REVIEW PAPER

ABC complementary approaches for HIV/AIDS prevention: a literature review

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Abstract

Introduction: Decades of research on human immunodeficiency virus (HIV) prevention have created new challenges in behavior change that require new approaches of communication. Scholars suggest that these new approaches should go beyond the simplicity of ABC. This study aimed to review the evidence related to ABC complementary approaches for prevention of HIV/acquired immunodeficiency syndrome (AIDS).

Material and methods: A narrative review was carried out based on Scale for the Assessment of Narrative Review Articles (SANRA) in order to get a comprehensive perspective on HIV/AIDS preventive approaches. Literature search was performed through English databases of PubMed, Web of Science, and Scopus as well as Persian databases, including Magiran and SID. In addition, UNAIDS, CDC, and WHO reports were examined. This search was conducted until May 11, 2021. Publication year and type of study design were not restricted. All studies, guidelines, and documents providing evidence regarding preventive approaches in HIV/AIDS were included in the review.

Results: We obtained information about various approaches in five guidelines, one policy analysis, and one policy brief. Also, out of 92 articles retrieved from the databases, six articles met eligible criteria for using these approaches. Findings obtained from approaches were categorized into six approaches including ABCDE, ABCDs, two types of ABCD, SAVE, and GEM.

Conclusions: GEM approach that goes beyond ABC, provides a stronger central platform for advancing national and regional efforts to reduce the risks of HIV transmission. Also, it can be considered a comprehensive approach to fighting AIDS in women, because it reflects women's challenges regarding gender and inequality in the process of prevention.

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Introduction

Joint United Nations Program on HIV/AIDS (UNAIDS) announced that 38 million individuals currently live with human immunodeficiency virus (HIV) worldwide [1]. HIV disease continues to be the primary cause of morbidity and mortality worldwide [2], and its' prevention remains one of the world's highest priorities of public health and development [3]. Because without successful prevention of HIV, global attempts

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to control the acquired immunodeficiency syndrome (AIDS) epidemic cannot succeed [3].

HIV preventive services initially concentrated mainly on preventing of sexual transmission by modifying behavior. In worldwide response to HIV/AIDS through research-based evidence, scholars have emphasized the method of abstinence, particularly for people who are not married yet. Therefore, for several years, in response to the increasing epidemic in sub-Saharan Africa, ABC approach ("Abstinence, Be faithful, Use a Condom") was applied [4-6]. This approach, however, is challenging because people undermine the value of abstinence in many cultures, and some arguments have been linked to biological factors, including increase in hormonal level, especially at puberty, which ultimately causes increased sexual desire and sex drive [7]. Also, implementation of HIV prevention strategies, which predicts the attitude of people are not always feasible, as people do not always have absolute control over their choices or actions in engaging in sexual practices. It is argued from a wider viewpoint that ABC approach is too western and does not apply to other contexts, because it confronts religious leaders with issues that causes their views and orientations not to explicitly support it [8]. Therefore, decades of research into HIV/AIDS prevention have created new challenges to behavior change that require new communication approaches [9]. Scholars suggest it requires a new approach that extends beyond simplicity of ABC [10, 11]. Because, people at risk of HIV infection have a cascade of HIV prevention requirements. They need to be risk-conscious, learn to protect themselves, recognizing their HIV status, and have the means to protect themselves [12]. Also, they need an authority to make informed decisions about choices and to receive assistance in prevention process [12]. Hence, by the mid-2000s, it became clear that HIV successful prevention should include socio-cultural, economic, political, legal, and other underlying contextual factors [13]. Given that the complicated nature of global HIV epidemic has become obvious, it seems that other strategies should be considered in combination with ABC-type approaches. Therefore, the present review was conducted to investigate ABC complementary approaches in HIV prevention.

Material and methods

This narrative review was carried out based on the Scale for the Assessment of Narrative Review Articles (SANRA) in order to obtain a comprehensive perspective on HIV/AIDS preventive approaches. SANRA is composed of six different items, including importance of article's topic for readers, narrative review's aims, detailed overview of literature search, comprehensive description of resource search, referencing, use of scientific evidence, and appropriate presentation of results [14].

