Journal of World Health Research
Vol. 2 No. 6 (2025): June 2025
https://doi.org/10.71020/jwhr.v2i6.34
Original Article

FACTORS ASSOCIATED WITH SHORT CHILD SPACING AMONG PREGNANT MOTHERS ATTENDING ANTENATAL CARE AT SOROTI REGIONAL REFERRAL HOSPITAL. A CROSS-SECTIONAL STUDY.

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Abstract

Background

Scientifically, short child spacing carries a higher risk of preterm birth, perinatal, neonatal, and infant mortality and morbidity. The study aims to determine the factors associated with short child spacing among pregnant mothers attending antenatal care at Soroti Regional Referral Hospital.

Methodology

A descriptive cross-sectional study, employing quantitative methods of data collection. The data collected was analyzed using Statistical Package for Social Sciences (SPSS) and Microsoft Excel version 2020 to develop tables, pie charts, and graphs with frequencies and percentages.

Results

Most respondents 54.05% were aged (21-30) years, most (45.95%) of the mothers were married, most (40.54%) of the mothers breastfed their previous for a period of (7-12) months, (59.46%) of the respondents had the previous child alive, (40.54%) had lost their previous child; (51.35%) of the mothers had a preferred range of child spacing of less than 24 months; Most (59.46%) had good husband's support towards child spacing, most (54.05%) of their husbands were employed, 64.86% of the mothers did not have health insurance coverage for their families, most (51.35%) of the mothers did not use contraceptives.

Conclusion

Individual factors associated with short child spacing, age at first marriage, employment status of husbands, and use of contraceptive methods of family planning.

Recommendation

Midwives, nurses, and other stakeholders should strengthen the family planning services in terms of quality and utilization.

Keywords: *short child spacing, Pregnant Mothers, Attending Antenatal Care*
Submitted: *2025-02-13* ***Accepted:*** *2025-03-31* ***Published:*** *2025-06-17*

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Background

Short child spacing is having a new pregnancy occurring less than 18 months after giving birth (Lauren Thaxton, 2023). Scientifically, short child spacing carries a higher risk of preterm birth, perinatal, neonatal, and infant mortality and morbidity (low birth weight and childhood anemia), which increases susceptibility to infections and poor child development. Several factors associated with child spacing have been studied, and some of these may be direct factors such as being sexually active, use of contraceptives, abortion, and sterility, while indirect factors may include sociocultural factors (Aleni et al., 2020). A study on Determinants of Short Inter-birth Intervals among Reproductive Age Mothers in Arba Minch District, Ethiopia reported that the duration of breastfeeding for less than 24 months was one of the independent predictors of short birth intervals (Hailu & Gulte., 2016).

In a community-based cross-sectional study that was carried out in 12 East African countries, out of 105,782 reproductive-age women who had two or more births, the prevalence of short birth intervals was 16.99%. Women who belonged to the poorest households made their own decisions with their husbands/partners or by their husbands or parents alone, lived in households headed by men, and had unmet family planning needs, which attributed to short birth intervals among mothers (Tesema et al., 2023). In a two-level multilevel logistic regression analysis used to assess the Individual and community level determinants of

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short birth intervals in Ethiopia, a total of 8,448 women were included. Having an unemployed husband was associated with higher odds of experiencing short birth intervals (Shifti et al., 2020). In Uganda, findings among women of reproductive age attending the young child clinic at Fort Portal Regional Referral Hospital showed that 94 (29%) had a short birth interval. Less or equal to 4 antenatal care visits was one of the factors that attributed to short child spacing (Elioba et al., 2023). The Uganda Demographic and Health Survey (UDHS) 2023 did not report short child spacing but a study done in Yumbe Hospital- Uganda revealed that short child spacing was at a prevalence of 52.4% which was likely to be associated with lower maternal age, unplanned pregnancies, lack of husbands involvement in the decision on when to have the next child, lack of contraceptives use before the next pregnancy. The study aims to determine the factors associated with short child spacing among pregnant mothers attending antenatal care at Soroti Regional Referral Hospital.

Methodology

The study setting.

