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The Role of Theory-based HIV and Sexual Health Interventions in Enhancing Positive Sexual Behaviour Outcomes and Reducing Risk Factors among Young People in Sub-Saharan Africa. A Scoping Review Protocol

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Abstract

Background: In Sub-Sahara Africa, young people aged between 15 and 24 years are disproportionately affected by the HIV pandemic and represent a growing population in need of sexual and reproductive health (SRH) services. Several theory-based HIV prevention interventions have been developed and implemented to reduce the risk of HIV infection transmission among young people and enhance positive sexual behaviours. However, there are few evidence syntheses that highlight the role of theory-based HIV and sexual health interventions in enhancing positive sexual behaviours among young people in Sub-Saharan Africa. This review aims to map evidence on the role of theory-based HIV prevention intervention in enhancing positive sexual behaviour outcomes and reducing risk factors among young people aged 10 -24 years of age in Sub-Saharan Africa.

Methods: This scoping review will adopt the methodological framework of Arksey and O'Malley. We will identify several databases which will include PubMed, Scopus, MEDLINE, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), ProQuest One Academic, Web of Science, and Google scholar. We will search for relevant studies from 2012 onwards, written in English, and conducted in the SSA region. We will adopt a two-stage process where two independent reviewers will screen the titles and abstracts for eligibility after which they will carry out data extraction and analysis through an iterative process. This will be followed by a full-text screening of the articles from the selected titles and abstracts.

Discussion: Results from this scoping review can inform policy changes and guide future HIV programme developers to develop and implement effective theory-based HIV interventions among young people in SSA. It can provide insights on how theories can be combined to address complex behavioural characteristics. Importantly, the review will act as a backdrop to many theory-based HIV interventions that seek to integrate the positive youth development approach in existing HIV prevention programmes.

Keywords: Theory-based interventions • Sexual behaviour • HIV • Risk factors • Young people • Sub-sahara Africa

Abbreviations: Mesh: Medical Subject heading, PRISMA: Preferred reporting items for systematic reviews and misanalyses, RCT: Randomised controlled trial, SSA: Sub-saharan Africa, HIV: Human immunodeficiency virus, PYD: Positive youth development, SCT: Social cognitive theory, HBM: Health belief model, SRH: Sexual and reproductive health, CINAHL: Cumulative index to nursing and allied health literature, AGYW: Adolescent girls and young women, SoC: Stages of change, TPB**:** Theory of planned behaviour

Introduction

Sub-Saharan Africa (SSA) has been the epicentre of HIV transmission for decades now [1], accounting for about 70% of the 34.2 million people infected with HIV globally [2]. Young people, especially adolescent girls aged 15-24 years, are disproportionately affected by the pandemic and account for 34% of all new HIV infections representing a growing population in need of Sexual and Reproductive Health (SRH) services [3]. Estimates indicate that of the nearly 290,000 new HIV infections in Eastern and Southern Africa among young people aged 15 to 24 years old, two-thirds occurred among adolescent girls and young women (AGYW) [4]. While HIV-related deaths declined by 48% between 2005 and 2017, AIDS-related deaths among all adolescents and young people increased by 50% to approximately 55,000 deaths [5]. Young people's vulnerability to HIV is compounded by a range of biological, behavioural, social, structural, and gender dynamics [6,7]. Further, young people's access to HIV and sexual and reproductive health (SRH) services is limited, and community stigma and human rights violations are widespread in SSA [5]. Predictors of sexual risk behaviours among young people in SSA include early marriages and sexual initiation for young girls which are forced and not voluntary, substance abuse, age at first sex, low parental education, peer influence, age-disparate relationships, punitive laws criminalising homosexuality which prevent young people from seeking treatment from health centres [8,9], gender discrimination, and economic disadvantage [10,11]. Given this, it is projected that new adolescent infections will increase by 13% annually leading to 3.5 million new infections by 2030 if interventions to address the drivers of HIV among young people are not scaled up [12]. Therefore, tailored HIV prevention programmes are essential in reversing the HIV epidemic among young people because they are contextual and can address structural factors that influence young people's sexual risk behaviour [13].

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For several decades, HIV prevention programmes have been developed and implemented in SSA to reduce vulnerabilities and sexual risk behaviour among young people [5]. These include preventive education in schools such as comprehensive sexuality education [14], services offered at youth-friendly centres such as free condom distribution, counselling, HIV testing, and initiatives that enhance the utilization of SRH services [15]. These have mainly focused on increasing levels of sexual health knowledge, abstinence, delaying sexual debut, increasing condom use and reducing the number of sexual partners, changing attitudes, improving access to sexual and reproductive health services, and enhancing sexual health efficacy [2].