Search methods and strategies for identification of studies

PubMed, Web of Science, and Scopus as well as Persian databases, including Magiran and SID, were searched for publications using the following terms: 'HIV', 'AIDS', and 'STD', and in combination with Prevention', 'Approach', 'Strategy', and 'Intervention'. Boolean terms (AND/OR) were used to distinguish key words as well as medical subject headings (MeSH) to improve consistency of the search process. Secondary searching was also conducted through grey literature, such as reports of WHO, UNAIDS, CDC websites, and

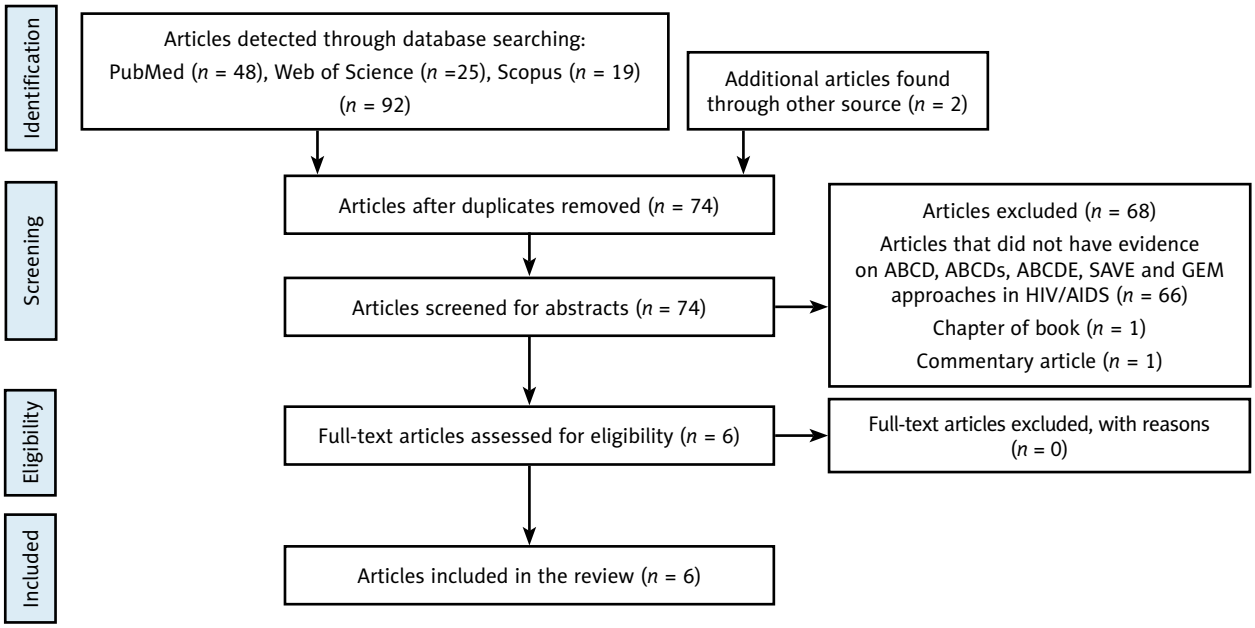

Figure 1. Flowchart of study selection

unpublished manuscripts reporting evidence on HIV/ AIDS prevention approaches. Reference lists of included studies were also reviewed to find additional references. Then, in third phase of the search, after finding ABC complementary approaches, ABCDE, ABCD, ABCDs, SAVE, and GEM key words were applied to search through above-mentioned databases to find articles on these approaches. In order to obtain all the literature on preventive approaches in HIV, the publication year and type of study design were not restricted. The search was conducted until May 11, 2021.

There were four phases to the study selection strategy, including identifying all relevant literature, screening the articles based on titles and abstracts, assessing full text eligibility, and finally including selected studies in the review process [15]. Figure 1 present the number of records that were identified and included in each of these stages.

