

STUDY PROTOCOL

How does integration of comprehensive sexuality education in schools shape sexuality decisions among adolescents in Zambia?: A community based participatory research driven realist evaluation study protocol

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ABSTRACT

Introduction: Many adolescents in low- and middle-income countries face challenges related to sexual and reproductive health and rights, which are exacerbated by gender inequalities. One approach to address these issues is the integration of Comprehensive Sexuality Education (CSE) in schools. However, the process of effectively implementing CSE in these settings is often suboptimal. There is a significant lack of research exploring the specific conditions and methods that effectively lead to enhanced knowledge and improved decision-making in sexuality and gender equality among adolescents through CSE. This realist evaluation protocol will address this gap by exploring how the nature and pattern through which CSE is provided has a) changed adolescents' knowledge regarding sexuality and gender relations and b) shaped adolescents' capacity to make positive decisions.

Methods: This study uses a multiple-case design, combining realist evaluation with participatory action research methods to explore Comprehensive Sexuality Education (CSE) integration across multiple levels in Eastern province—from provincial to community levels. Data collection will occur in phases, utilizing interviews, photovoice, drawings, reviews, and observations. The study involves several key steps: 1) identifying challenges to CSE integration, 2) creating an initial theory or action plan that explains how CSE promotes positive decisions among adolescents about sexuality, 3) testing this theory through case studies, and 4) refining the theory and formulating recommendations to improve future CSE integration. Additionally, the study will document informal, contextual, and horizontal factors (ICAMO configurations) that influence the integration of CSE at the school level and affect adolescents' understanding and decision-making regarding sexuality and gender relations.

Discussion: This study will contribute to the development of strategies for effectively facilitating the integration process of similar programmes within the school system. The study will further contribute to methodological development in participatory research driven realist evaluation.

Keywords: Realist evaluation, participatory action research, comprehensive sexuality education, adolescents, Zambia

Abstract in Español at the end of the article

INTRODUCTION

Adolescents experience many specific challenges to fulfilling their needs which are distinct from those of adults due to their age (2). Sexual and reproductive health and rights (SRHR) problems are some of the challenges that adolescents in Zambia and other low and middle income countries (LMICs) experience (2). These include unwanted pregnancies, sexually transmitted infections, sexual violence and coercion as well as maternal and neonatal mortality and morbidity [2,3]. Every year, approximately 7.3 million girls below 18 years give birth in Zambia and other low and middle income countries (LMICs) [4]. About 10 million girls are married, with 46% of these being in sub-Saharan Africa [4].

Sexuality education in schools is one strategy or intervention to respond to adolescents' SRHR problems [5]. Comprehensive sexuality education (CSE) is a curriculum-based process of teaching and learning about the cognitive, emotional, physical and social aspects of sexuality [6]. It can help address SRHR challenges by equipping adolescents with knowledge, skills, attitudes and values that will empower them to: realize their health, well-being and dignity; develop respectful and pleasurable social and sexual relationships; understand and ensure the protection of their rights throughout their lives; and foster equal good gender relations (6). Sexuality education has been offered for many years in other countries such as Sweden and Norway with positive outcomes [7]. To be effective, CSE must be well integrated into the school systems. Integration includes the curricula being in line with what is internationally defined as CSE [8-10]. Further, there is need to have good implementation fidelity, including the quality teaching and good coverage of different aspects of the CSE [8, 11].

In 2014, Zambia developed and rolled out CSE to all schools [12]. This national curriculum covers several topics such as gender, SRHR, relationships, values, culture, contraceptives, and life skills [5, 13]. Meanwhile, the integration process of CSE in Zambia and other LMICs has been complex [5, 13]. A process evaluation on CSE in Zambia documented challenges with regards to teaching and acceptability of CSE in school and communities [12]. These challenges resulted into gaps in sexuality knowledge and application among adolescents such as poor decision making on sexuality matters [12]. Like other studies in LMICs, this study in Zambia did not document mechanisms that shape acquisition and application of such knowledge among adolescents.

The challenge of integrating CSE programs in schools

Studies report that most national CSE programs in LMICs including Zambia are poorly implemented. Due to poor implementation little effect is observed on adolescents' knowledge and practices regarding sexuality and gender relations [8, 11, 12]. A study on the implementation of the CSE in Zambia also showed that the implementation process has not been optimal [14-16]. In some cases, the curricula are not in line with what is

defined as CSE as it may fail to address key topics such as SRHR, sexual abuse, gender stereotypes and gender inequality, gender identity and expression, and sexual orientation [8-10]. Even when the curriculum satisfies international standards, there are challenges with implementation fidelity, the quality of the teaching is poor and coverage of different aspects of the curriculum may be low [8, 11]. In some cases, both teachers and parents disapprove of the objectives and the content of CSE programs [17]. Teachers and parents think that talking to adolescents about sexual matters will encourage them to become sexually active, which they disapprove [17]. Conflicting inter-generational discourses on sexuality between teachers and community members as well as taboos associated with discussion of sexuality [13, 18], and gender-related challenges [5, 13], have been reported to affect the acceptability of sexuality education in studies from South Africa and Botswana. Concerns that CSE is incompatible with the religious and cultural norms have been reported to affect acceptability [13, 18, 19].