The study was conducted in the ANC unit of SRRH. It is located 320 km northeast of Kampala, the capital city of Uganda in Eastern Uganda- Soroti city within the Teso subregion. The hospital is one of the 13 public Regional Referral Hospitals (RRHs) in the country and serves a catchment population of around 296,833 people (from the neighboring districts of Bukedea, Katakwi, Ngora, Kumi, Serere, and Kaberamaido. It has the following departments: ART department, maternity ward, and antenatal ward, among others, with a bed capacity of 251 beds. The major common tribes include Ateso, Kumam, and other minorities who engage in subsistence farming and small-scale businesses as a source of livelihood. The study area was selected because of its easy accessibility by the researcher, wider catchment area, and no recent similar study has been carried out in the area on increased incidence of short birth interval among pregnant mothers attending antenatal care in the study area.

Study design and rationale.

This study was a descriptive cross-sectional study, employing quantitative methods of data collection, where pregnant mothers attending antenatal clinics were recruited during the study period. This was because the study was a snapshot to be conducted within the shortest time given. This study was to be done in a stipulated period; thus, it was quick, and the design allowed its completion on time. Descriptive studies also allowed the researcher to collect a vast amount of information about factors associated with short child spacing among mothers attending antenatal care at Soroti Regional Referral.
Hospital.

Study Population.

The study population was all pregnant mothers coming for antenatal care at SRRH who had had at least two pregnancies. This is the population from which the sample size was selected.

Sample size determination

To achieve the representation of the target population, the sample size (respondents) was determined using the Solvins formula, with which the researcher's confidence level was 95%.
Solvins formula, n=N/ (1+Ne2)
Where n=sample size
N= target population e=error margin where e= 5%
Calculation n= 40/ (1+ (40*0.052)) n= 37
The sample size of 37 respondents at ANC was obtained.

Sampling procedure

A consecutive random sampling method was used to select the participants. This method was time-saving and had limited bias because every available participant stood a chance of being selected. The researcher interviewed all the eligible available respondents one after the other in the order of arrival to the facility until the sample size of 37 respondents was obtained.

The inclusion criteria

It included all the pregnant mothers of sound mind who had had at least two pregnancies and above and had come to SRRH – ANC unit at the time of data collection and they consented to participate in the study.

Exclusion criteria

All pregnant mothers of sound mind who had had at least two pregnancies and above and were present during the days of data collection but refused to consent to participate in the research voluntarily.
All pregnant mothers with at least two pregnancies but presented with a mental disorder.

Independent variables.

These are presumed causes or predictor variables, and they are not changed by other variables. In this study, they comprised of individual factors, for example lack of male involvement in child spacing activities, age at first marriage among others; socio-economic factors such as having no health insurance, unemployed husband among others; health facility factors such as use of short term contraceptives among others.

Dependent variable.
This is a presumed effect or outcome variable, and in this study, the short birth interval was the dependent variable.

Research instruments.
Data collection was done using a pre-tested questionnaire on the days of data collection. The questionnaire collected information about: A) socio-demographic factors associated with short child spacing among pregnant mothers attending antenatal care at Soroti Regional Referral Hospital including age, religion, distance from hospital, level of education of the pregnant woman and her partner, their occupation and marital status; B) individual factors associated with short child spacing among pregnant mothers attending antenatal care at Soroti Regional Referral Hospital including age at first marriage, aging pressure, duration of breast feeding, un planned pregnancies; C) socio-economic factors associated with short child spacing among pregnant mothers attending antenatal care at Soroti Regional Referral Hospital including un employed husband, having no health insurance, no media exposure, D) health facility factors associated with short child spacing among pregnant mothers attending antenatal care at Soroti Regional Referral Hospital such as use of short term contraceptives, attending less or equal to 4 postnatal visits among others.

Pretesting of the data collection tool was done by the researcher on a few mothers at ANC unit to ensure that the embarrassment, inappropriate questions are removed from the final questionnaire such that they are validated and reliable.

The pretesting of the data collection tool was done from another antenatal care unit of another health facility with similar characteristics to avoid biasness.

Data collection procedure.
An authorization letter from the SSCN administration was obtained and taken to the recommended administrator at SRRH, from where the permission was granted. The researcher informed the person in charge of the ANC unit at SRRH about the study, who introduced the researcher to the mothers. Informed consent was sought from the respondents after a thorough explanation of the purpose of the study. Then, the researcher started interviewing the respondents who were present and had consented.

Data management.
Before carrying out the main study, pre-testing was carried out on some few pregnant mothers from another health facility with similar characteristics. The finding from pre-test allowed for the modification of the questionnaire, expert review was done by the supervisor.