Inclusion and exclusion criteria for studies and guidelines

Inclusion criteria were studies providing evidence regarding preventive approaches in HIV/AIDS, as well as guidelines and documents related to the preventive approaches in the context of HIV/AIDS, and guidelines and documents related to the prevention of HIV/AIDS in the context of at-risk populations. Studies and guidelines were excluded if their language was not English or Persian, full text of the study was not available, and the study released as a letter to editors or conference abstract.

Data extraction and management of the studies

At first, two authors (M.L. and E.M.) screened titles and abstracts of all retrieved documents (guidelines and articles) to identify their eligibility. Documents were independently selected, and the findings were debated separately by two authors, with any inconsistency discussed with the third author. There was not any disagreement between authors.

Relevant variables, including authors, year of publication, participants' geographical locations, study design, study population, sample size, setting, aims, complementary approach, the way of applying the approach, and outcome were extracted.

Ethical consideration

Ethical issues, such as avoiding plagiarism, ensuring robustness in relevant data acquisition, preparedness, and submission of the data were all taken into consideration by the authors.

Results

In the first phase of the search, 92 articles were found, 18 of which were duplicated and removed. After titles and abstracts screening, 68 studies, one book chapter, and one commentary were eliminated due to the lack of evidence of AIDS approaches (n = 66). During the full text review phase, no study was omitted. Finally, data extraction was performed from six related articles. It should be noted that we did not find any articles, guidelines, or documents about the objectives of the study in Persian databases. Table 1 provides detailed information about the retrieved articles.

Also, we obtained information about the approaches through five guidelines [16-20], one policy analysis [21], and one policy brief [22].

Characteristics of included studies

We found six studies, of which 4 were based on ABCD approach [23-26], and two were based on SAVE approach [27, 28]. No study was found based on ABCDE, ABCDs, and GEM approaches. Of the six studies, three were conducted in South Africa [25-27], one in Iran [24], one in Indonesia [28], and one in Tanzania [23].

Findings obtained from guidelines and policy briefs

Data were categorized into six approaches, including ABCDE, ABCDs, two types of ABCD, SAVE, and GEM.

ABCDE approach

The ABC approach proved especially effective in reducing Uganda's infection rate in the 1990s [29]. But this strategy was complex and ever changing, and was discussed at national and international levels [30]. Therefore, by adding other sections, it has been expanded to ABCDE [31].

'A' component represents 'abstinence': The term 'abstinence' can refer either to a situation, in which a young person who has never had sexual delays (primary abstinence) begins sexual activity, or to a person who, after initiation, chooses to stop sexual activity (secondary abstinence) [30]. Abstinence, if 'used' with absolute consistency, is 100 percent successful. But practicality, it reveals that it can and does fail in the real world [21].

'B' component represents 'be faithful': Abstinence debates concerned reasons for having or not having sex at all, while the category of 'being faithful' addressed number of partners [32]. 'B' may mean lifelong monogamy, serial monogamy, fidelity in a polygamous marriage, or an overall decline in the number of informal sexual partners [21, 33].

'C' component stands for 'condom use': The third component of the ABC health campaign is consistent and correct condom usage [34]. However, if sexually active peoples use condoms properly and consistently and even decrease the number of their sexual partners to one, it cannot protect them from the risk of infection [21].

'D' component represents 'do not use drugs': Inconsistent condom usage by people who use stimulant drugs has been established as primary means of contracting STIs, including HIV, especially if they have simultaneous multiple partners.

