

SEXUAL AND REPRODUCTIVE HEALTH SERVICES UTILIZATION AMONG ADOLESCENTS IN SOUTH ETHIOPIA: EXAMINING THE ROLE OF STIGMA, SOCIAL SUPPORT, AND SELF-EFFICACY

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ABSTRACT

INTRODUCTION: Despite the high burden of sexual and reproductive health (SRH) during adolescence and its associated negative consequences, relatively little attention has been given to the role of stigma, social support, and self-efficacy in adolescents' SRH services utilization. Therefore, this study aimed to examine the role of stigma, social support, and self-efficacy in adolescents' SRH services utilization in South Ethiopia.

METHODS: A total of 1172 adolescents were selected using a multi-stage stratified random sampling method. Correlation analysis was performed to identify relationships between the variables. A structural equation model was used to examine the chain and single mediating roles of self-efficacy and perceived social support.

RESULTS: This study found that the direct, indirect, and overall effects of SRH-related stigma on the utilization of SRH services were significant. A single mediation effect via perceived social support was -0.0017 [bootstrap 95% CI: -0.0026, -0.0007] and self-efficacy was -0.00123 [bootstrap 95% CI: (-0.0023, -0.0002)] in the association between SRH service utilization and SRH-related stigma. The chain mediation effect test showed that perceived social support and self-efficacy mediated the effect of SRH-related stigma on SRH service utilization, with a mediation effect score of -0.0025 [bootstrap 95% CI: (-0.0034, -0.0015)].

CONCLUSION: The association between SRH-related stigma and SRH service utilization was partially mediated by self-efficacy and perceived social support. The chain mediation effect test also confirmed that perceived social support and self-efficacy sequentially mediated the effect of SRH-related stigma on SRH service utilization. Therefore, designing comprehensive interventions that target "3S" stigma, social support, and self-efficacy may be effective in improving service utilization.

KEYWORDS: Adolescents; Sexual and Reproductive Health Service; Stigma; Self-efficacy, Perceived social support; South Ethiopia.

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INTRODUCTION

According to the World Health Organization (WHO), adolescence is 10 to 19 years, which is called the transition from childhood to adulthood¹. This age is also known as the crucial stage of development and is the foundation for good health². SRH and well-being are recognized as important components of overall health and development³. Recent studies have shown that engagement in risky behaviors is increasing^{4, 5}.

Globally, there are 1.3 billion adolescents⁶. In Ethiopia, adolescents comprise 23% of the total population⁶. However, more than 3,000 adolescents die every day worldwide, mostly from preventable or curable causes such as unwanted pregnancy, unsafe abortion, and sexually transmitted infections (STIs), including HIV/AIDS⁶. Evidence suggests that these problems can be easily prevented or treated through SRH services⁷. However, the utilization of these services among adolescents remains low^{8, 9}. For example, recent studies in Ethiopia showed that the utilization of SRH services among adolescents ranges from 8.6% to 39.5%¹⁰⁻¹³.

SRH-related stigma further limits the utilization of SRH services and contributes to poor SRH outcomes¹⁴.

Stigma related to SRH poses a major public health threat to adolescents¹⁵. Previous empirical study findings demonstrated that there is an inverse association between SRH-related stigma and adolescents' use of SRH services^{13,14,16}. It has also been found that stigma significantly decreases (limits) the level of social support among adolescents¹⁷. Likewise, some studies have consistently confirmed that Perceived Social Support (PSS) increases overall self-efficacy and directly influences adolescent behavior or indirectly predicts adolescent behavior via self-efficacy^{18,19}. Furthermore, empirical study findings demonstrate that self-efficacy and PSS play a mediating role. For instance, Chang et al. reported that PSS plays a mediating role in the relationship between depressive symptoms and perceived stigma among individuals

with substance use disorders²⁰. Tao et al. reported that PSS and self-efficacy were sequential mediators in the relationship between HIV self-management and HIV-related stigma²¹.

