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Research Article

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A Mixed Method Study on the Role of Comprehensive Sexuality Education on Sexual and Reproductive Health Decision-making Among Adolescents in Mchinji, Malawi

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Abstract

In low-resource settings like Mchinji, Malawi, where healthcare access and accurate sexual and reproductive health (SRH) information are limited, adolescents encounter challenges in making informed decisions about their sexual and reproductive well-being. While comprehensive sexuality education has been recognized as an effective approach to addressing SRH challenges globally, there is little evidence to suggest that CSE delivered through youth clubs in Mchinji address adolescent SRH needs, thus raising questions about its relevance. The study therefore assessed SRH knowledge, barriers and facilitators of adolescents exposed to CSEs. Understanding the factors influencing adolescents' SRH decision-making, as well as the facilitators and barriers to perception, is crucial for developing effective CSE interventions and policies.

The data collection utilized a mixed-methods approach, including quantitative and qualitative methods, with a sample of adolescents aged 10-19 who had been exposed to CSE through youth clubs in Mchinji from 2020 to 2023. Quantitative methods assessed adolescent SRH knowledge, explored their behaviors and perceptions of SRH and CSE, and identified specific barriers and facilitators of CSE. Qualitative methods, including focus groups, gathered adolescent perceptions of how CSE influenced their SRH behaviors.

The study found that adolescents exposed to CSE displayed high levels of SRH knowledge and had both positive and negative perceptions of SRH and CSE. Adolescents in youth clubs identified both facilitators and barriers to SRH, with facilitators outweighing barriers. However, the results indicated poor SRH behaviors, suggesting potential gaps between knowledge and practices. Nevertheless, the study concludes that CSE delivered through youth clubs in Mchinji has a positive influence on adolescents' SRH decisions.

Keywords: Adolescents, Comprehensive Sexuality Education, Sexual and Reproductive Health, Behaviors and Perceptions.

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Introduction

Empirical data from Sub-Saharan Africa (SSA) suggests that a high proportion of adolescents aged 15-19 years are sexually active, hence are likely to be at risk of reproductive health challenges which include early and unwanted pregnancies, induced abortions, sexually transmitted infections (STIs) including Human immune Deficiency Virus (HIV) infections among others [1]. Like many LMIC in Africa, one fifth of Malawi's population is between 10-19 years and approximately six in ten 15–19-year-olds have ever had sex while 10% of 15-24 years olds have had two or more sexual partners. However, less than 40% of people who are sexually active use condoms [2]. For instance, the proportion of pregnancies among the 15–19-year-olds in Malawi is at 29% (Youth friendly health services [YFHS] strategy, 2020), confirming the heightened vulnerability of the sexual and reproductive health (SRH) and well-being of a significant number of adolescents in Malawi. In Low- and

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Middle-Income Countries (LMIC) like Malawi, and especially in rural set ups such as Mchinji, adolescents tend to bear the heaviest SRH challenges. Informed sexual and reproductive health decisions around bodily autonomy, including whether to have sex or not, contraception use or access to health care can enhance adolescents' capabilities to move away from this damaging trajectory to better and desired SRH behaviors and outcomes. Comprehensive Sexuality Education (CSE) has emerged as a recognized approach to address these challenges and promote positive SRH outcomes among adolescents [3].

In low-resource settings, such as Mchinji, Malawi, where access to healthcare and accurate SRH information is limited, adolescents continue to face unique challenges in making informed decisions regarding their sexual and reproductive well-being. For instance, 49% of girls in Mchinji get married by the age of 18 years, it is also reported that most youth cannot effectively communicate to their peer on issues of HIVI/AIDS including SRH. To this end Ministry of Health and partners in the reproductive health field introduced CSE in youth clubs in Mchinji in efforts to address SRH challenges faced by adolescents in the district.