Table 1. Articles obtained from literature review

Author (year of publication) [Ref.]	Participants' geographical locations	Study design	Study population	Sample size	Setting	Aim(s)	Complementary approach	Way of applying the approach	Outcome
Aloni (2019) [23]	Tanzania	Cross-sectional	Males and females, aged 15-64 years	660	Common population in urban and rural locations	To address the role of combined knowledge of ABCD of HIV prevention on condom use in the Njombe and Tanga regions of Tanzania	ABCD+	To explore the knowledge of HIV prevention methods referred to in this study as 'knowledge of ABCD model of HIV/AIDS prevention'	When awareness of HIV prevention strategies was assessed in combination, predictive impact on condom usage was more evident than when A, B, C, and D were evaluated separately
Yazdanbakhsh (2019) [24]	Iran	Quasi-experimental	Addicts with positive HIV test	20	HIV-positive association in Kermanshhah City	To determine the effectiveness of cognitive behavioral group therapy on craving and relapse in addicted HIV-positive patients	ABCD	Discussion with ABCD model in seventh session of intervention	Findings demonstrated the value of cognitive-behavioral group therapy in reducing craving and relapse in HIV-positive addicts
Coffman (2011) [25]	South Africa	Quasi-experimental	Males and female students in 8^{th}-11^{th} grades	2,429	Low-income, densely populated urban setting near Cape Town that was established as a township during apartheid	To examine the impact of health wise South Africa prevention intervention on condom use self-efficacy	ABCD	Discussion with ABCD model in intervention group	Although the results were different for girls and boys, health wise had a statistically significant positive impact on condom usage self-efficacy
Bangirana (2017) [26]	South Africa	Qualitative research	Male and female students at university campuses from both undergraduate and postgraduate levels	Ten individual interviews and two focus group discussions	Campuses' students at the University of KwaZulu-Natal	To provide a qualitative inquiry into factors associated with high-risk behavior focusing on the students within a Catholic context	ABCD*	Students views on the lifestyle prevention model	Results showed that teachings on sexual ethics through ABCD model helps to reduce students' vulnerability to HIV more than prevention

Table 1. Cont.

Author (year of publication) [Ref.]	Participants' geographical locations	Study design	Study population	Sample size	Setting	Aim(s)	Complementary approach	Way of applying the approach	Outcome
Eriksson (2013) [27]	South Africa	Qualitative study	16-20 years old young people	62	Durban city where HIV prevalence in the age group of 15-24 years is higher than in the same age group across South Africa	To gain a deeper understanding of how young people perceive and reflect on messages received from the churches regarding premarital sex in the context of their own realities	SAVE	To introduce SAVE model as a more holistic way of preventing HIV by incorporating the principles of ABC as well as providing additional information about HIV prevention, and challenging HIV stigma	Ambiguity between church's moral advice and young people's perceptions of sex and gender roles in church activities is an obstacle to awareness and use of HIV prevention equipment
Liem (2013) [28]	Indonesia	Action research	Midwives working at public health center	24	Two PHC that had more midwives than other PHC in Sleman	To improve the quality service of midwives stationed at public health center through psycho-education on HIV and AIDS based on SAVE approach, referred to "BIDAN Cerdas dan Empatik (CANTIK)" program (smart and emphatic midwives program)	SAVE	To explore the knowledge of HIV prevention methods referred to in this study as 'knowledge of SAVE model of HIV/AIDS prevention'	BIDAN CANTIK psycho-education intervention can help midwives provide better services in public health centers due to advances in HIV awareness

*[+]ABCD – 'abstinence', 'be faithful', 'condom use', 'diagnosis or testing'm, *ABCD – 'abstinence', 'be faithful', 'change your lifestyle or else you are in danger of contracting HIV and AIDS', PHC - primary healthcare, SAVE – safer practices, available medication: VCT-empowerment*

Longer penetration, leading to possible condom breakage, and more intense acts, such as fisting, can also be induced by stimulant drug use, which increases the risk of anal and vaginal tears or bleeding [35].

'E' component stands for 'equipment': It means avoiding the use of sterile instruments, such as tattooing, acupuncture needles, and other people's disposable needles. Stigma, discrimination, and civil sanctions have a significant effect on the ability to access and use HIV services in individuals who use drugs, men who have sex with men, transgender people, sex workers, and people living with HIV. Stigma often inhibits the ability of key communities to access the required products or services to practice preventive behaviors, including use of condoms, and to access sterile injection equipment, HIV testing, and HIV care [35].