During the days of data collection, data was cleaned and checked for completeness before leaving the study area. Editing and coding were done.

The completed questionnaires were kept in opaque envelops and locked under safe custody whereby they were only accessed by the researcher alone meanwhile waiting for data analysis.

Data analysis and processing.
The data collected was analyzed using Statistical Package for Social Science (SPSS) and Microsoft Excel version 2020 to develop tables, pie charts, and graphs with frequencies and percentages from where the interpretations was drawn to give conclusions about the study.

Ethical consideration.
The researcher obtained ethical approval from the SSCN administration, who presented a written introductory letter about the research activity to the SRRH administration to allow the researcher to carry out the research. The study participants gave written informed consent, and they were handled with dignity.

Ethical approval
The study was conducted with written approval from the Soroti School of Comprehensive Nursing, and permission to collect data was sought from Soroti Regional Referral Hospital.

Informed consent
The purpose and objectives were well explained to the participants, and those who voluntarily agreed to participate in the study consented before participating.

Results
Socio-demographic determinants of short child spacing among pregnant mothers attending antenatal care at Soroti Regional Referral Hospital.

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Table 1 shows the socio-demographic data of the respondents (n=37).

Variables		Frequency (n37)	Percentage (%)
Age (years)	16-20 years	5	13.5
	21-30 years	20	54.05
	31-45 years	12	32.43
Marital status	Married	17	45.95
	Single	7	18.92
	Cohabiting	10	27.03
	Divorced	3	8.11
Occupation	Employed	22	59.46
	Unemployed	15	40.54
Tribe	Iteso	14	37.84
	Kumam	11	29.73
	Karamojong	7	18.92
	Musoga	5	13.51
Educational level	Primary	17	45.95
	Secondary	13	35.14
	Tertiary	7	18.92

Table 1, of the 37 mothers interviewed, 13.5% of the mothers were aged (16-20) years, 54.05% were aged (21-30) years, 32.43% were aged (31-45) years; almost a half (45.95%) of the mothers were married, 18.92% were single, 27.03% were cohabiting and 8.11% were divorced; more than half (59.46%) of the mothers were employed whereas 40.54% were unemployed; 37.84% were Itesot, 29.73% were Kumam, 18.92 % were Karamojong and 13.51% were Basoga; 45.95% of the mothers attained primary level of education, 35.14% attained secondary level of education and 18.92% attained tertiary level of education

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Individual factors associated with short child spacing among pregnant mothers attending antenatal care at Soroti Regional Referral Hospital.

Figure 1: showing the age of the mother at first marriage (n=37).

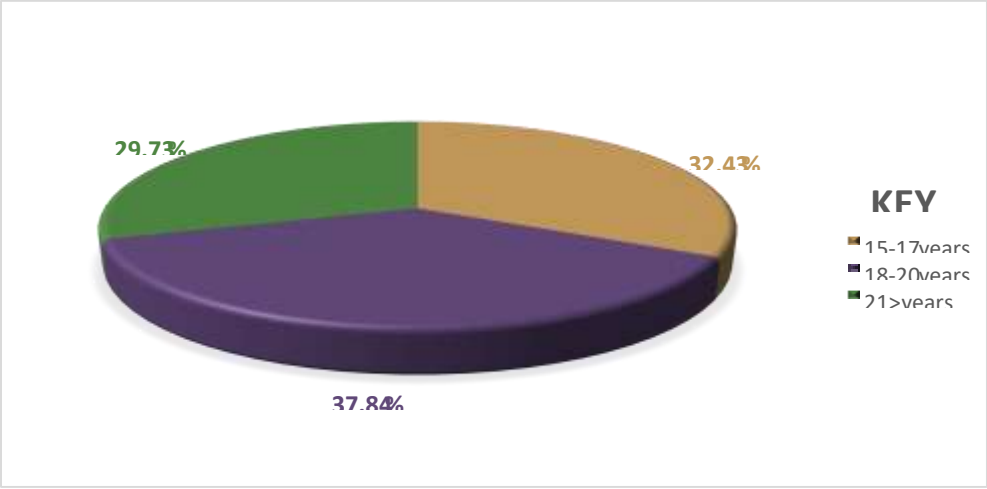

Figure 1, out of the 37 mothers interviewed, 32.43% were aged (15-17) years at their first marriage; 37.84% were aged (18-20) years at their first marriage, and 29.73% were aged 21 years and above at their first marriage.