There is a pressing need for further research on effective mechanisms that shape the "reach and impact as well as design, delivery, advocacy and community building" of CSE [9]. Authors such as Shiffman and colleagues point out, that "there are few studies of the politics of program adoption and implementation in low- and middle-income settings" [20]. Specifically, there is limited knowledge on the mechanisms which shape sexuality decisions among adolescents including equal gender relations in the context of CSE [10]. This research proposal aims to address this knowledge gap by adopting a community based participatory research driven realist evaluation. Adopting this approach is important as most studies on sexuality education have focused on outcomes [8-10] and not on understanding the mechanisms through which adolescents reject, adopt, or adapt the resources offered by sexuality education programmes. The realist evaluation approach which we explain in detail in the methodology section will enable us to document these mechanisms. To facilitate development of appropriate or locally relevant CSE integration processes, the study will also adopt community based participatory research (CBPR) [20, 21]. The CBPR approach is important as it places local communities at the center of the research process [20, 21]. Further, the participatory approach can, through iterative and inclusive dialogue at various levels of the research process, promote local capacity building geared towards a collective social change [20, 21].

In this paper, we present the protocol of an evaluation to explore how the nature and pattern through which sexuality education is provided has a) changed adolescents' knowledge regarding sexuality and gender relations and b) shaped adolescents' capacity to make positive decisions regarding sexuality and gender relations. Such information is essential in strengthening the integration including collaboration in implementing sexuality education in the schools and contributing to

methodological development in the area of participatory research driven realist evaluation.

The context for implementing the CSE intervention in Zambia

Zambia is a lower middle-income country located in the southern part of Africa. About 60% of the population lives below the internationally recognized poverty line, i.e. on less than \$1.90 a day. Data from the 2018 Zambian Demographic Health Survey show that adolescents and young people in Zambia face several SRHR problems. The pattern of the SRH challenges is similar across schools in all the ten provinces of Zambia. For example, one in seven female (15%) adolescents aged 15-19 years are married (or in union) compared to only 1% of their male counterparts; 21.5% of married girls aged 15-19 have an unmet need for family planning; the percentage of adolescents who have begun childbearing ranges from 6% among those aged 15 years to 53% among those aged 19 years; 6.7% have experienced sexual violence; the HIV prevalence among adolescents and young people aged 15-24 is 3.8% (5.6% among girls and young women vs 1.8% among boys and young men); maternal mortality ratio is at 252 per 100,000 live births and about 30% of the mortality is as a result of unsafe abortions of which 80% of these are among adolescents [22].

As a way of contributing towards addressing these challenges, Zambia, in 2014 developed the CSE framework and rolled it out to all schools and targeted students aged 10–24 years [12]. Sexuality education is supposed to be integrated in carrier subjects such as science, social studies, and religious education across all schools in Zambia. Teachers are the main actors who deliver CSE through carrier subjects. Health workers also help with teaching CSE. Within the communities, grandparents provide sexuality education along with cultural norms condemning discussions about sexuality except for in grandparents-grandchild relations [23]. It is also a common belief that introducing topics of sexuality to adolescents that are too young should be avoided in order not to trigger sexual promiscuity [8, 9, 11]. There are also contrasting moral based viewpoints by some stakeholders such as religious and traditional leaders regarding CSE [24]. Zambia was declared a Christian Nation in 1991, a declaration that was included in the preamble of the national constitution [21]. This declaration has given Christian morality a particularly prominent place in Zambian politics and society [21]. This declaration merges in dominant discourses and influences people's decision-making regarding morality, sexuality and reproduction [21]. The declaration is often used as a moral argument in public health discussions including whether or not to provide reproductive health services to some key populations, and adolescents. This contributes to unequal access to SRHR knowledge and services among adolescents [21]. This contrast highlights the need to explore factors that influence the provision of CSE and how it has changed adolescents' understanding of sexuality and gender relations and enhanced their

ability to make positive choices [24].

METHODS

This research project will adopt a community based participatory research driven realist evaluation which combines community based participatory research and realist evaluation approaches. By adding a participatory approach, this study builds upon the realist methodology which we adopted in the study on adolescent responsive community health systems in Zambia [2]. This approach is relevant as implementation of CSE involves multiple actors and organizations who operate in distinct administrative environments and multiple layers of hierarchy [25]. Below we start by defining the community based participatory research and realist evaluation separately and then later show how we shall combine both approaches.