ABCDs approach

In Pakistan, this approach was used to enhance preventive measures and provide information in home-based care. The components of this approach include: A – 'abstinence', B – 'being faithful', C – 'using condoms', and Ds – 'do not share needles' [16].

ABCD approach

This approach was established with the assistance of Southern African Catholic Bishops' Conference Youth Desk and the Association of Catholic Tertiary Students and Chiro. 'A' represents 'abstain', 'B' – 'be faithful', 'C' – 'change your lifestyle', and 'D' – 'danger of contracting AIDS' [17].

ABCD approach

National HIV/AIDS Policy Committee of Singapore used this approach in health education process in 2006. The components of this approach include: 'A' – 'abstinence', 'B' – 'being committed to one uninfected partner who has no other partners', 'C' – 'consistent and correct condom use', and 'D' – 'early diagnose of HIV' [18]. This approach has also been emphasized in home-based care policies in Uganda [36].

SAVE approach

SAVE strategy (safer practices, available medication, voluntary screening and counseling, and empowerment through education) was adapted to religious values. In 2003, the African Network of Religious Leaders Living with HIV and AIDS (ANERELA) implemented this approach. It was developed to provide data in the form of non-sexual transmission, monitoring, treatment, and assistance for people who are already infected with HIV and AIDS [37].

'S' component represents safer practices: When it refers to safer methods, we strive to consider all possible routes of HIV transmission. PMTCT, post-exposure prophylaxis (PEP), male circumcision, sterile instruments, healthy blood for transfusion, but also delaying sexual debut; shared fidelity within a committed relationship are all factors that minimize the risk of HIV transmission [38]. Safer sexual behaviors, including dual protection (condom promotion) and delayed onset of sexual activity and having only one sexual partner [39, 40]. Delaying sexual debut is the priority of behavioral interventions; decreasing unsafe sex, especially concurrent sexual relationships, prohibiting cross-generational, transactional sex, and promoting consistent use of condoms. Condoms do not have 100% HIV protection and should thus be used in combination with other preventive methods [20]. Using male condoms correctly and other barriers, such as female condoms and dental dams, will often minimize (but not eliminate) the risk of HIV [39].

'A' component represents 'available medication': It is important for patients to be able to access antiretroviral therapies for HIV infection control in the absence of a cure for HIV/ AIDS. Also, the access to affordable HIV medicines is of central importance in healthcare and in improving health outcomes [22, 41].

'V' component stands for 'voluntary testing and counseling': It plays an important role in the global response to the pandemic of HIV/AIDS, and also is a key entry point in the prevention and care of HIV/AIDS. It is hypothesized that, in addition to receiving individualized risk mitigation therapy, voluntary counseling and testing (VCT) could help people in minimizing sexual risk-taking behaviors, and protecting themselves and their partners from HIV and other sexually transmitted infections through the process of discovering one's HIV sero status [42]. Early knowledge of HIV status of a person has many advantages, including easy access to HIV treatment and support services that can both enhance quality of life and prolong the life span of PLHIV as well as prevent the spread of HIV by reducing the risk and modifying behavior [43, 44].

'E' component represents 'empowerment through education': It was concluded that enhancing access to education, especially secondary education, is one of the best ways to empower young women to demand their sexual and reproductive rights. The study highlighted formal education (especially secondary education) as affecting HIV vulnerability in three significant ways: by demonstrating an opportunity to HIV/AIDS education in school-based services, helping young women to act on HIV prevention messages, such as negotiating the use of condoms as well as providing better economic opportunities, thus possibly preventing HIV by offering greater security for young women from being exposed to transactional sexual interactions or abusive/violent relationships [45].

GEM approach

This methodology was developed by Dworkin and Ehrhardt, and considers gender relations, economic context, and migration (GEM) (2007) [46]. GEM supports an approach of HIV prevention; is gender-specific [46] and illustrates key issues facing HIV prevention programs that do not address gender discrimination [47].