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Figure 2: Showing the duration of breastfeeding of the previous child.

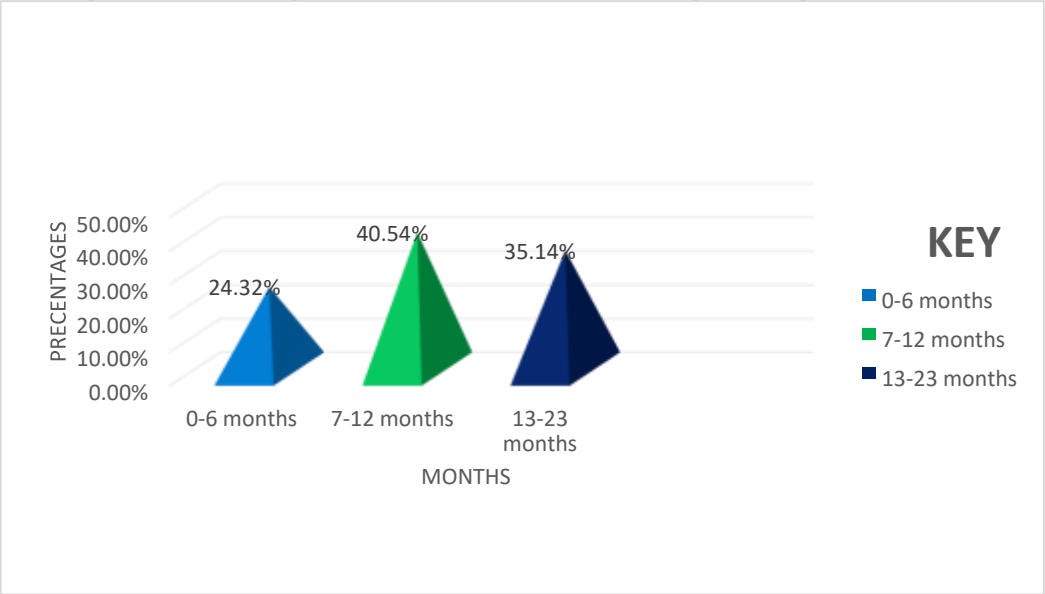

Figure 2, out of the 37 mothers interviewed, 24.32% of the mothers, breastfed their previous child for a period of (0-6) months, 40.54% of the mothers breastfed their previous for a period of (7-12) months and 35.14% of the mothers breastfed their previous child for a period of (13-23) months.

Table 2 shows the availability of the previous child (n37) and the preferred range of mothers for spacing their children (n=37).

Variables	**Response**		**Frequency (n37)**	**Percentage (%)**
Availability of the previous child	Yes		22	59.46
	No		15	40.54
Preferred range of child spacing	Less than months	24	19	51.35
	24-35 months		18	48.65

Table 2, 22/37 (59.46%) of the respondents had the previous child alive, 15/37 (40.54%) of the respondents had lost their previous child; 19/37 (51.35%) of the mothers had a preferred range of child spacing of less than 24 months; 18/37 (48.65%) of the mothers had a preferred range of child spacing of (24-35) months.

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Figure 3: showing mothers' response on husband's support towards child spacing (n=37).