However, most studies have focused on adolescents' mental health issues^{18, 20, 22, 23}. There is little research evidence on these aspects of adolescent SRH. Therefore, this study aimed to examine the chain and single mediation role of self-efficacy and PSS in the association between SRH-related stigma and SRH service utilization among adolescents in South Ethiopia. Based on prior studies, we proposed the following three hypotheses. First, PSS played a mediating role in the association between SRH-related stigma and SRH service utilization. Second, self-efficacy played a mediating role in the association between SRH-related stigma and SRH service utilization. Third, PSS and self-efficacy sequentially mediated the association between SRH-related stigma and SRH service utilization among adolescents.

METHOD AND MATERIALS

Study design and setting

A community-based cross-sectional study was conducted in Gamo zone of South Ethiopia Regional State from March 2 to April 9, 2023.

Population

The source population was comprised of all households with adolescents and residents in the study area. All randomly selected households that had adolescents (10-19 years old) and permanent residents in the selected study area were the study population. However, those adolescents who had known hearing or mental impairment and/or were critically ill during data collection were excluded from this study.

Sample size determination

The sample size was calculated using the formula for a single population proportion with the following assumptions: 95% CI level, 80% power, design effect of 2, margin of error of 4% ($d=0.04$), 80% power, and proportion of SRH services utilization of 33.8% taken from study conducted in Central

Ethiopia¹⁰. The calculated sample size was 1074. After adding a non-response rate of 10%, the final sample size was 1181. To select study participants a multistage stratified sampling technique was used.

Measurement

SRH-service utilization was measured by asking adolescents whether they used SRH-service within the last 12 months from nearby health institutions, which was dichotomized into two groups. Based on the Nairobi Summit (ICPD+25) essential packages of SRH services for adolescents using the life course approach were used to measure SRH services utilization²⁴. The essential package of services includes modern contraceptive services, maternal and newborn care, VCT services, safe abortion and post-abortion care services, and STI diagnosis and treatment services within the last 12 months²⁴. If the adolescents utilized at least one item, it was considered positive (“yes”) response was coded as “1” and “No” was coded as “0.”

Sexual and Reproductive Health Stigma: This was measured using 20 questions, adapted from the Adolescent SRH-related Stigma Scale. It has three subscales: enacted stigma (seven questions), internalized stigmatization (six questions), and stigmatizing lay attitudes (seven questions). Each question used a three-point Likert scale (1 = disagree, 2 = neutral, and 3 = agree). We recoded (disagree and neutral to ‘0’ and agree to ‘1’ [14]. Then each question was summed to obtain the total score. It ranges from 0-20. Higher scores indicate higher perceived stigma[14].

Perceived social support (PSS): This was measured using 12-item questions, adapted from the Multidimensional Scale of PSS²⁵. It has three subscales: perceived family support (four items), friend support (four items), and other support (four items). Each item uses a seven-point Likert scale (from 1 (very strongly disagree) to 7 (very strongly agree). Each item was summed to obtain the total score. The higher the total score, the higher the PSS.

Adolescent Self-Efficacy: It was measured using 10-item questions adapted from the General Self-

Efficacy Scale²⁶. The scale has four points, from 1 (completely incorrect) to 4 (completely correct)²⁶. Each item was summed to obtain the total score. The higher the total score, the higher self-efficacy.

Data Collection Procedure

The data collection was performed by 12 health professionals and three supervisors with master’s degrees in public health to supervise the data collection. The data collection questionnaires were adapted from the Global Early Adolescent interview surveys, the WHO illustrative questionnaire, and the review of previous studies^{13, 14, 25, 26}. The questionnaire was initially prepared in English and translated into the local language. The local language (Amharic) version of the questionnaire was used for the final data collection. Male participants were interviewed by male data collectors, and female by female data collectors. Less sensitive questions were asked before the more sensitive ones. The Kobo Toolbox software was used to collect the data. The principal investigator and supervisors oversaw the entire data collection process and checked the data for completeness daily. Extensive training was provided to data collectors and supervisors. The pre-test was conducted on 5% (60 adolescents) of the participants in Chencha District. The field supervisors checked the completeness of the questionnaires before the data collectors were sent to the center. In addition, the principal investigator regularly reviewed the files sent to the center by each data collector.