Despite SRH interventions, the district continues to register poor health indicators among adolescents and young people implying that a high proportion of adolescent in Mchinji display poor SRH behaviors which have led to poor health outcomes. The study therefore explored adolescent SRH perceptions and behaviour in selected youth clubs in Mchinji Scholars have also reviewed the evidence of the effectiveness of CSE in Sub-Saharan Africa, including countries like Malawi. However, it is imperative for such programs to be efficient in addressing adolescent SRH challenges. Bhana et al. highlights the need for rigorous evaluations and emphasizes the importance of context-specific, comprehensive, and rights-based approaches to CSE [4]. The study purpose therefore was focused on investigating the role of Comprehensive Sexuality Education (CSE) on sexual and reproductive health (SRH) decisions among adolescents from youth clubs in Mchinji. This endeavor was imperative as it attempted to provide an in depth understanding of CSE messaging and the context which these messages are delivered in relation to desired SRH outcomes. By evaluating the impact of CSE on Adolescent SRH knowledge, perceptions and SHR behaviors such as abstinence, contraception use, voluntary testing and SRH information sharing among others, the study intention is to contribute to evidence-based practices and policy recommendations for improving adolescent SRH outcomes in the local context.

To achieve the purpose of the study influence of adolescents' SRH knowledge on positive SRH behaviors was examined, adolescents' perceptions towards Comprehensive sexuality education were explored and SRH facilitators and barriers on effective adoption of positive SRH behaviors among adolescents were identified. The specific research questions that the study aimed to address were firstly, what is the relationship between adolescents' SRH knowledge and positive SRH behaviors, and secondly what role do adolescent perceptions on CSE have on their SRH behavior and decision making?

By integrating two theories, namely the Social Cognitive Theory and Theory of Planned Behavior, the combined theoretical framework provided a comprehensive understanding of the factors that influence adolescents' SRH decisions. The framework acknowledges the importance of social influences, observational learning, self-efficacy, attitudes, subjective norms, and perceived behavioral control in shaping adolescents' intentions and behaviors related to SRH. This theoretical foundation was used to guide the design of the research methodology, data collection, and analysis, facilitating a comprehensive exploration of the research objectives and contributing to the development of effective interventions for promoting positive SRH behaviors among adolescents in Mchinji, Malawi

The literature reviewed found the association of SRH knowledge and SHR behaviors. For instance, a systematic review by Santelli et al. found that comprehensive programs significantly increased the likelihood of abstinence among VYA [5]. Similar studies revealed the association of exposure to SRH knowledge with contraception use and voluntary testing and counselling (VCT) among adolescent. Substantial reviews on adolescent perceptions towards SRH behaviours, for instance literature has shown that adolescent perceptions of SRH behaviours is heavy determined by social and cultural norms. It is therefore important to note more studies are required to identify how contextual factors influence SRH behaviours. The literature review has also noted insufficient studies on adolescents' engagement in research and their perspectives on feasibility and relevance of SRH education. The role of SRH facilitator and barriers to adolescent SRH behaviours cannot be over emphasized, the role of parental support has been highlighted as a critical facilitator while poor access to SRH services has been identified as one of the significant barriers to adolescent adoption to SRH behaviours.

Overall literature findings have shown limited research on CSE effectiveness in different context such as out of school and insufficient studies on localized research for CSEs effectiveness to inform policy and programme decisions. Until robust research is conducted, it remains uncertain whether CSE programs delivered through youth clubs can match the impact of school-based ones, making it crucial to evaluate these programs and optimize them for the adolescents they aim to serve. The research study therefore intends to contribute to the existing body of knowledge on the contextual relevance of CSE messages on adolescent SRH decision making.

Methods

Study Deigns and Sample

The study utilized both qualitative and quantitative methods to collect data using Focus Group Discussions (FGDs) and 5 Likert scale questionnaire respectively. The specific mixed method used in the research is the convergent -embedded mixed design where both quantitative and qualitative data collection was done concurrently, followed by a separate analysis of the two data sets. The target population was male and female youth club members aged 10-19 years old, exposed to CSE and selected from TA Mlonyeni, Dambe and Mkanda in Mchinji District. Individuals below 10 years or above 19 years were excluded from the study.