Also, many individual level health promotion interventions that are based on existing theories of behavior change have been used in developing, implementing, and evaluating behavior change for HIV-related interventions [16]. These interventions seek to understand the context of health-related behaviors and provide a theoretical framework for planning behavior change programmers [17]. Because they have a theoretical foundation, theory-based interventions provide a basis for understanding how cognitive abilities predict sexual behavior and are considered to be more efficacious than those that are not theory-based [13-18]. Additionally, theory when used to inform behavior change can aid in understanding factors influencing risky and safe sexual behavior and can be effective in establishing principles and address the dynamics of behavior change [19]. Besides providing theoretical underpinnings for behavioral interventions, behavioral theories can provide a framework for evaluating HIV prevention interventions [18]. However, reviews of individual level theory-based HIV interventions have revealed that the success of these models is constrained by their inability to explicitly consider high-level behavioral connections [20]. The common theories and approaches used in HIV interventions include the I-Change model (ICM) [21], the Social Learning /Cognitive theory (SCT), the Theory of Reasoned Action/Planned Behaviour (TRA/TPB), the Stages of Change (SoC), the Social Ecological Model (SEM), the Health Belief Model (HBM) [13], and positive youth development (PYD) [22]. SCT posits that there is a reciprocal influence between behavioral patterns and the surrounding environment, a phenomenon referred to as reciprocal determinism [23]. SCT emphasizes efficacy expectations and outcome expectancies as influenced by the surrounding environment [10]. It assumes that behavior is not simply the result of the environment and the person, just as the environment is not merely a function of the person and behavior [13].

The HBM is a value expectancy theory used to predict health-seeking behavior and has six main constructs [24]. It assumes that a person takes health-related action if that person believes that he/she is susceptible to the condition (perceived susceptibility), the condition has serious consequences (perceived severity), and that taking action would reduce their susceptibility to a certain condition (perceived benefits) and that these benefits outweigh the cost of taking action (Perceived barriers) and that action is taken more easily if the person is exposed to factors that prompt action (Cues to action) and is confident in his /her abilities to successfully act (self-efficacy) [13].

The TRA/TPB is an explanatory theory that postulates that a person's behavior is determined by his/her intention to perform the behavior. It asserts that behavioral intention is influenced by attitudes, subjective norms, and perceived behavioral control [19-25]. The Sock model stipulates that behavior change is a continuous process and that an individual passes through five stages: pre-contemplation, contemplation, preparation, action, and maintenance [26]. The ICM model is an explanatory model which postulates that the effects of pre-motivational factors (Knowledge, behavioral cognizance, risk perception and cue) on behavior, is mediated by motivational factors such as attitude, self-efficacy, social influence, and intention [21]. Because of the numerous theoretical constructs that exist and overlap in different models, the I-change model takes an integrated approach to behavior change and offers a socio-ecological framework for understanding health behavior [27].

Despite their effectiveness in understanding cognitive sexual health behavior, HIV prevention interventions that are only based on cognitive behavioral theories have small and short-term effects because they do not consider the multiplicity of environmental and structural factors that drive sexual behavior [10]. As such, recent literature supports a social ecological approach to understanding the multiple influences and predictors of risk sexual behaviors. The SEM posits that health seeking behavior is shaped by an allay of structural factors other than those at an individual level [28,29].

Important to note is the fact that sexual behavior is a collection of several distinct behaviors [30], therefore, no single theory can address all these behavioral characteristics [13]. For instance, factors that influence sexual behavior might be at community and structural levels, which can include gender discrimination and stigma, and existing health policies [29]. Hence, the planning of theory-based HIV interventions should be done following the type of behavior being measured. Additionally, Michelson K, et al. [13], assert that not all theories are suitable for all age groups of young people which can vary between their developmental stages. This can pose a great challenge in identifying attitudes and beliefs in young people who have not fully identified cognitive behaviors. As such, theory-based interventions should take a targeted approach and should be assessed for their suitability in assessing cognitive behavior outcomes as influenced by one's age, gender, and other personal characteristics [15].

As such, most interventions among young people in developed countries have taken an integrated approach to HIV prevention where positive youth development (PYD) programmers have been incorporated into existing theory-based interventions [31]. PYD is an approach to HIV prevention among young people which includes several programmers and policy initiatives that focus on building young people's skills and competencies [32]. PYD fosters youth agency through programmers such as education that enhance interpersonal skills. Unlike theory-based interventions which focus on single-problem behavior, the concept of PYD takes a comprehensive approach to behavior change and fosters a supportive environment to prepare young people for successful adulthood [33]. It is argued that because many behavioral problems have common predictors, measuring a single behavioral problem may not be efficacious in addressing the multi-determinism of sexual behavioral risk factors [22]. However, there is limited literature on the effects of positive youth development in reducing sexual risk behaviors among young people in low-income countries [33].