Data Analysis and Management

The data were cleaned, processed, and analyzed using STATA version 14.0. Descriptive statistics, such as frequencies, percentages, means, and standard deviations, were calculated and presented using detailed text narratives, graphs, and tables. The reliability of the measurements was verified using Cronbach’s α for each composite variable. Pearson correlation analyses were conducted to test the association between variables. A structural equation model was used to examine the chain and single mediating roles of self-efficacy and PSS. The mediating effect was significant when the 95%

confidence interval did not include zero. A p-value of 0.05 (two-tailed) was considered statistically significant.

Ethical consideration

The Wolaita Sodo University Institutional Research Review Committee (IRRC) granted ethical approval for this study on February 9, 2023 (Project Reference Number: WSU-IRRC/004/2023). An official letter of permission was obtained from the Gamo Zone health department. Before the actual data collection, written informed consent was obtained from each participant. For participants under 18 years of age, assent was obtained from the study participants, and written informed consent was obtained from their parent/legal guardian.

RESULTS

Socio-demographic characteristics of adolescents

A total of 1172 adolescents took part in the study with a response rate of 99.24%. The proportion of adolescents aged 15 to 19 was 675 (57.6%). More than half (56.1%) of the respondents were female and 1022 (87.2%) of the adolescents were enrolled at the school at the time of the study (Table 1).

Perceived social support, self-efficacy, stigma, and SRH services utilization

Of the total number of respondents, 198 (16.9%) (95% CI 14.8%-19.2%) used at least one SRH service in the last 12 months. The participants' mean (\pm SD) stigma score was (12.47 \pm 5.21). The PSS score was (57.02 \pm 12.68), and the self-efficacy score was (27.91 \pm 7.50). The result of the internal consistency test using Cronbach's alpha shows that PSS, self-efficacy, and stigma were 0.911, 0.884, and 0.886, respectively. The finding indicates a high level of reliability for each of these scales (Table 2).

Table 2: Descriptive analysis of Stigma, Self-efficacy, and Perceived social support scores of adolescents in Gamo Zone, South Ethiopia Regional State, 2023.

Scales and dimension	Number of items	Mini mum	Maxi mum	Mean \pm SD	Internal consistency test
Self-efficacy	10	10	40	27.91 \pm 7.50	0.884
Perceived social support	12	19	84	57.02 \pm 12.68	0.911
Stigma	20	0	20	12.47 \pm 5.21	0.886

Table 1: Socio-demographic characteristics of adolescents in Gamo Zone, South Ethiopia Regional State, 2023.

Variables	Category	Frequency	Percentage
Age (in years)	Early adolescents (10-14 years)	497	42.4
	Late adolescents (15-19 years)	675	57.6
Sex of respondent	Male	512	43.7
	Female	660	56.3
Residence	Urban	689	58.8
	Rural	483	41.2
School enrolment status	School enrolled	1022	87.2
	Not enrolled in school	150	12.8
Attendance at religious services	Every day	170	14.5
	At least once a week	905	77.2
	At least once a month	82	7.0
	Never	15	1.3
Living arrangement	Lived with their parents	999	85.2
	Not living with their parents	173	14.8

Correlations between perceived social support, self-efficacy, stigma, and SRH Services Utilization

The result of correlation analysis shows that there is a negative correlation between SRH-related stigma with SRH services utilization ($r=-0.2042$, $p<0.001$), PSS ($r = -0.120$, $p<0.001$) and self-efficacy ($r = -0.0739$,

$p<0.001$). Perceived social support shows positive correlation with SRH service utilization ($r=0.2146$, $p<0.001$) and with self-efficacy ($r=0.1762$, $p<0.001$). Self-efficacy also shows a positive correlation with the utilization of SRH services ($r=0.2450$, $p<0.001$) (Table 3).