Sample Size and Recruitment

The sampling frame for both the quantitative and qualitative

study was obtained with the help of youth group officials and information for adolescents completing CSE in youth clubs which is housed on a database running on KOBO data management system at the office of the district youth Officer. The quantitative sample size of 250 was determined using Cochran's formula Where n = sample size, P = estimate of percentage (50%= 0.5) [Representing maximum possible variation] [These are standard figures] e=desired level of sampling error (±10%=0.1) (+-5%) [Represents the precision level. Z = desired degree of confidence (95%=1.96) [Standard]. Whiles a non- probability technic, using purposive sampling method was used to select participants for the qualitative piece of the study, sample size of 30 was determined by the principle of saturation. The study's population was selected from youth clubs' members Adolescent boys and girls, aged 10-19 years who were exposed to CSE between 2020-2023 and were actively engaged in youth clubs within the identified youth clubs in Mchinji district. Participants below 10 years or above 19 years and not a resident in the assessment area were excluded from the study.

Tools and Data collection

The quantitative data, the study used a structured questionnaire, drafted based on existing scales and adapted to the specific context of Mchinji and explicit study objectives. A 5-point Likert-scale questions was used to examine the influence of adolescents' SRH knowledge on SRH Behavior. Qualitative data was collected through focus group discussions with a subset of participant purposively selected. The research used an in-depth interview guide with a set of open- ended questions, the guide had two main questions primarily meant to collect perceptions on what SHR messages identify with CSE curriculum, relevance of the CSE messages, and to what extent these messages influence their SRH decisions and any identified gaps in the messages and the delivery of the CSE messages. Quantitative data was collected through a structured questionnaire, using electronic devices for a minimum of 25 minutes per questionnaire. Qualitative data was collected using a focus group discussion guide administered by the research and one research assistant, data was audio-recorded and transcribed verbatim for analysis. Both tools were translated to the local language Chichewa to ensure context reliability additionally pretests for the questionnaire and FGD were done by conducting practice interviews with the data collectors during the training.

Data Analysis and Management

Descriptive statistics where be computed to summarize the participants' demographic characteristics, statistical tests (t-test, ANOVA, Pearson correlation, regression stepwise) were used to explore association between study variables of SRH knowledge, behaviors, facilitators, barriers and CSE perception of the study population. To ensure internal consistency of the instrument, reliability analysis was conducted using Cronbach's alpha and the results were acceptable, with Cronbach alpha levels ranging from 0.71 to 0.75. Qualitative data was analyzed using Clarke and Braun thematic analysis. The study ensured familiarity with the transcribed data with support from the volunteer research assistant. Codes were generated by conducting inductive analysis, and excel was used to code and identify themes related to perception of adolescents on CSE / SRH knowledge, The identified codes were examined and organized into broader and significant themes which were later consolidated and a write up of the final themes was done. All variables were fully labeled along with corresponding value codes in English. The dataset included all the necessary information to ensure enough information for data analysis without referring back to the questionnaire. Data quality steps including checking the questionnaire for internal consistency (in accordance with a scrutiny note), filter errors, appropriate coding for non-response or missing values, values that fall out of range, and other logical checks were done. Original data set have been maintained for record and copies of cleaned data in SPSS software format have also been maintained. Qualitative data information was audio-recorded, transcribed, and translated into English. Thematic analysis (TA) was be used to analyze and code the data using a Microsoft excel.