Considering this, this review seeks to provide a critical narrative synthesis and map evidence on the role of theory-based HIV and sexual health interventions in enhancing positive sexual outcomes and reducing risk factors among young people aged 10-24 years of age in Sub-Saharan Africa. The review will describe, contextualize and appraise various theory-based HIV prevention interventions regarding their efficacy in reducing sexual risk behaviors among young people. Additionally, the review will seek to establish the theoretical foundation of various HIV prevention interventions among young people in SSA.

Methods

The scoping review will adopt a framework proposed by Arksey and O'Malley, which outlines five stages in the organization and development of the review process [34]. These stages include (1) identifying the research question, (2) identifying relevant studies, (3) study selection, (4) charting the data, and (5) collating, summarizing, and reporting the results. Further, we will seek to report the findings from our scoping review using the Preferred Reporting Items for Systematic Reviews (PRISMA) and Meta-Analysis Extension for Scorpion Reviews (Figure 1).

Review process

Framework stage 1: Identifying the research question: This stage was informed by the scanning of existing published scholarly literature. This guided the development of the research questions for the scoping review. Considering this, the broad research question that this review will seek to answer is: "What is the role of theory-based HIV and sexual health interventions in enhancing positive sexual behavioral outcomes and reducing risk factors among young people in SSA?". Guided by the main research question, the review will seek to provide a narrative synthesis of the efficacy of theory-based HIV and sexual health interventions in enhancing positive sexual behavior outcomes and reducing risky sexual behaviors among young people aged 10-24 years of age.

Further, the review will seek to appraise and characterize various behavioral theories that are applied in HIV/AIDS interventions. The review will also seek to establish the theoretical basis of the current HIV prevention interventions among young people in SSA.

Framework stage 2: Identification of relevant studies: Searching of electronic databases of existing published literature will be done to identify relevant studies to include in this review. The search will also be extended to published systematic reviews. These electronic databases will include PubMed, Scopus, MEDLINE, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Web of Science, Google Scholar, ProQuest One Academic and EMBASE. In addition, all reference lists in the articles identified in the databases will be included to identify additional relevant studies. The review will also include relevant grey literature such as Grey Literature Report, OpenGrey, and Web of Science, and Conference Proceedings to identify studies, reports, and conference abstracts that we will apply to this review. The inclusion criteria that will guide the protocol will be as follows: (1) Language of publication: English, (2) Timeframe: Articles not more than 10 years old after publication, (3) Study setting: SSA, (4) types of articles: randomized controlled trials, interventional studies including quasi-experimental designs, reports, qualitative studies, and literature reviews. Articles will be excluded if they do not meet the above criteria. The search terms will be agreed upon by the search team and a librarian will be consulted to aid in the selection of appropriate search terms. The review will utilise the following keywords that will be used to search for articles in the various electronic databases: sexual, health, theory, HIV, interventions, behaviour, young people, adolescents, teenagers, youth, SSA, role, enhancing, and risk. Further, we will adopt a search string that will combine keywords and Medical Subject Headings (MeSH) [35], which will include, Theory-based, Sexual health, Sub Sahara Africa, HIV interventions, Sexual Health interventions, and risky behavior. All the review articles will be screened for their titles, abstracts, and index terms. The articles which will be retrieved will be imported into reference management software, namely EndNote. EndNote reference manager will be used for removing duplications and managing records and organizing the final list of references which will be included in the review.

Framework stage 3: Study selection: The review will adopt two levels of screening; this will be at the title stage where two review members will independently screen the title and abstract of all retrieved articles for inclusion, based on the set of already established inclusion criteria. These inclusion criteria will be developed using the population-concept-context (PPC) framework (Table 1). The second level of screening will involve a full-text review, where a sample of the retrieved articles will again be independently screened by two review team members. This will enhance consistency in the applicability of the eligibility criteria for inclusion in the review [36]. If the article is determined to be relevant by both members of the review team, it will be included in the full-text review. Advancement to the next stage of screening will be determined by reaching an agreement percentage of 80% and above. Any agreement on certain articles which is less than this will need the inclusion and exclusion criteria to be clarified by the three members of the review team. All duplicates from different databases will be removed using the EndNote reference manager. Titles and abstracts will be screened to ascertain whether they meet the established inclusion criteria by a member of the review team. The full-text articles of those meeting the title and abstract criteria will then be retrieved. At this stage, if there are any disagreements about the eligibility of the selected articles, this will be discussed between two reviewers until a consensus is reached through the engagement of the third reviewer. This review will adopt the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) flow chart (Figure 1).