Table 3: The correlation between Stigma, Self-efficacy, and Social support of adolescents in Gamo Zone, South Ethiopia Regional State, 2023.

		Pearson correlation coefficient			
		Stigma	Perceived social support	Self-efficacy	SRH services utilization
1	Stigma				
2	Perceived social support	-0.120**			
3	Self-efficacy	-0.0739**	0.1762**		
4	SRH services utilization	-0.2042**	0.2146**	0.2450**	

**p < 0.001

A single Mediating effect of Self-efficacy and Social support

A single mediation analysis result using self-efficacy as a mediator shows that higher self-efficacy predicted better use of SRH services ($=0.0116$, $p<0.001$). The mediating effect value was -0.00123 [bootstrap 95% CI: -0.0023 , -0.0002]. The indirect effect of SRH-related stigma on SRH services utilization through self-efficacy accounted for 8.16% of the total effect. Likewise, result of PSS as a mediator shows that

higher PSS predicts better use of SRH services ($=0.0057$, $p<0.001$). The mediating effect value was -0.0017 [Bootstrap 95% CI: -0.0026 , -0.0007]. The indirect effect of SRH-related stigma on the use of SRH services via PSS accounts for 11.56% of the total effect. The finding indicated that self-efficacy as well as PSS had a partial mediating role in the relationship between SRH-related stigma and utilization of SRH service. These results supported our Hypothesis 1 and 2 (Table 4 and Figure 1&2).

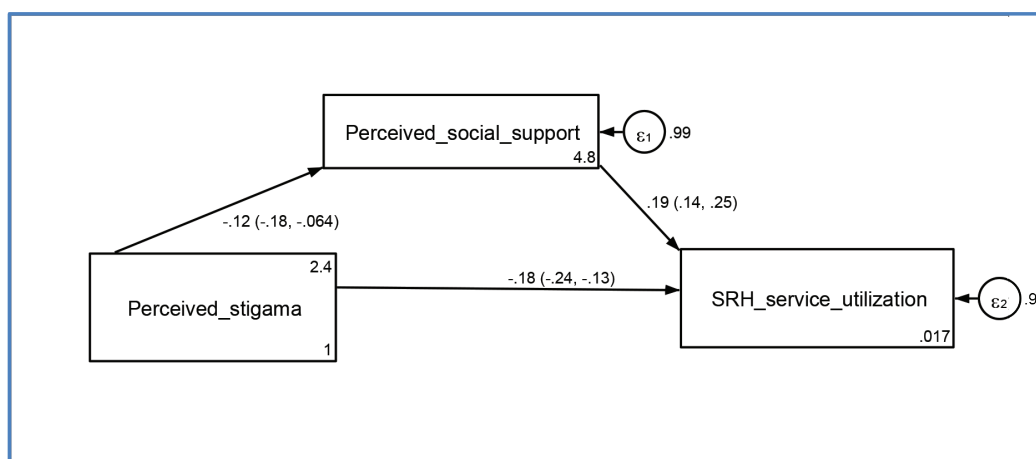


Figure 1: The single mediation role of social support in the relationship between stigma and SRH services utilization in Gamo Zone, South Ethiopia Regional State, 2023.