Ethical Considerations

This study demonstrated a robust approach to ethical considerations, encompassing various levels of approval and consent. Approval was be obtained from Malawi University for Business and Applied Science (MUBUS) formally the Polytechnic. The study further got authorization and approvals from Mchinji District research committee which is comprised of representatives from the district council department for youth and the Director of Health and Social Services for Mchinji District. At National level, ethical review of the protocol was submitted to National Health Science research committee who later referred the protocol to the National Committee on Research in the Social Sciences and Humanities under the Ministry of Health and final approval was granted by the committee. Consent and Assent was sought from all participants in the study including respective guardians.

Results

The broad objective of the study was to assess the Effect of Comprehensive Sexuality Education on Sexual and Reproductive Health Decision-Making among adolescents, in Mchinji. A mixed method approach was used to gather insight to address the specific objectives. A five likert scale questionnaire was used to collect qualitative data while a FGD guide containing a set of open-ended questions was used so as to collect CSE perspectives for adolescents.

The main aim of the qualitative data collection in this study was to explore adolescent perceptions on Comprehensive sexuality education (CSEs) by collecting in-depth information from adolescents. The quantitative study enlisted 30 adolescents (18 Females and 13 Males) between the ages of 10-19 years from TA Dambe (n =12), Mlonyeni (n= 8) and Mkanda (n= 10) exposed to CSEs through respective youth clubs. Three main themes were identified from the process namely positive perceptions of the CSE content, negative perceptions of the CSE content and lastly inadequacies in delivery of CSEs.

Demographic Characteristics of the Study Sample

Out of the total sample size of 251 respondents, 99.2% (n = 249) expressed their willingness to participate. The response rate is deemed credible, satisfactory, and representative, as it aligns with Mugenda and Mugenda's (2008) guidelines that a response rate

of 70% or higher is excellent, 60% is good, and 50% is adequate for analysis and reporting. A balanced gender representation with 45.4% (n = 113) identified as male and 54.6% (n = 136) as female. majority (56.2%) were within the 15-19 age group and 43.8% (n = 109) in the 10-14 age group. 9.2% of the sample reported to have ever had a child with over 90% reporting none. Majority of participants 94% (n = 235) attended primary education while 5.6% (n = 14) attended secondary education. On marital status 56.2% (n =140) reported being not married and not in a relationship, 39.8% (n = 99) indicating being not married but in a relationship and a minimal number (4.0%) reporting being married. population sample 43.8% (n = 109) reported to have residence in Traditional Authority Mkanda, with the other half 33 % and 23.2 residing in Traditional Authority Dambe and Mlonyeni respectively.

Table 1: Demographics of Sample for quantitative survey (n = 249)

Demographic Factor	Sub-groups	Frequency	Percentages
Gender	Male	113	45.4
	Female	136	54.6
Age	10-14 years	109	43.8
	15-19 years	140	56.2
Parity	Yes	23	9.2
	No	226	90.8
Education	Primary	235	94.4
	Secondary	14	5.6
Marital Status	Married	10	4.0
	Not Married (in a relationship)	99	39.8
	Not Married (Not in a relationship)	140	56.2
Residence (TA)	Dambe	82	33.0
	Mloyeni	58	23.2
	Mkanda	109	43.8

Levels of Knowledge, Behaviors, Perception, Barriers and Facilitators

The mean score for all study variables except for SRH behavioral variable for the one sample t-test run where significantly above 3.0. Indicating that study participants had SRH knowledge, and SRH perceptions on facilitators and barriers and on the other side, did not practice the SRH behaviors.