Community based participatory research: As stated above, the study will adopt the community based participatory research (CBPR). In this project we adopt Susman's participatory cycle (described in detail under methods section) which has five phases, namely problem diagnosis, action planning, taking action, evaluation and specifying learning achieved [20]. In addition to teachers and parents, the adolescents/learners and health workers will also play a central role in the research process [26]. The teachers, health workers adolescents/ learners and parents will, using participatory approaches, participate in developing data collection tools, collecting data, analysis and presenting. The CBPR team will be trained and participate in data collection, analysis and presentation methods [27]. There is growing interest in participatory research because it can maximise the benefits and impact of health interventions by providing a basis for relevant context-specific and evidence-informed decision-making process [27]. Such impact is possible as the participatory approaches can promote trust between communities and researchers, improve the translation of research findings into policy and practice; and facilitate the uptake of the research findings [27].

Realist evaluation: Realist evaluation is a type of theory-driven evaluation that aims to ascertain why, how, and under which circumstances programmes succeed or fail. It is based on the work of Pawson and Tilley and focuses on how the mechanisms of change are triggered by the intervention and contextual factors that lead to observed outcomes [28]. Realist evaluation seeks to provide results that can be acted upon by decision makers. Realist evaluation begins with the formulation of the theory behind the development of an intervention, known as the programme theory. The programme theory is understood as every day, prosaic theories that explain how social problems are generated and how interventions (e.g. CSE) can help to solve them [29]. The programme theory is afterwards tested through observation of real cases where the intervention has been implemented. The programme theory connects context (C), actors (A), mechanisms (M), and outcomes (O) – creat-

ing potential ICAMO configurations. A critical element in realist evaluation is that of mechanisms. Mechanisms mediate between the concrete components of the interventions and the outcomes. According to Pawson and Tilley a mechanism is “not a variable but an account of the behaviour and interrelationships of the processes that are responsible for the change” [28]. Elucidating mechanisms has shown to be a useful way to bridge the gap between theory building and practical recommendations [30]; if we are able to identify the mechanisms that lead to positive change, they could guide scaling-up processes.

Method and steps

Drawing on the methods proposed by van Belle et al, we will follow a step-wise approach to the realist evaluation which are: situating the intervention in the context, eliciting the preliminary programme theory, testing the programme theory and refining the programme theory [30] (see Table 1). We shall embed in these realist steps, participatory research phases namely problem diagnosis, action planning, acting, evaluation and specifying learning achieved [31].

Step 1: Problem diagnosis or situation analysis: This first step which relates to the first step in realist evaluation (situating the sexuality education intervention in the context) and the first phase in PAR (problem analysis) adopts, a policy and situation analysis approach. Using this approach, existing relevant policies on sexuality education and SRHR in Zambia and related literature and documents will be collected and reviewed at national and provincial level. The province selected is Eastern Province, which includes 16 districts. Currently, Eastern Province ranks second in terms of the highest rates of SRHR challenges, particularly adolescent pregnancies and marriages.

This will be followed by qualitative interviews at national and provincial levels to analyze the successes and challenges with regards to integration of CSE in the country. This process which will be led by the research team and will provide insights of how the developers and implementers of the CSE framework conceptualize the intervention and its outcomes. It will contribute to better understanding the opportunities and challenges of CSE integration into schools from the perspectives of actors at national and provincial levels.

During this step provincial stakeholders will also select two districts (one good performing, another poor performing) which will be the focus of Step 3 below. This selection will be based on the knowledge on the level of integration of CSE into the schools. The integration level will be reflected in having all teachers trained in CSE, availability of CSE manuals and reading materials at the schools and inclusion of CSE in the school timetable. Once districts have been selected, as per the PAR approach, communication with stakeholders from the Ministry of Education, community, schools and adolescents will take place to discuss their understanding

of the CSE and jointly agree on the scope of this participatory research realist evaluation. Based on this discussion, we shall also agree on the composition of the PAR team, research training needs for the team, and capacity building workshops in data collection and analysis. It is hoped that the PAR team will consist of one teacher and two students per school. An equal number of male and female learners will be included in the PAR team. The team shall be supported by the school management team at district, provincial and national levels.

Step 2: Eliciting the preliminary programme theory and action planning: In this step, (which is about eliciting the preliminary programme theory step in the realist evaluation and action planning phase in the PAR) the PAR team will develop the programme theory (or hypothesis) to be tested. The initial theory will guide the design of empirical case studies or schools which will be explored in detail in Step 3. Based on the discussions and reviews in Step 1, we will compile an initial programme theory to explain how the developers of the CSE framework conceptualized that integration of sexuality education into the schools will shape knowledge and decision making among adolescents.). Data collected in Step 1 will be used to guide the discussion and analysis of the realist evaluation concepts intervention–context–actors–mechanisms–outcomes (ICAMOs). This will include the development of ICAMO configurations. The initial analysis of the ICAMO configurations will be conducted in workshops with stakeholders using participatory approaches such as group discussions. Through discussions in the workshops with educational managers, teachers and learners, data collection tools for testing the program theory in Step 3 will be developed.