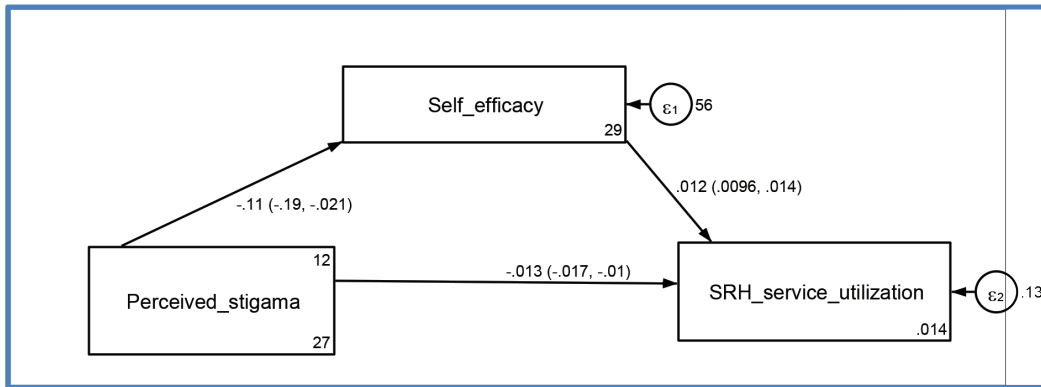


Figure 2: The single mediation role of self-efficacy in the relationship between stigma and SRH services utilization among adolescents in Gamo Zone, South Ethiopia Regional State, 2023.

The chain mediating effect of social support and self-efficacy

The results of the chain mediation analyses showed that the direct effect was -0.0122 [bootstrap 95% CI: (-0.0157,-0.0088)]. The chain mediation model revealed that PSS and self-efficacy sequentially mediated the effect of SRH-related stigma on SRH service utilization, with a mediation effect value of -0.0025[bootstrap 95% CI: (-0.0034,-0.0015)]. The chain mediation effect consisted of indirect effects

generated by the three paths. **Path 1** (stigma → PSS → SRH service utilization). **Path 2** (stigma → self-efficacy → SRH service utilization), and **Path 3** (stigma → PSS → Self-efficacy → SRH service utilization). The indirect effect of SRH-related stigma on SRH service utilization via the three paths accounted for 17.01%. These results support hypothesis 3 (Table 4 and Figure 3).

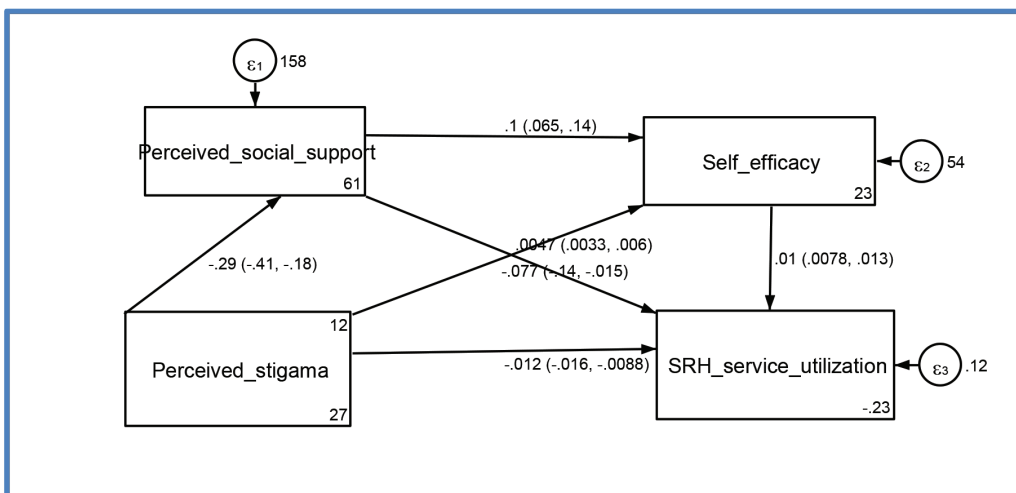


Figure 3: The chain mediation role of social support and self-efficacy in the relationship between perceived stigma and SRH services utilization in Gamo Zone, South Ethiopia Regional State, 2023.