Demographic Influence on SRH Knowledge, Behaviors, Perceptions, Facilitators and Barriers

Independent t- test and one way ANOVA analysis was used to make statistical interpretations on significance, means, and variability on the demographic influence on the five study variables. Independent t-test run, on gender, there was a significant difference in genders (See Table 2) on SRH knowledge and CSE perceptions. The p-value of 0.047 and 0.019 respectively was less than the significance level of 0.05, suggesting a significant difference in SHR Knowledge and CSE perceptions between males and females, with male (M = 3.53; SD 0.46) to be higher than females (M = 3.41; SD = 0.49) on knowledge and on CSE perceptions. On age disparities (Table 2) significant differences ($p<0.005$) across the two age groups (10-14yrs and 15-19yrs) were observed on all five variables (SRH Knowledge, behaviors, facilitators and barriers as well as CSE perceptions). The results indicated that 15-19yr olds have more SRH knowledge (M = 3.52; SD 0.61), practice SRH behaviors (M = 2.75; SD 1.90), have higher CSE perceptions (M = 4.09; SD 0.50) and are able to identify more SRH facilitators (M = 3.97; SD 1.56) and barriers (M = 3.42; SD 0.72) than their 10-14 year olds counterparts ((M = 3.39; SD 0.44; M = 1.83; SD 0.77; M = 3.67; SD 0.59; M = 3.71; SD 0.69; M = 3.22; SD 0.62 respectively). Concerning the Educational status of respondents (Table 3) there was significant differences in CSE perceptions (t-value = -2.484, df = 247, p-value = 0.014) and SRH behaviors (t-value = -5.877, df = 247, p-value = 0.000) based on education status, with individuals with secondary education generally having higher CSE perceptions (M = 4.27; SD 0.55) and engaging in more SRH behavior (M = 3.72; SD 0.61). On parity, significant differences in means on respondents' parity and SRH behaviors where observed. The results showed that study respondents who do not have children (M = 2.27; SD 0.93) practice SRH behaviors compared to those that have children (M = 3.12; SD 0.97)

Concerning Marital status of respondents, the results of the ANOVA test indicated a significant difference among the 3 marital status levels of respondents with SRH knowledge, (F (2,246) = 5.23, p-value = 0.006), SRH behaviors (F (2,246) = 20.9, p-value = 0.000) and SRH facilitators, (F (2,246) = 6.05, p-value = 0.003). The post hoc comparison using Tukey test on SRH knowledge showed that the mean score for respondents not married but in relationship to be significantly higher than those not married and not in a relationship (MD = -0.202, p-value = 0.004). On SRH facilitators the significant mean score between Not married and not in a relationship was also significantly higher than those married (MD = 0.201, p-value = 0.028) and those not married but, in a relationship, (MD = 0.080, p-value = 0.019). Bonferroni test on SRH behavior the mean difference across all levels of the respondent's relationship status was significant at $p < 0.01$.

Table 2: Results showing t-test on gender and age differences (n=249)

Variable	Gender							Age						
	Female		Male					10-14yrs		15-19yrs				
	M	*SD*	*M*	*SD*	*t*	*df*	*p-value*	*M*	*SD*	*M*	*SD*	*t*	*df*	*p-value*
SHR Knowledge	3.41	0.49	3.53	0.46	-1.996	247	0.047	3.39	0.44	3.52	0.61	-2.207	247	0.022

CSE perceptions	3.83	0.58	4.00	0.55	-2.362	247	0.019	3.67	0.59	4.09	0.50	-6.029	247	0.000
SRH Barriers	3.35	0.65	3.32	0.71	.310	247	0.757	3.22	0.62	3.42	0.72	-2.230	247	0.027
SRH Facilitators	3.82	0.65	3.91	0.58	-1.136	247	0.257	3.71	0.69	3.97	1.56	-3.347	247	0.001
SRH Behaviors	2.29	1.01	2.43	0.91	-1.168	247	0.244	1.83	0.77	2.75	1.90	-8.447	247	0.000
		.												