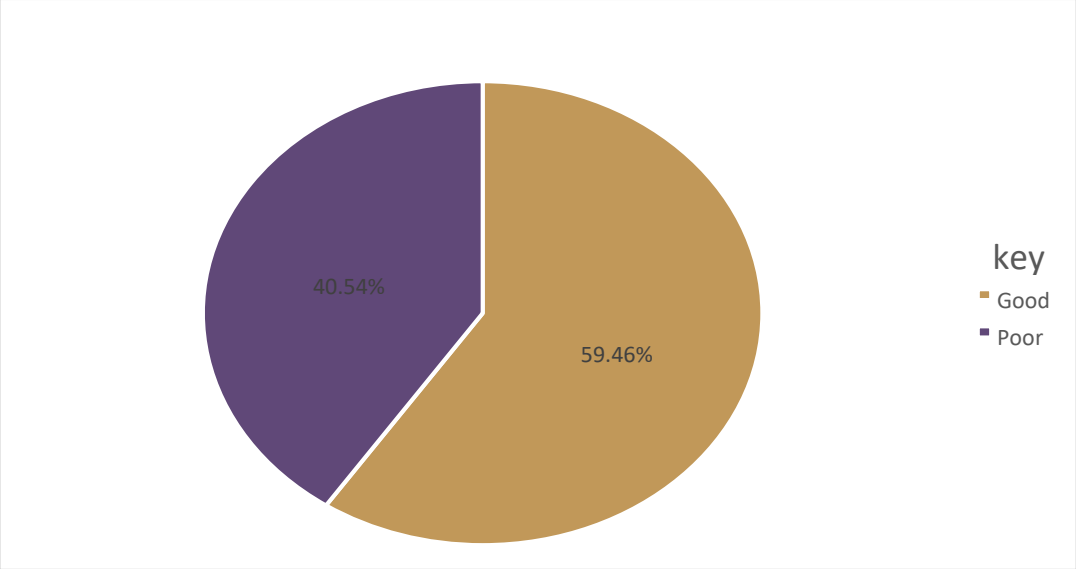
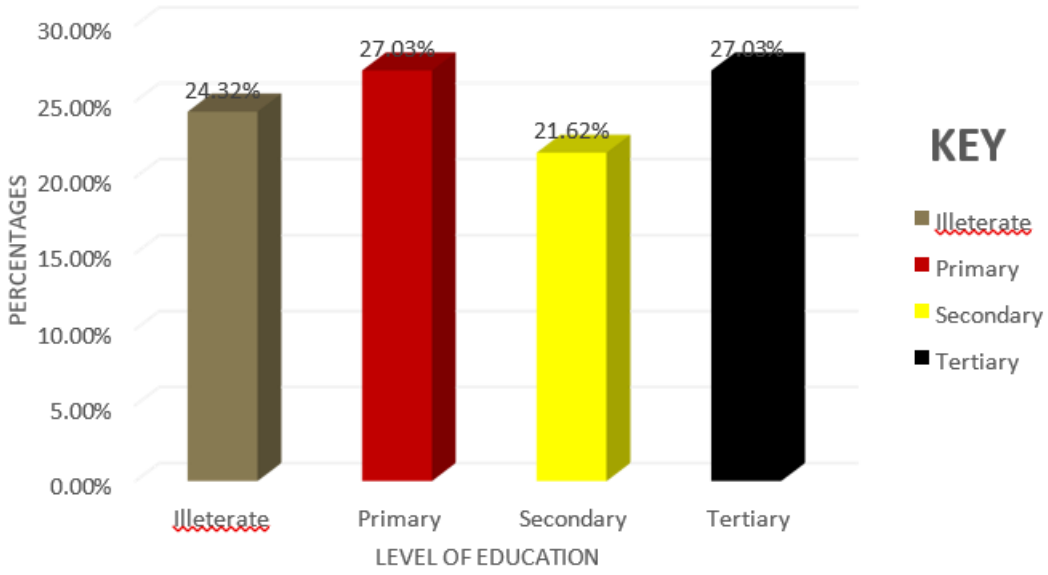


Figure 3, results showed that, more than a half (59.46%) of the respondents had good husband's support towards child spacing while 40.54% of the respondents had poor husband's support towards child spacing.

Socio-economic factors associated with short child spacing among mothers attending antenatal care at Soroti Regional Referral hospital.

Figure 4: showing the mothers' educational level (n37).



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Figure, the highest number 10/37 (27.03%) of respondents had attained primary or tertiary level of education, 9/37 (24.3%) of the respondents were illiterate, the least number 8/37 (21.62%) of the respondents had attained secondary level of education.

Table 3: showing the occupational status of husbands, challenges faced by mothers in accessing the hospital and health insurance coverage for their families.

Variables		Frequency	Percentage (%)
Occupation status	Employed	20	54.05
	Unemployed	17	45.95
Challenges faced by the mother in accessing the hospital	High transport costs	17	45.95
	Long distance	11	29.73
	Busy schedules	4	10.81
	None of the above	5	13.51
Health insurance coverage	I have	13	35.14
	I don't have	24	64.86

Table 3, results showed that of the 37 mothers interviewed, slightly more than a half (54.05%) of their husbands were employed, 45.95% of their husbands were unemployed; a significant number (45.95%) of the mothers faced high transport costs as a challenge in accessing the hospital, 29.73% of the mothers faced long distances from the health facility as challenge in accessing the hospital, 10.81% of the mothers had busy schedules as a challenge in accessing the hospital, 13.51% of the mothers did not have any challenge in accessing the hospital; 64.86% of the mothers did not have health insurance coverage for their families whereas only 35.14% of the mothers had health insurance coverage for their families.