Step 3: Testing the programme theory and acting: The third step consists of empirically testing the programme theory (under the realist evaluation process) or acting (under the PAR methodology. This step serves to indicate whether the initial programme theory stands as relevant in the light of the empirical findings. We will test the initial programme theory through an in-depth study within the schools that are implementing CSE in the two selected districts (see Step 1) by conducting a multiple case study. This step will combine action taking and evaluation phases of the PAR approach. The context (C) analysis will largely be based on documents, discussions in the workshops and interviews. The “context” here refers to the demographic, cultural and religious beliefs regarding CSE, the use of teaching materials and teachers’ motivation and type of CSE training, local political views regarding CSE, availability of NGOs and other actors supporting the delivery of CSE as well as health services environment in which CSE is implemented. Secondly, two intermediate outcomes (O) (“Knowledge on sexuality and gender levels”) and two final outcomes (“Sexuality decision making process, and gender relations”) will be measured. The outcomes will be collected through a quantitative survey and focus group discussions with adolescent learners using photo voice.

Thirdly, data will be collected to capture the mechanisms (M) that shape improvement in knowledge and capacity to make positive sexuality decisions. Such mechanisms could be related to: 1) learners/adolescents; (motivation, supportive attitude, value clarification); 2) teachers: (motivation, collaborative action, trust, co-ownership, co-production and co-learning) and 3) parents (trust in social institutions, co-ownership) and other potential mechanisms that might emerge during the study.

Step 3a: We shall start with conducting a quantitative survey to analyze the impact of sexuality education on knowledge and sexuality related decisions among adolescents including perceptions of equal gender relations. The quantitative survey will be done in 32 schools, 16 schools in each district (see Step 1 for selection of districts), 8 primary and 8 secondary or high schools. Only schools that are implementing CSE will be included in the study. We used Stata version 15 to calculate the sample size. A total of 992 participants will be recruited. The sample was arrived at by assuming that the proportion with low knowledge in sexuality and decision making are 12% and those with high knowledge are 28%. To detect this difference, fixing a sample of 31 participants from each school and interclass correlation coefficient of 0.5, the calculated total sample size is 992 participants and 32 schools to be sampled. Participants will be sampled using simple random sampling from each school.

We will also conduct mapping of CSE topics that are taught or not taught in the 32 schools and the rationale for teaching and not teaching the topics. The mapping process will also document the actors that the schools work with in implementing CSE and their roles. In addition, we shall examine factors that are likely to shape the outcomes (adolescents' knowledge regarding sexuality and gender relations and their capacity to make positive decisions regarding sexuality and gender relations) such as cultural and religious beliefs regarding CSE, local capacity to deliver CSE, availability and use of CSE materials, collaboration among actors, local networks and availability of SRH services. The mapping process will be conducted in collaboration with teachers and learners.

Step 3b: Based on the quantitative survey results as well as mapping of CSE topics and CSE stakeholder analysis in schools, we shall identify three cases or schools in each of the two sampled districts (overall total 6 schools). Only six schools will be selected to facilitate in-depth analysis of the actors, key CSE intervention components, context, mechanisms which are likely to shape the outcomes. From the cases, we shall qualitatively document the mechanisms that shape decision making among adolescents. These cases (schools)- will be selected on a theoretical replication argument, meaning that cases will be selected based on their potential to provide contrasting contexts and outcomes. In documenting the mechanisms, various qualitative methods will be used. Focus group discussions (FGDs) with parents and key informant interviews (KIIs) with teachers as well as obser-

vations will be conducted by research team. Adolescents, will collect data using participatory approaches such as mapping, stakeholder analysis workshops which will integrate photo-elicitation (or photo voice) with learners (see Table 1 for the proposed numbers of FGDs, KIIs and photo-elicitation voice interviews). Photo-elicitation is a research method that incorporates images in the interview process to elicit participants' subjective explanations [32]. Photo-elicitation has gained recognition as a way to better capture young people's attention, ease rapport and balance power differentials. Emerging research has highlighted that such methods may allow children and youth to represent their experiences in contexts of reduced stress [33], promote activism and empowerment [29] may also facilitate the construction of a bond between participants and researchers, and may promote verbalization of thoughts and emotions [32]. At the same time the photos produced in these projects are ideally suited to be seen by many different audiences (including different community groups and policymakers) – through photo exhibitions, for example –, making such methods useful tools for policy informing [34].

Step 4: Refining programme theory/ evaluation and specifying learning achieved: Step 4 of this study will combine the specification of a refined programme theory component of the realist evaluation and evaluation and specifying learning achieved phases of PAR. This step uses the findings from previous steps to enhance the understanding of how, why, for whom and under what circumstances the integration of sexuality education in schools will shape adolescents' knowledge regarding sexuality and gender relations and their capacity to make positive decisions regarding sexuality and gender relations.