Table 3: Results showing t-test on Education status and parity differences (n=249)

	Education							**Parity**						
	Primary		Secondary					Yes		No				
Variable	*M*	*SD*	*M*	*SD*	*t*	*df*	*p-value*	*M*	*SD*	*M*	*SD*	*t*	*df*	*p-value*
SHR Knowledge	3.46	0.48	3.54	0.61	-0.609	247	0.543	3.46	0.66	3.46	0.46	-0.047	247	0.963
CSE perceptions	3.88	0.57	4.27	0.55	-2.484	247	0.014	4.07	0.59	3.89	0.58	1.466	247	0.144
SRH Barriers	3.32	0.67	3.56	0.89	-1.040	247	0.299	3.36	0.86	3.33	0.67	0.226	247	0.821
SRH Facilitators	3.85	0.63	3.94	0.56	-0.517	247	0.605	4.00	0.54	3.84	0.63	1.156	247	0.249
SRH Behaviors	2.27	0.92	3.72	0.61	-5.877	247	0.000	3.12	0.97	2.27	0.93	4.164	247	0.000

Role of Knowledge, Perceptions, Barriers, and Facilitators on behaviors

The Pearson correlation coefficient analysis technique was used to evaluate the strength and direction of the linear relationship between SRH behaviors and SRH knowledge, facilitators, and barriers and CSE perceptions. The correlation results revealed the following significant relationships among the analyzed variables, a positive correlation was found between knowledge on SRH and SRH behaviors ($r = 0.237$, $p < 0.01$), indicating that individuals with higher knowledge in SRH tend to exhibit healthier sexual and reproductive behaviors. Additionally, positive correlations were observed between SRH perceptions and both knowledge on SRH ($r = 0.158$, $p < 0.05$) and SRH facilitators ($r = 0.414$, $p < 0.01$). The results suggested that individuals with positive perceptions regarding SRH where more likely to possess comprehensive knowledge about it and perceived more facilitators contributing to sexual and reproductive well-being. SRH barriers exhibited a minimal association with SRH knowledge, perceptions, and behaviors. This implies that the presence of barriers did not necessarily correlate strongly with individuals' knowledge or perceptions about SRH or their actual behaviors.

The stepwise multiple regression was further used to select predictors of SRH behaviors. In multiple regression. In this study, four independent variables were tested, with each model including different predictors. (See Table 2). The prediction model was significant fit $F(1,247) = 14.50$ $p < 0.000$. This accounted for 15% ($R2 = 0.150$ of the behavior change amongst the adolescent. The prediction results showed that barriers, knowledge and CSE perceptions were predictors of SRH behaviors. In the first model, SRH barriers emerged as a significant predictor, with a positive unstandardized coefficient of 0.394 ($p < 0.001$) and a standardized coefficient (Beta) of 0.280. The second model added SRH knowledge as a predictor alongside SRH barriers, both of which remained statistically significant ($p < 0.001$), with standardized coefficients of 0.275 and 0.231, respectively. The third and final model introduced CSE perception as an additional predictor with positive unstandardized coefficient of 0.234 ($p < 0.021$) and a standardized

Table 4: Stepwise regression results for SRH behavior (n=248)

		Unstandardized coefficients		**Standardized Coefficients**		
	Model	B	Std Error	Beta	t(248)	p-value)
1	SRH barriers	0.394	0.086	0.280	4.583	0.000
2	SRH Barriers	0.387	0.084	0.275	4.626	0.000
	SRH knowledge	0.459	0.118	0.231	3.892	0.000
3	SRH Barriers	0.350	0.085	0.248	4.140	0.000
	SRH knowledge	0.416	0.118	0.210	5.514	0.001
	CSE Perception	0.234	0.101	0.141	2.317	0.021

Discussion

The overall study aim was to determine the influence of Comprehensive Sexual Education (CSE) on Sexual Reproductive Health (SRH) decisions amongst adolescents in youth clubs in Mchinji by examining adolescents' SRH knowledge on positive SRH behaviours, exploring the adolescents' perceptions towards Comprehensive sexuality education and assessing the role of facilitators and barriers on effective adoption of positive SRH behaviors among adolescents.

