Journal of
Health, Medicine and Nursing
(JHMN)

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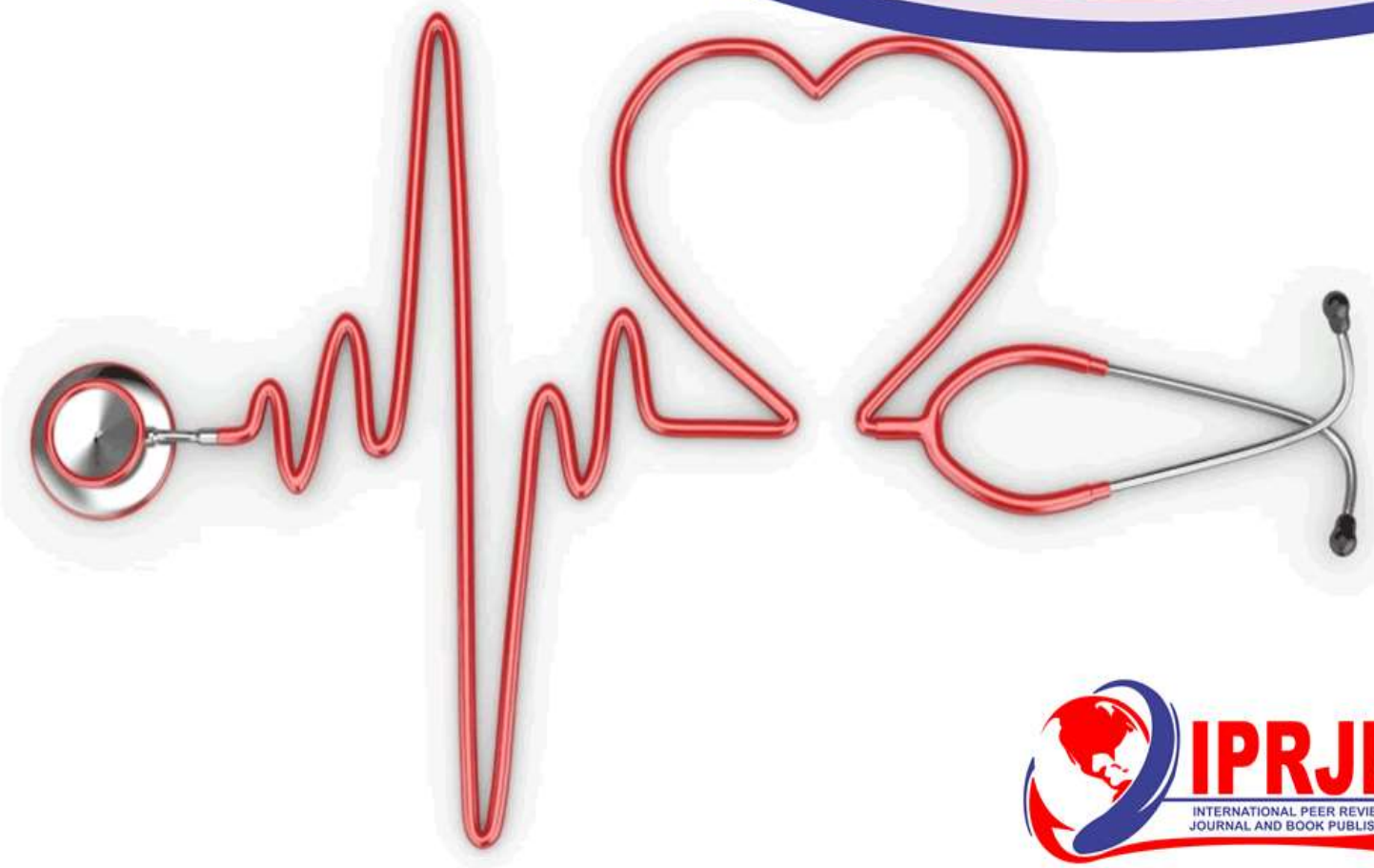