Figure 5: showing the number of house occupants in each household (n37).

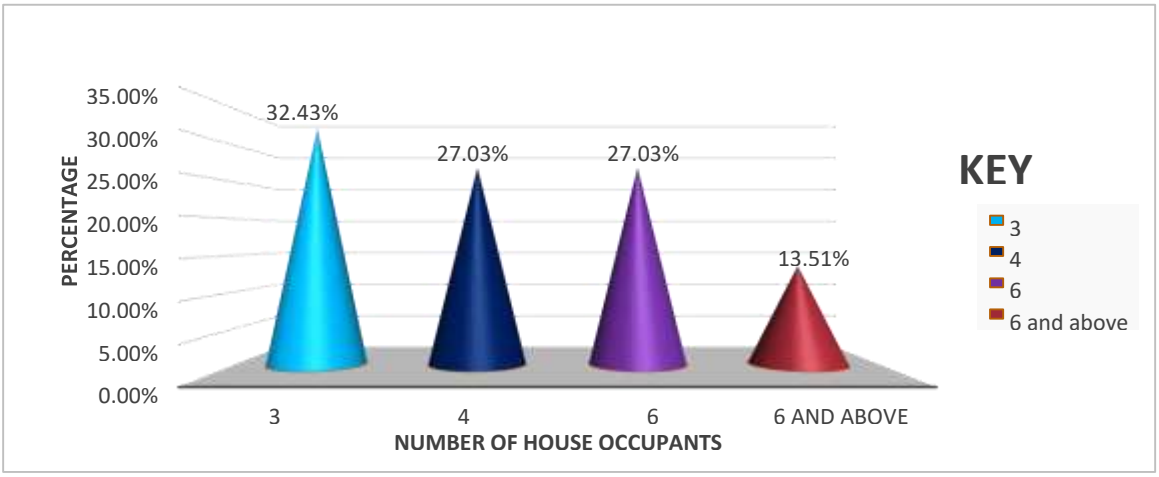

Figure 5, findings revealed that 32.43% of the respondents had 3 household occupants; 27.03% of the respondents had 4 household occupants; 27.03% of the respondents had 6 household occupants, whereas 13.51% of the respondents had more than 6 household occupants.

Health facility factors that influence short child spacing among mothers attending antenatal care at Soroti Regional Referral Hospital.

Table 4: Shows the mother's responses on family planning services received during antenatal care visits at Soroti Regional Referral Hospital and contraceptive use.

Variables		Frequency	Percentage (%)
Contraceptive use	I use	18	48.65
	I don't use	19	51.35
Postnatal services	Family planning counselling	5	13.51
	Wound care (episiotomy, cesarean)	10	27.03
	Breastfeeding support	7	18.92
	I didn't receive any	15	40.54
Kind of giving contraceptives used after birth	long term contraceptives	5	27.78
	Short term contraceptives	8	44.44
Number of antenatal visits	Less than 4 visits	27	72.97
	More than 4 visits	10	27.03

Table 5, slightly more than a half 19/37 (51.35%) of the mothers did not contraceptives while 18/37 (48.65%) used contraceptives. Among the mothers who used contraceptives after giving birth, a significant number, 8/18 (44.44%), reported using short-term contraceptives, while 5/18 (27.78%) used long-term contraceptives. On the number of antenatal visits, a majority of the mothers, 27/37 (72.97%), attended less than 4 visits, while only 10/37 (27.03%) attended more than 4 visits. Regarding postnatal services, the highest number of mothers, 15/37 (40.54%), did not receive any service, 10/37 (27.03%) received wound care (episiotomy or cesarean section), and 7/37 (18.92%) mothers had received breastfeeding support.

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Figure 6 shows the challenges faced by mothers while accessing family planning services after giving birth (n37).