The study found that adolescents exhibited high levels of SRH knowledge, positive perceptions of CSE and perceived SRH facilitators. The study results tally with UNFPA endorsement that CSE programs encourage knowledge acquisition and information sharing among adolescents. At the same time Mathews et al. highlighted that well-designed CSE interventions significantly increased knowledge about STIs and reproductive health among adolescents. Even though quantitative findings showed that adolescent generally had positive perceptions of Comprehensive Sexuality Education (CSE), as evidenced by high mean score of 3.90, the study through, in-depth probing highlighted how some respondents had positive perceptions while others had negative perceptions of CSEs. The study findings are also consistent with previous studies which found disparities in quantitative and qualitative findings wherein participants indicated positive SRH perceptions in the quantitative analysis while displaying negative perception in the qualitative analysis [6,7]. The contrasting views indicated a diversity of beliefs and attitudes among adolescents regarding the influence of CSEs on sexual behaviors, as well as parents and community perceptions on CSEs. The theoretical framework of this study, which incorporates Social Cognitive Theory (SCT) and the Theory of Planned behavior (TPB), can help interpret these findings. The negative influence perspective might be influenced by observational learning and societal norms, while the positive influence perspective aligns with the idea of attitudes and knowledge shaping behavioral decisions.

Demographic factors play a significant role in shaping patterns of sexual and reproductive health (SRH) and influencing the outcomes of SRH studies. Kumi-Kyereme study findings suggest that gender differences exist in SRH knowledge and CSE perceptions, favoring males in both cases [8]. The higher SRH knowledge among males might imply a need for targeted interventions or educational strategies for females to enhance their understanding of sexual and reproductive health. The differences in CSE perceptions could be indicative of varying attitudes and beliefs towards comprehensive sexuality education, highlighting the importance of tailoring educational approaches to different gender perspectives [9].

Similarly, older adolescents (15-19 age group) generally exhibited higher levels across all variables (SRH knowledge, behaviors, CSE perceptions, facilitators, and barriers) compared to their younger adolescents' counterparts (10-14 age group). These findings are consistent with studies that attest to the differences in development needs and characteristics of the two age categories hence observed disparities on their SRH knowledge, behaviors, perceptions as well as barriers and facilitators [10]. The findings suggest that there is a developmental progression in adolescents' SRH knowledge, behaviors, and perceptions as they move from the younger to the older age group.

Both education status and parity of respondents had an effect on CSE perceptions and SRH behaviors. The study reveals that higher levels of education, specifically secondary education, are associated with more favorable perceptions of Comprehensive Sexuality Education additionally significant difference in SRH behaviors based on educational status were noted implying that individuals with secondary education exhibited more positive Sexual and Reproductive Health behaviors compared to those with lower educational backgrounds. This is consistent with a number of studies that have shown that low levels of education or uneducated status of adolescents predispose them to poor SRH perceptions and behaviors [6,7,11].

Significant differences in means on respondents' parity and SRH behaviors were registered in the study showing that study respondents who do not have children practice SRH behaviors compared to those that have children. This can be the case since adolescents with children may face additional challenges related to parenting responsibilities and may be more focused on child-rearing and may have less time or resources to devote to their own sexual health while risk perception towards sexual activity and future aspirations around education may be contributing factors to practicing of sexual behaviors of adolescent without children.

Regarding marital status, the study findings suggest that there are significant differences in self-reported health (SRH) knowledge, SRH behaviors, and SRH facilitators among respondents with different marital status levels. The results provided valuable insights into how marital status influence individuals' health-related knowledge, behaviors, and the factors that facilitate their sexual and reproductive health. The Tukey post hoc comparison revealed that respondents who were not married but, in a relationship, had significantly higher SRH knowledge scores compared to those who were not married and not in a relationship. This infers that being in a relationship, even without formal marriage, is associated with higher levels of SRH knowledge.