IPRJB
INTERNATIONAL PEER REVIEWED
JOURNAL AND BOOK PUBLISHING

Journal of Health, Medicine and Nursing
ISSN 2520-4025 (Online)
Vol.11, Issue 1. No.2, pp 22 – 35, 2025

www.iprjb.org

Influence of Health Referral Systems on Adolescent Sexual and Reproductive Health Service Utilization in Kajiado County, Kenya

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Article History

Received 9th November 2024

Received in Revised Form 11th December 2024

Accepted 10th January 2025

How to cite in APA format:

Aluda, W., Mapesa, J., & Njoroge, K. (2025). Influence of Health Referral Systems on Adolescent Sexual and Reproductive Health Service Utilization in Kajiado County, Kenya. *Journal of Health, Medicine and Nursing*, *11*(1), 22–35. https://doi.org/10.47604/jhmn.3152

Abstract

Purpose: Adolescent Sexual and Reproductive Health (ASRH) in Kajiado County, Kenya, is hindered by early marriages, cultural practices, and limited healthcare access. The pastoralist communities face unique challenges, increasing risks like unintended pregnancies and maternal mortality. Despite efforts to improve access, gaps in ASRH service utilization persist. This study examines the influence of referral systems on ASRH service use among adolescent girls in Kajiado County.

Methodology: A mixed-method design assessed the influence of referral systems on ASRH utilization among adolescent girls in Kajiado County. Data collection took place from December 2023 to March 2024. Quantitative data from 422 girls were analyzed using SPSS version 26, while qualitative data from 5 FGDs, 15 IDIs, and 15 KIIs were analyzed thematically using NVivo.

Findings: Only 15.8% of adolescents used ASRH referral systems. Trust (78.6%), confidentiality (74.2%), and accurate information (71.5%) were key facilitators. Married adolescents were 32.1% less likely to utilize referrals ($p < 0.05$), and those with primary education were 45.3% less likely ($p < 0.01$). Positive outcomes included 83.4% reporting improved ASRH knowledge and 79.2% better contraceptive access. Barriers included communication gaps (62.7%) and limited provider awareness.

Unique Contribution to Theory, Practice and Policy: The study identifies barriers such as poor communication, limited provider awareness, and socio-demographic disparities hindering ASRH service utilization. Positive outcomes, including improved knowledge and contraceptive access, suggest the potential of effective referral systems. Strengthening trust, confidentiality, and targeting vulnerable groups is crucial for improving ASRH referral pathways. Limitations included the small sample size and limited geographic scope.

Keywords: Sexual *and Reproductive Health, Adolescent Girls, Health Systems Approach, Service Utilization, Health Systems Management, Public Health*

INTRODUCTION

Sexual and reproductive health (SRH) services are critical for adolescent well-being, yet their utilization remains a challenge, particularly in low-resource settings like Kajiado County, Kenya. Globally, the World Health Organization (WHO) underscores the importance of robust health systems to ensure equitable access to healthcare. This involves strengthening six key pillars: human resources, service delivery, financing, data management, commodities supply chain, and governance [1]. Effective SRH service provision hinges on these pillars, including having trained healthcare providers who understand adolescent-specific needs, reliable delivery systems for continuous care, and adequate financing to support outreach and education programs [2]. However, in many low- and middle-income countries, adolescents face significant barriers to accessing SRH services due to socio-cultural norms, limited infrastructure, and poor health information systems [3], [4].

Kajiado County exemplifies these challenges, as its health system diverges significantly from the ideal framework. Studies highlight a shortage of trained healthcare providers in adolescent SRH, inadequate infrastructure, and logistical disruptions that hinder the delivery of services [5], [6]. Furthermore, inefficient supply chains result in frequent stockouts of critical SRH commodities like contraceptives, impacting service continuity [7]. Underdeveloped health information systems also impede tracking service utilization, limiting data-driven decision-making and resource allocation [8]. These systemic inefficiencies exacerbate unmet contraceptive needs, which stand at 23% among adolescent girls nationally, and are higher in Kajiado County, where only 19% of married adolescents use contraception compared to the national average of 37% [6], [9].