'G' component represents 'gender relations': Prevention of HIV infection in women should address fundamental inequalities in gender power, which are the main cause of their vulnerability. It should also include testing and care for older men and women, and gender-sensitive treatments for adolescent boys, such as voluntary medical circumcision (VMMC) and comprehensive sex education [48]. Significant drivers of the epidemic among women and girls are embedded in gender inequality. For example, negative masculinities enable men to take risks in their sexual activities and keep them away from HIV prevention facilities, testing, and care. Moreover, it increases the risk of women and girls acquiring HIV and undermine an effective HIV response [49]. Gender discrimination, stigma, sexism, criminalization, violence, and other human rights abuses prohibit women and key populations from obtaining and receiving the required resources and assistance [49].

'E' component stands for 'economic and educational contexts': Socio-economic status of women, in combination with their biological vulnerability, exposes them to HIV infection. When females are unemployed, they are more likely to be forced to marry or engage in transactional sexual relations, resulting in an increase of their HIV infection rates [50]. There is also a shortage of resources for unemployed women to use health facilities that include HIV diagnostic tests and antiretroviral medications, which raises their infection rates. Finally, the absence of antiretroviral drugs for pregnant women not only increases their mortality rates, but also increases their children's HIV infections and AIDS-related deaths [51]. Poverty of patients can directly impact their participation in care because individuals do not have the required financial support, such as transportation expenses, to attend healthcare centers. They also face challenges, such as waiting time and loss of salary, when they take leave to go to healthcare centers [52].

'M' component represents 'migration': Migrants frequently seek jobs in new regions for economic, socio-political, and human rights reasons, but are often misinformed about migration-related risks. Migration and the risk of HIV disease can be affected by structural and contextual dimensions, including sociological, socio-economic, health-related, human rights concerns, and lack of resources [53]. Segregation from families and spouses as well as separation from socio-cultural norms are the possible risk factors for migrants. HIV vulnerability of people who do not move at all may also be influenced by population mobility, such as people in societies along major transit routes or with major construction sites, or those whose partners work abroad. Generally, the access to healthcare services, including health promotion, HIV prevention, voluntary counseling and testing, and HIV care and support, are mostly restricted to the migrants [54].

Discussion

In communities with a high incidence of new infections, effective preventive approaches that can be implemented with high coverage rates are critical [55]. The needed HIV prevention methods should go beyond adding more alphabets. This means that promoting global HIV prevention should include ensuring transparency for national pandemic prevention efforts, and supporting interventions and mitigating factors, which lead to vulnerability for national governments, donors, and global organizations [56]. A common critique of ABC model is that it is unrealistically 'individual', as it pays very little attention to social, cultural, and material factors, which affect sexual behavior and put people at risk. However, these factors are particularly powerful in minimizing the choice and freedom of women, youth, and marginalized groups [13]. This message of using condoms is usually directed to heterosexual women, and implies that women should behave assertively to control the course of their sexual experiences and ensure that a condom is used by their male partners [34]. For many reasons, this message could be problematic. First, condom usage debate is reflected in Western notions of individualism and personal responsibility, most likely to result in contradictions of gender and personal identity, such as expectation of women to be a trustworthy and committed partner. It also contradicts cultural interpretations of sexual activity as an act of monogamy, loyalty, affection, and trust. This demand for the use of condoms encourages women to engage in assertive sexual activities, which can contribute to feminine satisfaction. Second, this message places women in the position of negotiating with their partners, and suggests that in a male-dominated relationship, there is a possibility of a logical and individual solution [57]. Lastly, condoms carry a stigma. Studies on every continent indicate that both men and women perceive condoms for use when having sex with 'others,' not stable partners. They believe condoms are for street women, not home-based ones. Too often, the use of condoms has become a symbol of a relationship's degree of trust rather than simply a practical means of security [34]. In the fight against new HIV infections, simultaneous information on methods of prevention and early detection of the virus is needed, particularly because the HIV/AIDS campaign advocates for 'zero new HIV infections, zero discrimination, and zero AIDS-related deaths' [23]. ABCDE approach is broader than ABC; A, B, and C focus on preventing new HIV infections, while D focuses on prohibition of drug use, because injecting drug users are 22 times more likely to be infected with HIV than the general population [35]. The risk of HIV in stimulant drug users is related to increased prevalence of unsafe anal and vaginal sex as well as sharing of pipes, straws, and injection devices in certain populations of gay and bisexual men, sex workers, people who inject drugs, and prisoners [35]. All combined prevention programs require comprehensive strategies to address legal and political challenges and improve health and social care as well as take action to reduce gender inequality, stigma, and discrimination [58]. Therefore, all combination prevention approaches need to be: evidence-informed, community-owned, and rights-based [59]. Young women, who are a key target population in HIV/ AIDS epidemic would need additional communication and empowerment strate-