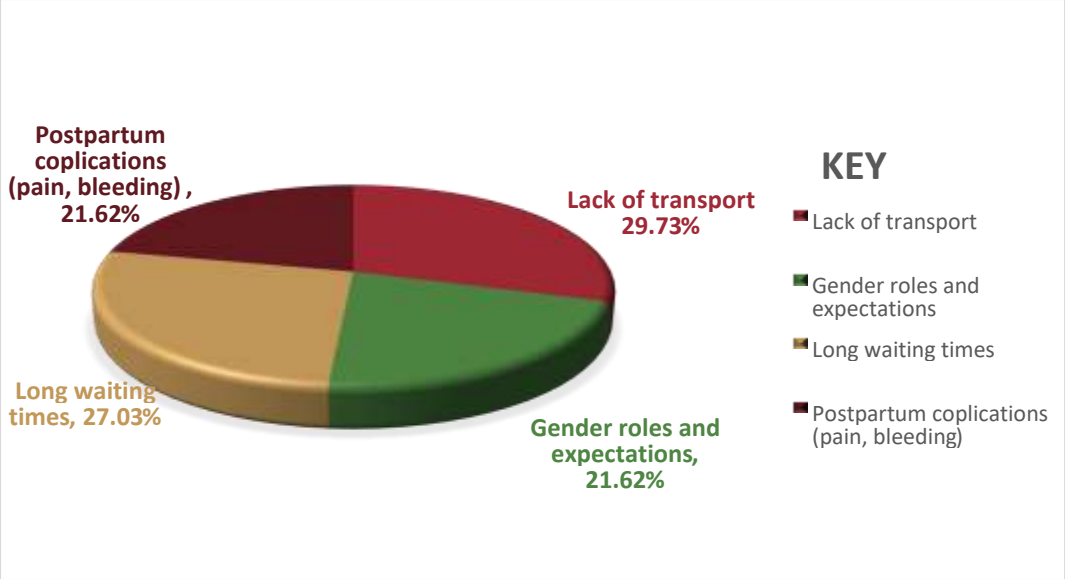

Figure 6 showed that, among 37 mothers interviewed, 29.73% of them lacked transport fees to access the hospital, 21.62% of them had gender roles and expectations, and 21.62% of them had postpartum complications (pain, bleeding), whereas 27.03% of them faced long waiting times.

DISCUSSION

Socio-demographic factors that are associated with short child spacing among pregnant mothers attending antenatal care at Soroti Regional Referral Hospital.

In this study, findings revealed that more than half 20/37(54.05%) of the respondents were aged (21-30) years because it's the best reproductive age where women are more fertile and sexually active whereas 5/37(13.5%) of the respondents were aged (16-20) years because most of them are still going to school and this limited them from giving birth at a very early age. The study further revealed that some (45.95%) of the respondents were married, 18.92% of the respondents were single, and 27.03% of the women were cohabiting due to financial constraints, which hindered them from getting married, whereas the minority were divorced due to family misunderstandings. The study showed that 59.46% of the respondents were employed, and this was due to the presence of small-scale jobs that don't require any qualifications, whereas 40.54% of the respondents were unemployed. This is because of limited job opportunities and dependence on agriculture for survival.

From the study findings, 37.84% of the respondents were Iteso, and this is because the research study was carried out in the Teso sub-region; 18.92% of the respondents were Kumam because they are neighboringthe Teso sub-region. The study also showed that 45.95% of the respondents attained a primary level of education and this was because of Universal Primary Education programs created by the government; while the least (18.92%) of the respondents had at least attained a tertiary level of education and this was due to poverty, early marriages which hindered them to attain higher education levels.

Individual factors associated with short child spacing among pregnant mothers attending antenatal care at Soroti Regional Referral Hospital.

The study findings revealed that 37.84% of the respondents were aged 18-20 years at their first marriage, followed by 32.43% of the respondents who were aged 15-17 years at their first marriage, and this could have been due to poverty, which led them into early marriages. This study is in line with the study done by Aklil et al. (2022), whereby 43.4% of the mothers were aged 15-17 years at first marriage. The study findings also showed that a significant number (40.54%) of the respondents, breastfed their previous child for a period of (7-12) months whereas 24.32% of the

respondents, breastfed their previous child for a period of (0-6) months and this could be due to limited maternal leave, lack of support from the partner and family and breastfeeding problems for example low milk supply, pain and nipple or breast tumor. This study is in line with the study done by Hailu & Gulte (2016), where mothers breastfed their children for less than 24 months. The study findings revealed further that 48.65% of the respondents had a preferred range of less than 24 months for spacing their children, and this could be due to aging pressure. This study is in line with the study done by Nti et al. (2014), where 48% of the respondents spaced their births for one year.