Adolescents, who make up 21% of Kajiado County's population, face unique vulnerabilities due to the intersection of these systemic challenges and socio-cultural factors [5]. The unmet SRH needs of this demographic manifest in high rates of early pregnancies, sexually transmitted infections, and inadequate access to information and services. HIV prevalence among women in the county is notably higher at 6.3% compared to 3.8% for men, signaling a significant public health concern [7]. Poor referral systems further compound these issues, as they fail to link adolescents to timely and appropriate care, leaving them underserved and at risk of adverse SRH outcomes. Addressing these gaps through strengthened referral systems is critical to improving SRH service utilization and ensuring better health outcomes for adolescent girls in Kajiado County.

METHODOLOGY

Data Collection Methods

Kajiado County was purposively selected, and 10 clusters were randomly chosen from the Kenya National Bureau of Statistics 2019 enumeration areas. Households within each cluster were randomly selected, and purposive sampling was used for FGDs and KIIs. The sample size of 422 was determined using Fisher's formula, with a 10% non-response rate added to the required minimum of 384, ensuring comprehensive data collection for the study's objectives. Data were collected using semi-structured questionnaires, key informant interviews (KIIs), and focus group discussions (FGDs). Semi-structured questionnaires were administered to 422 adolescent girls aged 15 to 19 years to gather quantitative data on SRH service access, knowledge, and attitudes. 15 key informant interviews were conducted with diverse stakeholders, with 3 interviews from each of the 5 groups: community health workers, teachers,

public health officers, medical doctors, and community leaders, while 10 focus group discussions (2 per sub-county, with 8 participants each) provided qualitative data.

Study Design

The study utilized a mixed-methods design, combining both quantitative and qualitative approaches. This approach included exploratory research to describe the current state of health referral systems and their role in SRH service utilization and quantitative analysis to identify patterns and relationships. The design followed the principles outlined by [10] to ensure a systematic and comprehensive analysis of the influence of referral systems on SRH service utilization among adolescent girls in Kajiado County.

Study Participants

The study targeted adolescent girls aged 15 to 19 from pastoralist communities in Kajiado County, focusing on those who had resided in the area for at least six months to ensure familiarity with local health referral systems. A total of 422 participants were selected based on their residency and ability to provide reliable responses regarding their experiences with sexual and reproductive health (SRH) services, while those with severe cognitive or physical conditions that could impair their participation were excluded. Ethical requirements were adhered to by obtaining informed consent from both the participants and their parents or guardians. Additionally, qualitative data were collected through interviews with key informants, including teachers, community health professionals, medical doctors, and opinion leaders, to explore contextual factors affecting SRH knowledge and service utilization among adolescent girls.

Data Extraction and Management

Both quantitative and qualitative data were collected through semi-structured questionnaires, key informant interviews (KIIs), and focus group discussions (FGDs). Quantitative data were managed using SPSS version 26 for coding, cleaning, and analysis. Descriptive statistics, bivariate analysis, and multivariate analysis were conducted to understand relationships and patterns. For the qualitative data, interviews and FGDs were conducted in private settings, lasting approximately 30-45 minutes for KIIs and 60-90 minutes for FGDs. A trained moderator facilitated the FGDs to ensure that all participants had the opportunity to contribute, while also keeping the discussions focused on the study's objectives. Qualitative data were analyzed using NVivo software, which facilitated the organization, coding, and interpretation of themes. Data were initially familiarized with, indexed, and charted to identify patterns, and themes were derived based on the study's predefined variables.

RESULTS

Socio-demographic Characteristics of Adolescent Girls

Table 1 presents the socio-demographic profile of the adolescent girls surveyed, providing critical context for understanding how health referral systems influence their utilization of sexual and reproductive health (SRH) services. The respondents were predominantly in early to mid-adolescence, with most having attained primary-level education. While a significant majority were single, 16.7% were married—a concerning issue as early marriage often limits autonomy and decision-making power. This lack of agency, coupled with restricted access to education and health services, creates significant barriers to utilizing referral systems effectively. These socio-demographic characteristics highlight the compounded vulnerabilities

faced by married adolescents, emphasizing the need for targeted interventions to improve their SRH service utilization through effective referral systems.