gies based on country-specific studies and tested approaches. Although these packages are different for men and women, community-based services that target both women and men have been successful [60, 61].

Gender inequality among women and girls is a well-established key predictor of HIV-related consequences. Gender mainstreaming (GM) is a critical strategy for incorporating women's and men's needs and experiences into political, economic, and cultural aspects of a national HIV/AIDS response [62]. When optimized for their socio-cultural context, HIV prevention programs are most effective in targeting social, gender, and age groups with highest rates of HIV incidence and new HIV infections [12]. HIV prevention also requires political and religious leaders' support as well as prominent role models from arts, music, economy, media, and sports. Such leaders could raise awareness of a group and influence HIV prevention standards, including the use of condoms, pre-exposure prophylaxis (PrEP), voluntary male medical circumcision, and early treatment [12]. SAVE approach incorporates ABC principles as well as other factors that are critical in HIV prevention. It has been criticized as a religious approach that excludes people who are considered 'non-spiritual' [37].

Previous HIV preventive interventions were limited to ad hoc, short-term special events only [12]. As a result, it was necessary to consider the synergy between previous interventions and programs focused on reducing gender-based violence, labor migration, and different types of economic empowerment for young women in high-prevalence settings [12]. In these areas, adoption of such programs would inspire and advocate for improvement. For example, in innovative programs in South Africa, some mining companies provide family housing to minimize spousal and family separation, which can lead to risk reduction practices [63].

While there are few studies on afore-mentioned approaches in different populations, these approaches have been proven to have a beneficial effect on study's objectives. Challenges associated with these approaches may be one of the reasons for their inadequate use. For example, the main challenge facing the implementation of strategies, such as GEM, is that it takes a long time to prepare, develop, and execute them [64]. Dworkin stated that it is very important not just to focus on the importance of changing and maintaining people's behavior but to emphasize gender relations and other aspects of social inequality, including economic contexts and migration movements as preventive strategies [46].

Our study had several strengths, including different contexts with and without limitation of publication year, which provided a broad overview of ABC complementary approaches for response to HIV/AIDS. One limitation of our research was that quality assessment of the studies and guidelines was not performed. We reviewed studies published in English and Persian languages within the scope of this review, which could exclude important data published in other languages. Given that the above-mentioned approaches are more comprehensive than ABC, few studies have been performed using these approaches. To further explore the issue, we suggest to investigate whether all aspects of these approaches are practical in different communities. Given the comprehensiveness of these approaches, it is necessary to design, implement, and evaluate interventions based on them in different contexts. Also, conducting qualitative research may also help to clarify the difficulties and facilities required to implement these approaches in different contexts.

Conclusions

ABC appears to be a one-dimensional preventive approach that ignores different modes of AIDS transmission, and creates a stigmatizing atmosphere for those who are infected by emphasizing and encouraging the use of condoms in sexual intercourse. It has also placed religious leaders in a challenging situation by emphasizing condom use as a key component of the program. GEM approach provides a stronger central platform for advancing national and regional efforts to reduce the risks of HIV transmission. It can also be considered a comprehensive approach to fight AIDS in women, because it reflects women's challenges regarding gender and inequality.

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Conflict of interest

The authors declare no conflict of interest.

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