Table 4: Single and chain mediation role of social support and self-efficacy in the relationship between perceived stigma and SRH services Utilization in Gamo Zone, South Ethiopia Regional State, 2023.

Mediating Variables	Effect	Estimates (β \neg)	Bootstrap Std. Err.	Boot CI		P-value	Relative Effect Value
				upper	lower		
Perceived social support	Direct effect	-0.0130	0.0024	-0.0179	-0.0082	0.0001	88.44%
	Indirect effect	-0.0017	0.0004	-0.0026	-0.0007	0.001	11.56%
	Total effect	-0.0147	0.0025	-0.0019	-0.0098	0.001	
Self-efficacy	Direct effect	-0.0135	0.0017	-0.0168	-0.0100	0.0001	91.84%
	Indirect effect	-0.0012	0.0005	-0.0022	-0.0002	0.022	8.16%
	Total effect	-0.0147	0.0019	-0.0186	-0.0107	0.0001	
Chain mediation role	Direct effect	-0.0122	0.0018	-0.0157	-0.0088	0.0001	82.99%
	Indirect effect	-0.0025	-0.0005	-0.0034	0.0015	0.0001	17.01%
	Total effect	-0.0147	0.0018	-0.0181	-0.0112	0.0001	

DISCUSSION

This study aimed to examine the chain and single mediation roles of self-efficacy and PSS in the association between the utilization of SRH services and SRH-related stigma among adolescents in South Ethiopia. The results revealed that SRH-related stigma was negatively correlated with PSS, SRH service utilization and self-efficacy. The association between SRH-related stigma and SRH service utilization was partially mediated by self-efficacy and perceived social support. The chain mediation model revealed that PSS and self-efficacy sequentially mediate the effect of SRH-related stigma on SRH service utilization.

The stigma associated with SRH is negatively correlated with SRH service utilization, PSS, and self-efficacy. These findings are consistent with those from other studies documenting the role of SRH-related and other types of stigma^{16, 27, 28}. These findings highlight the need to design strategies to improve adolescents' use of SRH services. Additionally, exploring alternative strategies for managing and mitigating the consequences of SRH-related stigma may be a promising approach.

The findings of this study showed that the association between SRH-related stigma and SRH service utilization was partially mediated by perceived social support. The results of previous

studies support this finding^{18, 21, 28}. These findings highlight the need to design interventions to create a supportive environment focusing on PSS for adolescents to increase their resilience to stigma and the use of SRH services.

The association between SRH-related stigma and SRH service utilization was partially mediated by self-efficacy, consistent with previous studies showing that individuals with higher self-efficacies are less vulnerable to stigma and are better able to get things done^{29, 30}. The finding implies the need to build adolescent self-efficacy.

Furthermore, the chain mediation analysis showed that PSS and self-efficacy sequentially mediated the effect of SRH-related stigma on SRH service utilization. A previous study also reported that PSS and self-efficacy are sequential mediators of the association between HIV-related stigma and HIV self-management²¹. Likewise, previous evidence suggests that focusing on enhancing self-efficacy and social support can have a positive impact on adolescent behavior^{18, 23}. This might be because people with less perceived stigma initially perceive more social support and then increase their self-efficacy, thus encouraging the use of their SRH services.

CONCLUSION AND IMPLICATION OF STUDY

The current study findings revealed that SRH-related stigma was negatively correlated with PSS, SRH service utilization, and self-efficacy. The association between SRH-related stigma and SRH service utilization was partially mediated by PSS and self-efficacy. Furthermore, the chain mediation model revealed that PSS and self-efficacy sequentially mediated the effect of SRH-related stigma on SRH service utilization. The finding implies that stigma related to SRH poses a major threat to utilized services in the study area. Urgent intervention targeting on “3S” stigma, social support, and self-efficacy is needed to improve adolescent SRH service utilization in Ethiopia.

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