Table 1: Socio-demographic Characteristics of Adolescent Girls

Characteristic	Frequency	Percentage (%)
Age		
10-15 years	141	36.7
16 years	109	28.4
17 years	65	16.9
18 years	52	13.5
19 years	17	4.4
Level of education		
No formal education	73	19.1
Primary school	218	56.4
Secondary school	86	22.4
College/university	7	1.8
Marital status		
Single	312	81.3
Married	64	16.7
Separated	5	1.3
Widowed	3	0.8

Referral for Sexual and Reproductive Health Services by a Health Professional

The study revealed that a significant majority of adolescent girls, 82.81% (318 out of 384), reported not receiving referrals for sexual and reproductive health (SRH) services from a health professional. In contrast, only 17.19% (66 respondents) indicated that they had been referred. This suggests a low level of referral for SRH services among adolescent girls in the study area, which may indicate limited interaction between adolescents and healthcare providers or potential weaknesses in the referral system. Detailed results of these findings are shown in Table A1 in the appendix.

Factors Influencing Adolescents' Decision to Utilize ASRH Referral Services

The analysis revealed that trust in healthcare professionals is the most influential factor in adolescents' decisions to utilize Adolescent Sexual and Reproductive Health (ASRH) referral services, with 26.56% of respondents citing it as their primary motivator. Confidentiality emerges as the second most significant factor, influencing 24.48% of adolescents. The information provided by the referral services also plays a key role, accounting for 20.05% of the responses. Other factors, such as recommendations from peers (10.68%) and accessibility (8.07%), have a relatively lesser impact on decision-making. Additionally, 10.16% of respondents cited various "other" reasons for their decisions. These findings emphasize the critical role of trust, confidentiality, and the provision of accurate and accessible information in encouraging adolescents to engage with ASRH referral services. Detailed results are presented in Table A2 in the appendix.

Additionally, significant differences in factors influencing ASRH referral service utilization were observed across age, education level, and marital status. Among younger adolescents, trust in healthcare professionals and accessibility emerged as prominent factors, while older age groups increasingly prioritized information provided and confidentiality. Education level showed a similar pattern, with adolescents who had primary education identifying confidentiality and trusted healthcare professionals as key influences. Marital status further highlighted trust and confidentiality as dominant factors among single adolescents, while

Journal of Health, Medicine and Nursing
ISSN 2520-4025 (Online)
Vol.11, Issue 1. No.2, pp 22 – 35, 2025
www.iprjb.org

married adolescents placed greater emphasis on information provided. The chi-square tests revealed significant associations ($p < 0.05$) between these factors and ASRH service utilization for most categories. However, chi-square tests were not conducted for variables with cells containing fewer than five responses, as such conditions violate statistical assumptions for chi-square analysis. Detailed results are provided in Table 2.

Table 2: Factors Influencing Adolescent Sexual and Reproductive Health (ASRH) Referral Service Utilization by Age, Education, and Marital Status