Framework stage 4: Charting the data: Data will be extracted from the retrieved articles and will include the author, year of publication, and study objectives. Our data extraction framework will aid in assessing the eligibility criteria for inclusion. The assessment criteria for each article will be based on the study population characteristics, setting, length of the interventions, types of outcomes assessed, and information on the effectiveness of the theory-based HIV interventions [35].

Table 1. Inclusion criteria based on the PCC framework.

Population	Concept	Content
Young people Young adults Adolescents Teenagers (10-24 years of age)	Theory-based HIV interventions, Theory-based Sexual health interventions, Positive sexual behaviour outcomes, HIV risk factors	Studies conducted in Sub-Saharan Africa

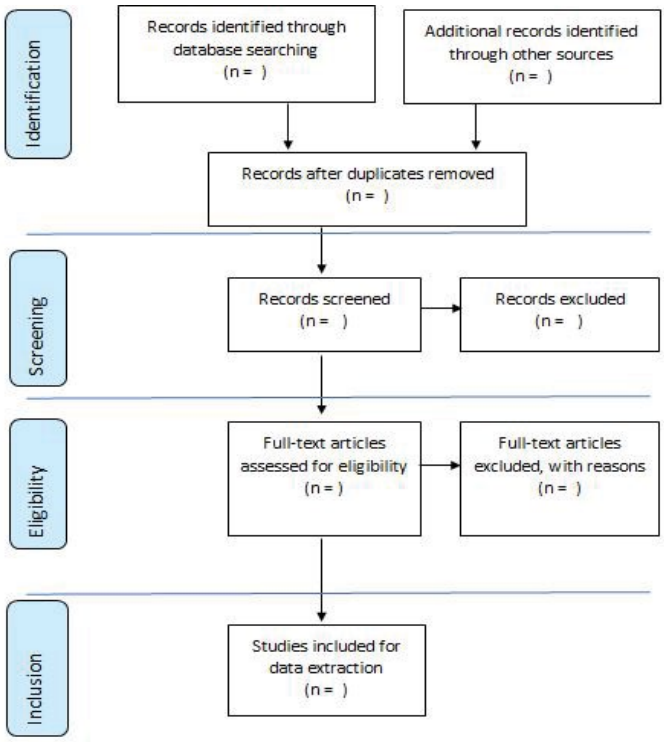

Figure 1. Prisma flow chart.

Framework stage 5: Collating, summarizing and reporting the results: Through the numerical analysis, the review will compile a summary of findings on the role of theory-based HIV and sexual health interventions in enhancing positive sexual behavior outcomes and reducing risky behaviors among young people in SSA. This will be done using a thematic construction that will be used to build a narrative based on the objectives of this review. The review will provide a narrative synthesis of the theoretical foundations of HIV prevention interventions among young people in SSA. Most importantly, the numerical analysis of the data from different articles will provide a narrative synthesis to help appraise the efficacy of various theory-based HIV interventions among young people. Also, the narrative synthesis of the findings will be essential in assessing the role of theory-based HIV and sexual health interventions in enhancing positive sexual behaviour outcomes and reducing risk factors among young people in Sub-Sahara Africa.

Discussion and Conclusion

This scoping review aims to assess the role of theory-based HIV and sexual health interventions in enhancing positive sexual behaviors and reducing risk behaviors among young people aged 10-24 years in Sub-Sahara Africa. Findings from this review will be essential in establishing the role of theory-based HIV prevention interventions in enhancing positive sexual behaviors and reducing risk factors among young people in Sub-Saharan Africa. Additionally, results from this scoping review will provide key insights and can guide future HIV programmer developers in developing effective theory-based HIV interventions among young people in SSA. In informing policy change and practice, the findings may act as a backdrop to many HIV programmers that seek to integrate positive youth development programmers into existing theory-based HIV interventions in Sub-Saharan Africa. The limitation of this

review is that we only included articles and review papers published in English which is likely to contribute to selection bias.

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Authors' Contributions

The authors contributed to the development of the research questions, the methods and the drafting and editing. All authors have approved the final manuscript.

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Availability of Data and Materials

Not applicable.

Ethics Approval and Consent to Participate

Not applicable.

Consent for Publication

Not applicable.

Conflicts of Interest

The authors declared that they have no competing interests.

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