The lessons will include an account of "what worked for whom in the Zambian context". The lessons (mechanisms that lead to positive change) will be used to modify integration action plans to develop an appropriate integration approach to sexuality education.

Workshops will be conducted with different stakeholders at national and district levels to disseminate and reflect on findings of the study including the integration approach and policy brief. Three different workshops with learners/adolescents, community members and professionals (staff from the Ministry of Education and health workers) will be conducted to facilitate in-depth discussions/ reflections on the study findings. The adolescents will lead the dissemination process and will be supported by the senior members of the research team. A training will be conducted with adolescents on dissemination skills prior to the dissemination. The photos taken by the learners/adolescents during the photo-elicitation will be exhibited during the workshops as an advocacy tool. The photos will also be used as a starting point to trigger further reflections in the dissemination meetings.

Time plan and implementation

Table 1 below provides the time plan for the project during the grant period, and how the project will be implemented. The PAR team will lead the research processes. The adolescents will participate in quantitative survey and lead the photo-elicitation photo voice sessions and dissemination while the senior researchers and teachers in the PAR team will lead the remaining phases of the research process.

Ethical considerations

Ethical clearance to conduct the study will be sought from the ERES, Research Ethics Committee. Informed consent will be sought from parents and care givers for

learners to participate in the study. Assent will also be sought from learners before they can participant in the study. Learners will be informed that they have the right not to participate in this study and that their decision will not affect their education. The study team will make every effort to protect confidentiality. Learners will have the right to skip questions and entire instruments if they feel that the question is not appropriate. Safeguarding confidentiality of personal data will be maintained through the use of nicknames and identity codes on all research documents. All study-related documents will be kept in a locked file cabinet in a research staff’s office. Questions will be simplified and asked both in English and local language.

Table 1. Research process.

Steps (and months)	Methods and actions	Focus of planned publications
Inception phase (Months 1-6) Step 1: Situating the intervention (sexuality education) in the context (Months 7-12)	-Seek ethical clearance -Produce information summary -Work on manuscript of research study protocol -Literature review -Documentary review -Interviews with stakeholders (20 interviews –10 at national level and 10 provincial level) -Conducting national policy and situation analysis -Identify study districts -Agreeing on the composition of the participatory research team, research training needs for the team, and training processes.	1. Protocol paper
Step 2: Eliciting the programme theory (Months 13-18)	-Analyse ICAMO configurations -Development of research implementation plan	2. Initial programme theory
Step 3: Testing the programme theory in selected cases 3a: (Months 19-22) Survey and selection of cases 3b (Months 23-33) Multiple-case study	-Quantitative survey with learners (992 adolescents/ learners from 32 schools) -Identify cases or schools Analytical multiple case-study - Participatory data collection approaches using mapping and stakeholder analysis which will integrate photo and drawings (learners/adolescents- 8-10 photo interviews per school/case) -Key informant interviews with teachers (all teachers in each of the 6 cases or schools) -Focus group discussions with parents (8 FGDs, one per school or case) -Observations in each of the 6 schools or cases	3. Cross- sectional survey 4. Photo-elicitation interviews
Step 4: Refining programme theory (Months 34-36) Bringing everything together and proposing actions	-Discussing findings and engaging professionals and young people -Workshop and photo/ drawing exhibition with i) professionals in the Ministry of Education and stakeholders working with youths, ii) community members and leaders -Final workshop to propose action	5. Revised programme theory 6. Methodological paper on participatory research driven realist evaluation

DISCUSSION

This paper describes a protocol that uses an approach that combines PAR and RE to understand how, why and under which conditions the integration of sexuality education into schools will lead (or not) to improved knowl-

edge and capacity to make positive sexuality decisions among adolescents, including more equal gender relations. There has been increased call for use of realist evaluation in SRH and community health systems research in the recent past [2, 35]. Adoption of this approach is im-

portant in community health systems research to assess real circumstances where contextual factors play an important role in shaping complex interventions which are shaped or influenced by several social and cultural factors including religious values, social and gender norms [2, 35].

This project will contribute towards filling the knowledge gap pertaining to mechanisms that shape adolescents' knowledge regarding sexuality and gender relations and their capacity to make positive decisions regarding sexuality and gender relations in the context of CSE. Knowledge in this field is essential for guiding implementers, policy makers and NGOs in effectively facilitating the integration process of similar interventions into schools. The project will also contribute towards advancing realist evaluation methodology by providing the opportunity to explore the strengths and limitations of a participatory approach to realist evaluation as realist evaluation has seldom been used in a participatory fashion. Further, the project will facilitate the integration of sexuality education into schools.