Age	Show the most influential factor i n your decision to utilize the ASRH referral service						Total
	Accessibility	Trusted healthcare profession	Confidentiality	Information provided	Recommendation from Peers	Others	
Below 15	31(8.08%)	33(8.60%)	26(6.77%)	11(2.87%)	21(5.46%)	19(4.95%)	141 (36.76%)
15 - 16	0(0.00%)	69(17.95%)	37(9.64%)	0(0.00%)	3(0.78%)	0(0.00%)	109(28.40%)
16 - 17	0(0.00%)	0(0.00%)	31(8.06%)	34(8.85%)	0(0.00%)	0(0.00%)	65 (16.91%)
17 -18	0(0.00%)	0(0.00%)	0(0.00%)	32(8.33%)	17(4.45%)	3(0.78%)	52 (13.54%)
18 - 19	0(0.00%)	0(0.00%)	0(0.00%)	0(0.00%)	0(0.00%)	17(4.42%)	17 (4.42%)
Total	31(8.08%)	102(26.56%)	94(24.50%)	77(20.06%)	41(10.69%)	39(10.16%)	384 (100%)
Pearson chi2(20)				492.8239			
P-value				0.000			
Current level of education							
No Formal Education	31(8.08%)	42(10.94%)	0(0.00%)	0(0.00%)	0(0.00%)	0(0.00%)	73(19.02%)
Primary	0(0.00%)	60(15.63%)	94(24.48%)	56(16.67%)	6(1.56%)	2(0.52%)	218(56.77%)
Secondary	0(0.00%)	0(0.00%)	0(0.00%)	21(5.46%)	35(9.13%)	30(7.81%)	86(22.38%)
College/University	0(0.00%)	0(0.00%)	0(0.00%)	0(0.00%)	0(0.00%)	7(1.82%)	7 (1.82%)
Total	31(8.08%)	102(26.56%)	94(24.50%)	77(20.06%)	41(10.69%)	39(10.16%)	384 (100%)
Pearson chi2(15)				502.2010			
P-value				0.000			
Marital Status							
Single	31(8.08%)	102(26.56%)	64(16.67%)	35(9.14%)	41(10.69%)	39(10.16%)	312(81.25%)
Married	0(0.00%)	0(0.00%)	25(6.52%)	39(9.64%)	0(0.00%)	0(0.00%)	64(16.67%)
Separated	0(0.00%)	0(0.00%)	5(1.30%)	0(0.00%)	0(0.00%)	0(0.00%)	5(1.30%)
Widowed	0(0.00%)	0(0.00%)	0(0.00%)	3(0.78%)	0(0.00%)	0(0.00%)	3(0.78%)
Total	31(8.08%)	102(26.56%)	94(24.50%)	77(20.06%)	41(10.69%)	39(10.16%)	384 (100%)
Pearson chi2(15)				145.1640			
P-value				0.000			

Awareness of Referral for Sexual Reproductive Health among Healthcare Professionals

The study found that a large majority of adolescents, 92.45% (355), reported that healthcare professionals were unaware of their referrals for sexual and reproductive health services. In contrast, only 7.55% (29) of respondents indicated that healthcare professionals were aware of their referrals. This substantial gap in awareness highlights a critical issue in communication between healthcare providers and adolescents, which may impede timely access to essential sexual and reproductive health services. The detailed results are provided in Table A3 in the appendix.

Communication between Referral Agents and Healthcare Providers Regarding ASRH Services

The study found that communication between referral agents and healthcare providers concerning adolescent sexual and reproductive health (ASRH) services was largely ineffective. Only 43 respondents (11.20%) reported experiencing good communication, while the vast majority, 341 respondents (88.80%), indicated that communication was inadequate. This significant gap in the referral process suggests that poor communication may be a major barrier,

preventing adolescents from accessing the necessary health services and potentially compromising their overall health outcomes. The detailed results are presented in Table A4 in the appendix.

Factors Facilitating Utilization of Sexual and Reproductive Health Services After Receiving a Referral

The study identified several factors that facilitate adolescents' utilization of sexual and reproductive health services after receiving a referral. Financial support emerged as the most significant factor, with 44.01% of respondents indicating that financial resources made it easier to access these services. This highlights the critical role that financial assistance plays in enabling adolescents to seek necessary care. The attitude of service providers was another notable facilitator, with 25.26% of participants emphasizing the importance of a supportive and understanding approach from healthcare professionals. This suggests that positive interactions with providers can encourage adolescents to utilize services. Distance to health facilities was also cited as a facilitating factor by 15.89% of respondents, pointing to accessibility concerns as a key consideration. Additionally, 14.84% of participants mentioned parental influence, indicating the impact of family dynamics on adolescents' decisions to seek health services. These findings demonstrate that while financial and provider-related factors are central enablers, logistical and familial factors also play significant roles in adolescents' access to sexual and reproductive health services. The detailed results are shown in Table A5 in the appendix.

The study also revealed significant variations in factors influencing the ease of accessing Adolescent Sexual and Reproductive Health (ASRH) referral services, particularly across age, education level, and marital status. For younger adolescents, particularly those aged below 15, financial constraints were the most significant barrier to accessing services. As adolescents aged, the influence of financial barriers decreased, and other factors such as the attitude of service providers and the distance to health facilities became more prominent. Adolescents with primary education were particularly impacted by financial constraints, while those with secondary education were more concerned about provider attitudes. Marital status also influenced access, with single adolescents primarily citing financial constraints and provider attitudes as significant barriers, while married adolescents reported fewer concerns related to these factors. Chi-square tests for age, education, and marital status all yielded significant results ($p < 0.05$), indicating a strong association between these factors and the ease of accessing ASRH services. However, variables with cells containing fewer than five responses did not undergo chi-square analysis due to statistical limitations. The detailed results for these analyses are provided in Table 3.