The study findings also showed that 40.54% of the respondents had poor husband support towards child spacing, and this could be due to cultural norms and values around family size and the use of family planning. This study is in line with the study done by Aleni et al. (2020), whereby 52.4% of the respondents lacked male involvement in child spacing activities. The study findings revealed that 40.54% of the respondents had lost their previous child, which could be due to miscarriages and diseases. This study is in line with the study done by Islam et al., (2022), where 26% of the women had births that occurred in short intervals, and the history of the death of a child was one of the
significant factors.

Socio-economic factors associated with short child spacing among pregnant mothers attending antenatal care at Soroti Regional Referral Hospital.

The study findings showed that almost half (45.95%) of the respondents' husbands were unemployed, and this could be due to limited job opportunities and a mismatch between skills and job market demands. This study is in line with the study done by Shifti et al. (2020), whereby having an unemployed husband was a useful predictor. The study findings showed that 24.32% of the respondents were illiterate, and this could be due to the inability to access education due to poverty. The study findings also showed that a majority (64.86%) of the respondents did not have any health insurance coverage for their family members due to unemployment and poverty to acquire insurance coverage. These study findings connect with the study done by Alhassan et al. (2022), where the prevalence of short birth interval was 49.7%, and having no health insurance coverage was seen as a useful predictor.

Findings also revealed that 32.43% of the respondents had a total number of 3 people occupying their household, which may be due to newly married couples starting up homes. This study agrees with the study done by Aychiluhm et al. (2020), where 46.10% of the respondents had short birth intervals, and the number of household occupants below 5 was a significant factor for short birth intervals. Finally, the study findings revealed that almost half (45.95%) of the respondents faced high transport costs as a challenge in attending postnatal care visits, and this limited them from attending postnatal care visits. This study finding is in line with the study done by Aleye et al. (2024), where 95% of the women did not attend postnatal care visits due to a lack of affordable transport means.

Health facility factors associated with short child spacing among pregnant mothers attending antenatal care at Soroti Regional Referral Hospital.

The study findings showed that a majority (67.57%) of the respondents were using short-term contraceptives as a birth control method, and this could be due to the desire to have another child within a short period. This study is consistent with the study done by Sanga et al. (2020), where women used short-term contraceptives that were not as effective as long-term contraceptives.

The study findings revealed that 72.97% of the respondents attended less than 4 antenatal visits, and this could be due to long waiting times at the hospital. This study is in line with the study done by Elioba et al. (2023), where 29% of the mothers had short birth intervals, and less or equal to antenatal visits were one of the predisposing factors. The study also revealed that 40.54% of the respondents did not receive any family planning method during postnatal visits, and this could be due to limited hours at the health facility and inadequate staffing of the health care providers at the health facility.

Conclusion

Individual factors associated with short child spacing, age at first marriage, employment status of husbands, and use of contraceptive methods of family planning.

Recommendation

Midwives, nurses, and other stakeholders should strengthen the family planning services in terms of quality and utilization.

Acknowledgment

I would like to express my sincere gratitude and appreciation to all those who contributed to the accomplishment of my research study. I thank the almighty God who enabled me to finish this research report. My heartfelt gratitude goes to my beloved mum, Mrs. Babirye Rose, who has tirelessly been there throughout my journey of studies. I also thank my supervisor, Mr. Opio Charles, who, amidst the busy schedules, spared time and sat with me to ensure the proper completion of this research report, and our Principal, Mr. Itomet Francis, and the entire staff for providing a conducive environment that enabled me to stay in the school with ease.

List of abbreviations

ANC: Antenatal Care
RRHs: Regional Referral Hospitals
SPSS: Statistical Package for Social Science
SRRH : Soroti Regional Referral Hospital
SSCN: Soroti School of Comprehensive Nursing
UDHS: Uganda Demographic Health Survey
WHO: World Health Organization

Source of funding

The study was not funded

Conflict of interest

The author did not declare any conflict of interest.

Author contributions

Mary Nakku collected data and drafted the manuscript of the study
Charles Opio supervised the study

Data availability

Data is available upon request

Author Biography

Mary Nakku is a student with a diploma at Soroti School of Comprehensive Nursing.
Charles Opio is a tutor at Soroti School of Comprehensive Nursing.

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