Further, it builds on our ongoing work at a district level aimed at understanding the role of teacher discretion in integrating CSE in schools under the "Fertility control and safe abortion in Ethiopia, Zambia and Tanzania" project [36]. Preliminary results, from our project focusing on teacher discretion in implementing CSE in rural Zambia, show that teachers are challenged by the CSE curriculum and there is huge heterogeneity in how they integrate it into their teaching.

Adoption of the community participatory approach through the involvement of adolescents as part of the research team is important as they rarely shape the health programs that impact their lives and health [36]. Rooted in social justice, adolescents' participation gives them unique voice, energy and insight to act as change agents. In this case, adolescents are "experts" who control the production of and distribution of knowledge [36]. Instrumental participation, which is about community participation being used as a means towards a stated end, will be prevented by ensuring that learners and teachers have a voice in deciding the content of study tools and study process. Collaboration is key in facilitating stakeholder cooperation in selecting context appropriate best practices [37-45]. The teachers and learners will also lead the mapping of the teaching of CSE at school level.

The study will most likely contribute to improving CSE practical implementation realities as well as methodological development in the area of participatory re-

search driven realist evaluation. Specific key outputs of this study will include documentation of collaboration processes of stakeholders at community level in delivering CSE; mapping of CSE topics that are taught or not taught in schools and the rationale for teaching and not teaching the topics; as well as mechanisms that a) shape or change adolescents' knowledge regarding sexuality and gender relations and b) shape adolescents' capacity to make positive decisions regarding sexuality and gender relations. The study will finally propose recommendations for how to strengthen integration of sexuality education in schools as well as document experiences and strategies for engaging adolescents in participatory research driven realist evaluation.

DECLARATIONS

Publication Consent

Not applicable.

Competing interests

The authors declare that they have no competing and conflicting interests.

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Author contributions

All authors contributed towards the study design. JZM, and AKH conceived and drafted the manuscript and all authors contributed towards revision of the manuscript. All the authors read and approved the final manuscript.

Data availability

Not applicable

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¿Cómo influye la integración de la educación sexual integral en las escuelas en las decisiones sobre sexualidad de los adolescentes de Zambia? Un protocolo de estudio de evaluación realista basado en la investigación participativa comunitaria

RESUMEN

Introducción: Muchos adolescentes de países de ingresos bajos y medios se enfrentan a retos relacionados con la salud y los derechos sexuales y reproductivos, que se ven exacerbados por las desigualdades de género. Un enfoque para abordar estos problemas es la integración de la Educación Sexual Integral (ESI) en las escuelas. Sin embargo, el proceso de implementación efectiva de la ESI en estos entornos no suele ser óptimo. Hay una falta significativa de investigación que explore las condiciones y métodos específicos que conducen efectivamente a un mayor conocimiento y una mejor toma de decisiones en sexualidad e igualdad de género entre los adolescentes a través de la ESI. Este protocolo de evaluación realista abordará esta carencia explorando cómo la naturaleza y el patrón a través de los cuales se proporciona la ESI han a) cambiado el conocimiento de los adolescentes con respecto a la sexualidad y las relaciones de género y b) moldeado la capacidad de los adolescentes para tomar decisiones positivas.

Métodos: Este estudio utiliza un diseño de casos múltiples, combinando la evaluación realista con métodos de investigación-acción participativa para explorar la integración de la Educación Sexual Integral (ESI) a través de múltiples niveles en la provincia Oriental, desde el nivel provincial hasta el comunitario. La recopilación de datos se realizará por fases, utilizando entrevistas, fotovoz, dibujos, revisiones y observaciones. El estudio consta de varios pasos clave 1) identificar los retos para la integración de la ESI, 2) crear una teoría inicial o plan de acción que explique cómo la ESI promueve decisiones positivas entre los adolescentes sobre la sexualidad, 3) probar esta teoría a través de estudios de casos, y 4) refinar la teoría y formular recomendaciones para mejorar la futura integración de la ESI. Además, el estudio documentará los factores informales, contextuales y horizontales (configuraciones ICAMO) que influyen en la integración de la ESI a nivel escolar y afectan a la comprensión y la toma de decisiones de los adolescentes respecto a la sexualidad y las relaciones de género.

Discusión: Este estudio contribuirá al desarrollo de estrategias para facilitar eficazmente el proceso de integración de programas similares dentro del sistema escolar. El estudio contribuirá además al desarrollo metodológico de la evaluación realista impulsada por la investigación participativa.