Journal of Health, Medicine and Nursing
ISSN 2520-4025 (Online)
Vol.11, Issue 1. No.2, pp 22 – 35, 2025
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Table 3: Reasons Influencing the Ease of Accessing Adolescent Sexual and Reproductive Health (ASRH) Referral Services by Age, Education and Marital Status

Age	Select the reasons that make it easy for you to use referral ASRH services				Total
	Financial	Distance to health facilities	Attitude to the service provider	Parental influence	
Below 15	56(14.58%)	23(5.99%)	39(10.16%)	23(5.99%)	141 (36.76%)
15 - 16	50(13.02%)	10(2.60%)	37(9.64%)	12(3.13%)	109 (28.40%)
16 - 17	35(9.13%)	13(3.39%)	8(2.08%)	9(2.34%)	65 (16.91%)
17 -18	22(5.73%)	13(3.39%)	10(2.60%)	7(1.82%)	52 (13.54%)
18 - 19	6(1.56%)	2(0.52%)	3(0.78%)	6(1.56%)	17 (4.42%)
Total	169(44.02%)	61(15.90%)	97(25.30%)	57(14.84%)	384(100%)
Pearson chi2(12)			24.3496		
P-value			0.018		
Current level of education					
No Formal Education	25 (6.52%)	14 (3.65%)	22 (5.73%)	12 (3.13%)	73 (19.02%)
Primary	101 (26.30%)	37 (9.63%)	61 (15.90%)	19 (4.95%)	218 (56.77%)
Secondary	38 (9.90%)	10 (2.60%)	13 (3.39%)	25 (6.51%)	86 (22.38%)
College/University	5 (1.30%)	0 (0%)	1 (0.26%)	1 (0.26%)	7 (1.82%)
Total	169 (44.02%)	61 (15.90%)	97 (25.30%)	57 (14.84%)	384 (100%)
Pearson chi2(9)			28.3284		
P-value			0.001		
Marital Status					
Single	142 (37.02%)	42 (10.94%)	80 (20.83%)	48 (12.50%)	312 (81.25%)
Married	22 (5.73%)	19 (4.95%)	17 (4.42%)	6 (1.56%)	64 (16.67%)
Separated	5 (1.30%)	0 (0%)	0 (0%)	0 (0%)	5 (1.30%)
Widowed	0 (0%)	0 (0%)	0 (0%)	3 (0.78%)	3 (0.78%)
Total	169 (44.02%)	61 (15.90%)	97 (25.30%)	57 (14.84%)	384 (100%)
Pearson chi2(9)			35.3222		
P-value			0.000		

Recommendation for Health Referral System for Sexual and Reproductive Health Services

The study revealed a strong reluctance among adolescent girls to recommend the health referral system for sexual and reproductive health services. Only 9.90% of respondents indicated that they would recommend the system to other adolescent girls, while the overwhelming majority (90.10%) would not. This significant disparity points to potential issues within the referral system, including insufficient communication, lack of trust in healthcare providers, or perceived barriers to accessing services. The negative feedback suggests that the current referral system is not meeting the needs or expectations of the adolescent girls, emphasizing the need for comprehensive improvements. Enhancing communication, building trust with healthcare providers, and addressing accessibility issues could be crucial steps in increasing the system's acceptance and effectiveness. The detailed results of this analysis are shown in Table A6 in the appendix.

