for its impact on teenagers' education and future prospects, while having positive perception on mitigation measures and relationship pre religion beliefs influence the occurrence of teenage pregnancy in Siaya County.

RECOMMENDATIONS

The following recommendations are essential based on the study results and the conclusion above.

- i. The study recommend adoption of a more comprehensive strategy to provide teenagers and their caregivers with information about sexuality and access to sexual and reproductive health services to improve the caregiver's knowledge and their perception on teenage pregnancy.
- ii. To reduce the prevalence of teenage pregnancy, the study recommend that the Ministry of Health and Ministry of Education to initiate programs that educate caregivers and teenagers about reproductive health inside and outside schools in mitigation of teenage pregnancy in Siaya County.
- iii. The study further recommend, that caregivers should be assisted to develop new skills and practices crucial in communication strategies of sexuality and awareness creation to improve their knowledge and perceptions towards teenage pregnancy.
- iv. The church and its should be involved as key stakeholder in mitigation of teenage pregnancy.

Further Research

- i. More studies should be conducted on the prevalence of mental health disorders among caregivers of pregnant teenagers in the community.
- ii. Additional research should be carried out in Kenya to determine the prevalence of teenage pregnancy along the lines of religion.

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