Palabras clave: Evaluación realista, investigación-acción participativa, educación sexual integral, adolescentes, Zambia

REFERENCES

- [1] Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, De Onis M, et al. Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet*. 2013;382(9890):427-51.
- [2] Zulu JM, Goicolea I, Kinsman J, Sandøy IF, Blystad A, Mulubwa C, et al. Community based interventions for strengthening adolescent sexual reproductive health and rights: how can they be integrated and sustained? A realist evaluation protocol from Zambia. *Reprod health*. 2018;15(1):1-8.
- [3] Sandøy IF, Mudenda M, Zulu J, Munsaka E, Blystad A, Makasa MC, et al. Effectiveness of a girls' empowerment programme on early childbearing, marriage and school dropout among adolescent girls in rural Zambia: study protocol for a cluster randomized trial. *Trials*. 2016;17(1):1-15.
- [4] Williamson NE. Motherhood in childhood: facing the challenge of adolescent pregnancy: United Nations Population Fund; 2013.
- [5] Francis DA, DePalma R. 'You need to have some guts to teach': teacher preparation and characteristics for the teaching of sexuality and HIV/AIDS education in South African schools. *SAHARA J*. 2015;12(1):30-8.
- [6] Dixon-Mueller R. International Technical Guidance on Sexuality Education: An evidence-informed approach for schools, teachers and health educators. Vol. I, Vol. II. JSTOR; 2010.
- [7] Kohler PK, Manhart LE, Lafferty WE. Abstinence-only and comprehensive sex education and the initiation of sexual activity and teen pregnancy. *J Adolesc Health*. 2008;42(4):344-51.
- [8] Keogh SC, Stillman M, Awusabo-Asare K, Sidze E, Monzón AS, Motta A, et al. Challenges to implementing national comprehensive sexuality education curricula in low-and middle-income countries: Case studies of Ghana, Kenya, Peru and Guatemala. *PloS One*. 2018;13(7):e0200513.
- [9] Vanwesenbeeck I, Flink I, van Reeuwijk M, Westeneng J. Not by CSE alone... furthering reflections on in-

- ternational cooperation in sex education. *Sex Educ.* 2019;19(3):297-312.
- [10] Bakaroudis M, Blum R, Hopkins J. The evaluation of comprehensive sexuality education programmes: A focus on the gender and empowerment outcomes. Unfpa. 2015.
- [11] Vanwesenbeeck I, Westeneng J, De Boer T, Reinders J, Van Zorge R. Lessons learned from a decade implementing Comprehensive Sexuality Education in resource poor settings: The World Starts With Me. *Sex Educ.* 2016;16(5):471-86.
- [12] Zulu JM, Blystad A, Haaland ME, Michelo C, Haukanes H, Moland KM. Why teach sexuality education in school? Teacher discretion in implementing comprehensive sexuality education in rural Zambia. *Int J Equity Health.* 2019;18(1):1-10.
- [13] Allen L. Denying the sexual subject: schools' regulation of student sexuality. *Br Educ Res J.* 2007;33(2):221-34.
- [14] Ngabaza S, Shefer T. Sexuality education in South African schools: deconstructing the dominant response to young people's sexualities in contemporary schooling contexts. *Sex Educ.* 2019;19(4):422-35.
- [15] Shefer T, Macleod C. Life Orientation sexuality education in South Africa: Gendered norms, justice and transformation. *Perspect Educ.* 2015;33(2):1-10.
- [16] Chavula MP, Svanemyr J, Zulu JM, Sandøy IF. Experiences of teachers and community health workers implementing sexuality and life skills education in youth clubs in Zambia. *Glob Public Health.* 2022;17(6):926-40.
- [17] Svanemyr J, Baig Q, Chandra-Mouli V. Scaling up of life skills based education in Pakistan: a case study. *Sex Educ.* 2015;15(3):249-62.
- [18] Allen L. 'Say everything': Exploring young people's suggestions for improving sexuality education. *Sex Educ.* 2005;5(4):389-404.
- [19] Chirwa-Kambole E, Svanemyr J, Sandøy I, Hangoma P, Zulu JM. Acceptability of youth clubs focusing on comprehensive sexual and reproductive health education in rural Zambian schools: a case of Central Province. *BMC Health Serv Res.* 2020;20(1):42.
- [20] Shiffman J, Kunnuji M, Shawar YR, Robinson RS. International norms and the politics of sexuality education in Nigeria. *Glob Health.* 2018;14(1):1-13.
- [21] Haaland ME, Haukanes H, Zulu JM, Moland KM, Michelo C, Munakampe MN, et al. Shaping the abortion policy—competing discourses on the Zambian termination of pregnancy act. *Int J Equity Health.* 2019;18(1):1-11.
- [22] Agency ZS. Zambia Demographic and Health Survey. 2018.
- [23] Zulu JM, Kinsman J, Hurtig A-K, Michelo C, George A, Schneider H. Integrating community health assistant-driven sexual and reproductive health services in the community health system in Nyimba district in Zambia: mapping key actors, points of integration, and conditions shaping the process. *Reprod Health.* 2019;16(1):1-11.
- [24] Zulu JM, Blystad A, Haaland MES, Michelo C, Haukanes H, Moland KM. Why teach sexuality education in school? Teacher discretion in implementing comprehensive sexuality education in rural Zambia. *Int J Equity Health.* 2019;18(1):116.
- [25] Marchal B, Van Belle S, De Brouwere V, Witter S. Studying complex interventions: reflections from the FEMHealth project on evaluating fee exemption policies in West Africa and Morocco. *BMC Health Serv Res.* 2013;13(1):1-9.
- [26] Moland KM, Haukanes H, Tadele G, Blystad A. The paradox of access-abortion law, policy and misoprostol. *Tidsskrift for Den norske legeforening.* 2017.
- [27] Riffin C, Kenien C, Ghesquiere A, Dorime A, Villanueva C, Gardner D, et al. Community-based participatory research: understanding a promising approach to addressing knowledge gaps in palliative care. *Ann Palliat Med.* 2016;5(3):218.
- [28] Pawson R, Tilley N, Tilley N. *Realistic evaluation*: sage; 1997.
- [29] Van Belle S. Accountability in sexual and reproductive health: A how relations between NGOs and state actors shape public accountability: a study of two local health systems in Ghana. University of London; 2014.
- [30] Van Belle SB, Marchal B, Dubourg D, Kegels G. How to develop a theory-driven evaluation design? Lessons learned from an adolescent sexual and reproductive health programme in West Africa. *BMC Public Health.* 2010;10(1):1-10.
- [31] Tetui M, Coe A-B, Hurtig A-K, Ekirapa-Kiracho E, Kiwanuka SN. Experiences of using a participatory action research approach to strengthen district local capacity in Eastern Uganda. *Glob Health Action.* 2017;10(sup4):1346038.
- [32] Clark CD. The autodriver interview: A photographic viewfinder into children's experience. *Visual Stud.* 1999;14(1):39-50.
- [33] Harper D. Talking about pictures: A case for photo elicitation. *Visual Stud.* 2002;17(1):13-26.
- [34] Pyle A. Engaging young children in research through photo elicitation. *Early Child Dev Care.* 2013;183(11):1544-58.
- [35] Mulubwa C, Hurtig A-K, Zulu JM, Michelo C, Sandøy IF, Goicolea I. Can sexual health interventions make community-based health systems more responsive to adolescents? A realist informed study in rural Zambia. *Reprod Health.* 2020;17(1):1-15.
- [36] Blystad A, Haukanes H, Tadele G, Haaland ME, Sambaiga R, Zulu JM, et al. The access paradox: abortion law, policy and practice in Ethiopia, Tanzania and Zambia. *Int J Equity Health.* 2019;18:1-15.