Further analysis revealed that this reluctance varies across age, education, and marital status. None of the respondents aged 16-19 recommended the system, and a significant relationship between age and the likelihood of recommending the referral system was confirmed by the Pearson chi-squared test ($p = 0.000$), indicating that older adolescents are less likely to endorse it. Education also plays a role, with those having no formal education being the only group to

recommend the system. A significant association between education level and recommendation ($p = 0.000$) suggests that adolescents with higher education are less inclined to support the referral system. Marital status further influences this decision, with single adolescents being the most likely to reject the system. Chi-squared analysis revealed a significant relationship between marital status and the likelihood of recommending the system ($p = 0.021$). However, the chi-square test was not conducted for variables with cells containing fewer than five responses, such as the "Widowed" and "Separated" marital status categories, as chi-square tests require a minimum of five observations per cell to ensure reliable results. Detailed results are presented in Table 4.

Table 4: Recommendation of Health Referral System for Sexual and Reproductive Health Services by Age, Education, and Marital Status

Age	Would you recommend a Health referral system for sexual and reproductive health services to other adolescent girls?		Total
	Yes	No	
Below 15	31 (8.07%)	110 (28.65%)	141 (36.76%)
15- 16	7 (1.82%)	102 (26.56%)	109 (28.40%)
16- 17	0 (0%)	65 (16.93%)	65 (16.91%)
17 -18	0 (0%)	52 (13.54%)	52 (13.54%)
18- 19	0 (0%)	17 (4.42%)	17 (4.42%)
Total	38 (9.90%)	346 (90.10%)	384 (100%)
Pearson chi2(4)		39.3058	
P-value		0.000	
Current level of education			
No	38 (9.90%)	35 (9.13%)	73 (19.02%)
Formal Education			
Primary	0 (0%)	218 (56.77%)	218 (56.77%)
Secondary	0 (0%)	86 (22.38%)	86 (22.38%)
College/University	0 (0%)	7 (1.82%)	7 (1.82%)
Total	38 (9.90%)	346 (90.10%)	384 (100%)
Pearson chi2(3)		179.6703	
P-value		0.000	
Marital Status			
Single	38 (9.90%)	274 (71.43%)	312 (81.25%)
Married	0 (0%)	64 (16.67%)	64 (16.67%)
Separated	0 (0%)	5 (1.30%)	5 (1.30%)
Widowed	0 (0%)	3 (0.78%)	3 (0.78%)
Total	38 (9.90%)	346 (90.10%)	384 (100%)
Pearson chi2(3)		9.7323	
P-value		0.021	

Discussion

Socio-Demographic Characteristics of Adolescent Girls

The socio-demographic profile of the adolescent girls in this study reveals early to mid-adolescence as the predominant age group, with most respondents having attained primary-level education and a majority being single. These findings align with studies like [11] and [12], which emphasize the influence of education and marital status on healthcare access. Younger adolescents often face additional barriers due to limited autonomy and lack of information, similar to trends observed by [13] in low-income settings and [14] in pediatric care, where socio-demographic factors significantly shaped healthcare outcomes. The presence

of early marriages in the study further highlights restricted autonomy and SRH service access, echoing findings from [15] and [16], which emphasize the compounded challenges for married adolescents.

Referrals for Sexual and Reproductive Health Services

The study uncovered a low level of referrals for SRH services among adolescent girls, reflecting inadequate interaction between adolescents and healthcare providers. This aligns with research by [17], which highlighted weak referral systems as a critical barrier in low- and middle-income countries, and [18]**,** which documented similar inadequacies in sexual and reproductive health services in Zambia. While studies like [19] and [20] noted moderately effective referral systems in certain contexts due to community-based initiatives, this study reveals persistent gaps. The findings suggest that interventions like those proposed by [21], focusing on strengthening referral systems through trust and communication, could benefit the study area.

Factors Influencing ASRH Referral Service Utilization

The results demonstrate that trust in healthcare professionals, confidentiality, and the provision of accurate information are the most influential factors for adolescents' decisions to utilize ASRH referral services. These findings resonate with [22] and [23], who underscored the importance of trust and confidentiality in healthcare uptake. However, the study's findings differ from those of [24] and [25], where accessibility and proximity were more significant determinants. The lower influence of accessibility in this study may reflect unique infrastructural or cultural dynamics, as highlighted in [11], which documented variations in healthcare access across different regions.