Notably, through the regression analysis, positive correlations were identified between knowledge on SRH and SRH behaviors denotes the importance of education and awareness in promoting healthier sexual and reproductive practices. The study suggests that individuals with a higher level of knowledge in SRH are more likely to engage in behaviors conducive to their sexual and reproductive well-being. Other studies have also shown positive correlation between SRH knowledge and SRH behavior the positive correlations observed between SRH perceptions and both knowledge on SRH and SRH facilitators emphasize the interconnectedness of individuals' perceptions, knowledge, and the availability of supportive factors [5,12]. The results imply that those with positive perceptions about SRH were more likely to possess comprehensive knowledge and acknowledge facilitators contributing to sexual and reproductive well-being

The study incorporated four independent variables, namely SRH barriers, SRH knowledge, and Comprehensive Sexuality Education (CSE) perceptions, to examine their impact on behavior change. The overall prediction model demonstrated statistical significance, suggesting that the combination of these predictors was effective in explaining 15% of the variance in adolescent SRH behaviors. This indicates that the selected variables collectively contribute to understanding and predicting changes in SRH behaviors among the studied populations [13].

These findings collectively emphasize the multifaceted nature of factors influencing SRH behaviors, emphasizing the need for targeted interventions and educational programs that address

barriers, enhance knowledge, and promote positive perceptions of comprehensive sexuality education among adolescents [13,14].

Study Limitation

The study has identified three limitations the first being that reliance on sexual behavior self-reporting by study participants may have introduced social desirability bias where some respondents could have over or under reported respective sexual behaviors. To mitigate this, the study ensured anonymity of responses during data collection process, a mixed method approach was also used to triangulate and enhance findings. Secondly since findings are based on a specific sample, and generalization to other populations has to be taken cautiously. Considerations to replicate studies to validate the current findings in different settings or with diverse populations, in efforts to strengthen the robustness of the results are therefore recommended. Lastly the cross-sectional nature of the study limits the ability to establish causation between adolescent SRH education and CSE perceptions or SRH behaviors, longitudinal studies to explore how variables evolve over time are recommended to establish causal relationships between CSE information and SRH perceptions and behaviors [15,16].

Conclusion and Recommendations

The study findings shows that Comprehensive Sexual Education (CSE) as model delivered in youth clubs in Mchinji has a positive influence on Sexual Reproductive Health (SRH) decisions of adolescents, by encouraging and empowering their SRH practice.

Findings have shown that adolescents in youth clubs have SRH knowledge attained through CSEs and despite some negative perceptions on CSE, adolescents also value CSE and have identified the benefits it brings. This is aligned with previous research supporting the positive impact of comprehensive programs on knowledge, attitudes, and behaviors related to sexual health.

SRH Knowledge and positive SRH perceptions have not necessarily translated to SRH behavior changes of adolescents 10-19 years in Mchinji. However, study findings have reiterated the importance of SRH education and awareness in promoting healthier sexual and reproductive practices as confirmed by the positive correlation between SRH behaviors with SRH knowledge and perceptions. Similarly positive correlations between CSE perceptions with SRH knowledge and SRH facilitators were noted underscoring the role of perceptions on attainment of SRH Knowledge and acknowledgement of SRH facilitators.

The study therefore concludes that encouraging comprehensive sexual education in youth clubs of Mchinji is one of the best ways of ensuring that knowledge and perceptions towards sexual and reproductive health practices are fostered and sustained among adolescents in Malawi.

To provide legitimacy to CSE, efforts to adapt and implement CSE in a population should be preceded by research to determine how these populations envision, experience and verbalize their sexuality; in what social and mental structures it is shaped; and existing educational interventions. Government in collaboration with communication experts and NGOs would ideally put these recommendations into perspective.

Health practitioners should work with communication experts, to explore other forms of disseminating information on sexuality or facilitating discussions e.g. through digital media, traditional and contemporary songs or art in order to reach out-of-school youth. While considerations should also be made to involve adolescents to co create a CSE curriculum like the yathu-yathu program in Zambia.

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