- [37] Chavula MP, Zulu JM, Hurtig A-K. Factors influencing the integration of comprehensive sexuality education into educational systems in low-and middle-income countries: a systematic review. *Reprod Health*. 2022;19(1):1-25.
- [38] Chavula MP, Matenga TFL, Halwiindi H, Hamooya C, Sichula N, Jones DL, et al. Factors shaping responsiveness towards sexual gender-based violence during the COVID-19 Pandemic in Africa: A systematic review. *Cogent Public Health*. 2023;10(1):2234600.
- [39] Zulu JM, Sitali D, Shroff ZC, Lamba G, Sichone G, Michelo C, et al. Barriers and facilitators for integration of guidelines on operating health shops: a case of family planning services. *J Pharm Policy Pract*. 2021;14(1):1-11.
- [40] Chilambe K, Mulubwa C, Zulu JM, Chavula MP. Experiences of teachers and community-based health workers in addressing adolescents' sexual reproductive health and rights problems in rural health systems: a case of the RISE project in Zambia. *BMC Public Health*. 2023;23(1):335.
- [41] Zulu JM, Mwamba T, Rosen A, Matenga TFL, Mulanda J, Kaimba M, et al. Community engagement for the Voluntary Medical Male Circumcision (VMMC) program: an analysis of key stakeholder roles to promote a sustainable program in Zambia. *Gates Open Res*. 2022;6.
- [42] Sialubanje C, Sumbwa PI, Zulu N, Mwanza NB, Chavula MP, Zulu J. Gender integration and female participation in scientific and health research in Zambia: a descriptive cross-sectional study protocol. *BMJ open*. 2023;13(3):e064139.
- [43] Tetui M, Hurtig AK, Jonsson F, Whyte E, Zulu J, Schneider H, et al. Strengthening Research and Practice in Community Health Systems: A Research Agenda and Manifesto. *Int J Health Policy Manag*. 2022;11(1):17-23.
- [44] Zulu JM, Chavula MP, Silumbwe A, Munakampe MN, Mulubwa C, Zulu W, et al. Exploring Politics and Contestation in the Policy Process: The Case of Zambia's Contested Community Health Strategy. *Int J Health Policy Manag*. 2022;11(1):24-30.
- [45] Schneider H, Olivier J, Orgill M, Brady L, Whyte E, Zulu J, et al. The Multiple Lenses on the Community Health System: Implications for Policy, Practice and Research. *Int J Health Policy Manag*. 2022;11(1):9-16.