Awareness and Communication Challenges in Referral Services

The study highlights a substantial gap in healthcare professionals' awareness of referrals for SRH services and ineffective communication between referral agents and healthcare providers. These findings are consistent with studies like [26] and [13], which documented fragmented referral systems and poor communication as barriers to healthcare delivery. However, unlike [27], which observed improvements in referral system communication through electronic systems, and [18], which highlighted targeted interventions, this study suggests persistent systemic inefficiencies. Such findings underscore the need for more integrated and well-communicated referral systems, as advocated by [20].

Recommendations and Reluctance to Endorse Referral Systems

The strong reluctance among adolescent girls to recommend the referral system underscores systemic inadequacies, including poor communication, lack of trust in providers, and perceived barriers to service access. These findings echo concerns raised in studies such as [18] and [16], which identified similar systemic issues in SRH referral systems. However, the divergence from studies like [19] and [12], where community-based interventions significantly improved adolescents' perceptions of referral systems, highlights the context-specific nature of healthcare challenges. The observed variations based on age, education, and marital status further align with findings from [13] and [17], emphasizing the need for tailored interventions that address the unique needs of diverse adolescent subgroups.

Conclusion

The study concludes that adolescent girls face significant barriers to accessing effective sexual and reproductive health (SRH) referral services, primarily due to weak healthcare referral systems, inadequate communication, and systemic issues such as lack of trust, confidentiality, and autonomy. These challenges are exacerbated by socio-demographic factors, including age, education level, and marital status, which influence service utilization patterns. While trust and confidentiality emerged as critical enablers, the study highlights persistent gaps in healthcare provider awareness and communication efficacy, reflecting broader systemic inadequacies. Tailored interventions that address these barriers, strengthen referral systems, and prioritize adolescent-friendly approaches are essential to improving SRH outcomes for this vulnerable group.

Conflict of Interests

We declare no conflict of interest

Authors Contributions

WKA conceived and designed the study, analyzed data, wrote the first manuscript. KN and JM revised the concept and study design, Reviewed data. Both authors revised the manuscript before submission.

Acknowledgements

I thank Joseph Muthoni for his invaluable support in designing the research methodology, developing data collection tools, and providing expert guidance in data interpretation, all of which were key to completing this research.

Funding

No funding

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Journal of Health, Medicine and Nursing
ISSN 2520-4025 (Online)
Vol.11, Issue 1. No.2, pp 22 – 35, 2025
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Appendix

Table A1: Referral for Sexual and Reproductive Health Services by a Health Professional

I was referred for SRH services by a health profession	Frequency	Percent
Yes	66	17.19
No	318	82.81
Total	**384**	**100**

Table A2: Factors Influencing Adolescents' Decision to Utilize ASRH Referral Services

Show the most influential factor i n your decision to utilize the ASRH referral service	Frequency	Percent
Accessibility	31	8.07
Trusted healthcare profession	102	26.56
Confidentiality	94	24.48
Information provided	77	20.05
Recommendation from Peers	41	10.68
Others	39	10.16
Total	**384**	**100**

Table A3: Awareness of Referral for Sexual Reproductive Health among Healthcare Professionals

The healthcare professionals were aware of my referral for sexual reproductive health	Frequency	Percent
Yes	29	7.55
No	355	92.45
Total	**384**	**100**

Table A4: Communication between Referral Agents and Healthcare Providers Regarding ASRH Services

There was good communication between the referral agent and the health care provider about the ASRH service I required	Frequency	Percent
Yes	43	11.20
No	341	88.80
Total	**384**	**100**

Table A5: Factors Facilitating Utilization of Sexual and Reproductive Health Services after Receiving a Referral

Select the reasons that make it easy for you to use referral ASRH services	Frequency	Percent
Financial	169	44.01
Distance to health facilities	61	15.89
Attitude to the service provider	97	25.26
Parental influence	57	14.84
Total	**384**	**100**

Journal of Health, Medicine and Nursing
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www.iprjb.org

Table A6: Recommendation for Health Referral System for Sexual and Reproductive Health Services

Would you recommend a Health referral system for sexual and reproductive health services to other adolescent girls?	Frequency	Percent
Yes	38	9.90
No	346	90.10
Total	**384**	**100**