

Effectiveness of social marketing in preventing unwanted pregnancies in low-income countries: A review of evidence

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Abstract

Unwanted pregnancy is a major public health concern with biological, psychological, and social consequences. While high-income countries mitigate its impact through government support, low-income countries (LICs) require cost-effective interventions to drive sustainable behavioral change. Social Marketing (SM) has emerged as a promising strategy to modify behaviors and reduce healthcare costs linked to unintended pregnancies. However, most research focuses on high-income settings, leaving a gap in understanding its effectiveness in LICs. This review examines the role of SM interventions in reducing unwanted pregnancies in LICs and provides evidence to inform more effective reproductive health policies.

Methods: The review includes articles searched on mass behavioural interventions in all reproductive age aiming to prevent unwanted pregnancies in LIC published in English, Portuguese, and Spanish between 2007 and 2022.

Results: The analysis showed various interventions with multiple outcomes in sexual abstention, reduction of unwanted pregnancies, increased contraception knowledge, use of emergency pill in the last intercourse, and standard day method used in physical and electronic media. In LICs, concise and high-quality educational programs transmitted by radio commenced at early ages, achieved higher exposition, and had a better recall in populations. Mass contraception community-based distribution model is effective and pharmacies are key part of family planning and sexual health education in societies.

Conclusion: Social marketing is a cost-effective strategy for reducing unwanted pregnancies and sexually transmitted diseases (STDs) while promoting positive sexual behaviors, especially in underserved populations. By driving sustainable behavioral change and improving access to reproductive health resources, it can alleviate healthcare costs and enhance public health outcomes.

Keywords

social marketing, unwanted pregnancy, low income country, public health

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Introduction

Unwanted pregnancy refers to any pregnancy that is unplanned or mistimed (Moore et al., 1995). It is a significant public health concern with serious biological, social, and psychological consequences, leading to increased healthcare costs across all income levels. According to the Centers for Disease Control and Prevention (CDC), between 2015 and 2019, approximately 121 million pregnancies were unintended, with 61% ending in abortion. In the United States, nearly half of all pregnancies are unintended, costing the healthcare system an estimated \$12.6 billion annually (Yusof et al., 2018). In high-income countries (HICs), government subsidies and social policies help mitigate some of the negative effects of unintended pregnancies. However, as global populations rise and healthcare costs escalate, the burden of unattended health issues increases significantly (Omrani-Khoo et al., 2013). This highlights the urgent need for policymakers to allocate healthcare resources effectively to maximize coverage without compromising quality and effectiveness.

The consequences of unintended pregnancies extend beyond economics and healthcare; they also impact social and psychological well-being (Wakhisi Simiyu et al., 2011). In low- and middle-income countries, maternal and childbirth complications are the leading cause of death among teenage girls (Unicef, 2017). Moreover, children born to adolescent mothers face higher risks of mental and psychological health complications, leading to stigma, domestic violence, and school dropout, which further perpetuate the poverty cycle (Rodríguez & Hopenhayn, 2007). Cases of newborn abandonment, such as a baby found in a garbage can in Buenos Aires on April 8, 2022, illustrate the extreme consequences of this crisis, particularly in low-income settings (Tiempo, 2022).

Various pregnancy prevention programs have been implemented, but many are costly and ineffective, with effects that tend to fade over time (Moore et al., 1995). That is why, since the 1970s, there has been a growing investment in Social Marketing Interventions (SMIs), which have been shown to promote long-term behavioral change in targeted populations (Quinn et al., 2010). Traditional commercial marketing techniques effectively influence consumer behavior for profit. However, when adapted for public health purposes, similar strategies—analysis, planning, execution, and evaluation—can be used to modify behaviors among at-risk populations, making social marketing a powerful tool for fostering positive community-wide changes.

A successful SMI requires a clear objective and prior consumer research to determine the best approach for influencing behavior. The “Four Ps” of Marketing provide a strategic framework: Product addresses a specific need or solution, Price represents the cost or effort required, Place refers to distribution channels, and Promotion involves communication strategies to drive behavioral change (P. Kotler & Lee, 2005). Over the years, SMIs have effectively influenced public health behaviors, increasing seatbelt use, reducing smoking rates, enhancing sidewalk safety, and promoting physical activity (Akhtar & Bhattacharjee, 2013).

More recently, Carter et al. (2017) found that social marketing is an effective tool for reducing teenage pregnancies, influencing behaviors through educational interventions. A systematic review of 53 randomized controlled trials involving 105,368 adolescents also concluded that combining educational and contraceptive-promotion programs is a cost-effective strategy in high-income countries (Wakhisi Simiyu et al., 2011). However, there is a gap in the literature regarding the impact of mass behavioral interventions on unintended pregnancies in low-income countries, as most systematic reviews focus on high-income settings, highlighting the need for updated research (Firestone et al., 2019).

Therefore, this systematic literature review aims to fill this gap by analyzing the effectiveness of social marketing interventions in reducing unintended pregnancies in low-income countries.

The findings will contribute to health policy development and implementation in these vulnerable regions.

Objectives

Primary Objective

- (1) To determine the effectiveness of social marketing in preventing unwanted pregnancies in LICs, through a systematic review.

Secondary Objectives

- (1) To identify social marketing strategies used to prevent unintended pregnancies in LICs
- (2) To assess the impact of SM strategies on unintended pregnancies in LICs.

Methods

This review was undertaken from November 2021 to March 2022 searching for papers indexed in PubMed, Embase, Medline, PsycINFO, CINAHL and Web of Science. Key words and their synonyms were used to perform an extensive search including additional studies. The search words used included “Social Marketing” OR “Social Marketing Theory”, “Pregnancy” OR “Pregnant” AND “Reproduction”, “Undesired” AND “Unwanted” OR “Unplanned”, “Anti-conception” OR “Anticonceptives” OR “Contraception” AND “Family planning”, “Low Income Countries” OR “developing nations” OR “underdeveloped nations”, “Effectiveness” “Effect” OR “Cost Effectiveness” OR “Rate of Pregnancy” OR “Social improvement” OR “Decision Making”. The bibliographies and reference lists of all articles identified were also used to perform additional searches for relevant papers. The full text of articles meeting the inclusion criteria were downloaded for data synthesis. The flow chart ([Figure 1](#)) summarizes this process.

Search Limitations and Recommendations for Future Investigations

For future investigations, besides using the key terms in this research, we encourage scholars to include a broader range of terms such as “behaviour change” or “social and behaviour change communications” or “SBCC”, to retrieve other relevant articles and studies, that could have been omitted for this systematic review.

Inclusion and Exclusion Criteria

The review was limited to papers with full text published in English, Spanish and Portuguese published from January 2007 to January 2022. Anecdotal information, expert opinions, commentaries, editorials, and all studies that did not use social marketing approach in preventing unintended pregnancies were excluded. Population of interest, intervention, Comparator and Outcome (PICO) framework was used to inform the search strategy.

Population of Interest: Low Income Countries. Noteworthy, some relevant studies were found in countries that were previously considered LICs, but their status changed later e.g. Cambodia, Zambia, and Tanzania ([WBG, 2020](#)).

Intervention of interest: Social Marketing interventions to prevent unwanted pregnancy with at least 3/6 Andreasen Benchmark criteria: Consumer research, Specific behaviour change goal, Segmentation and Targeting, Marketing mix, Exchange, and Competition ([Andreasen, 2002](#)).

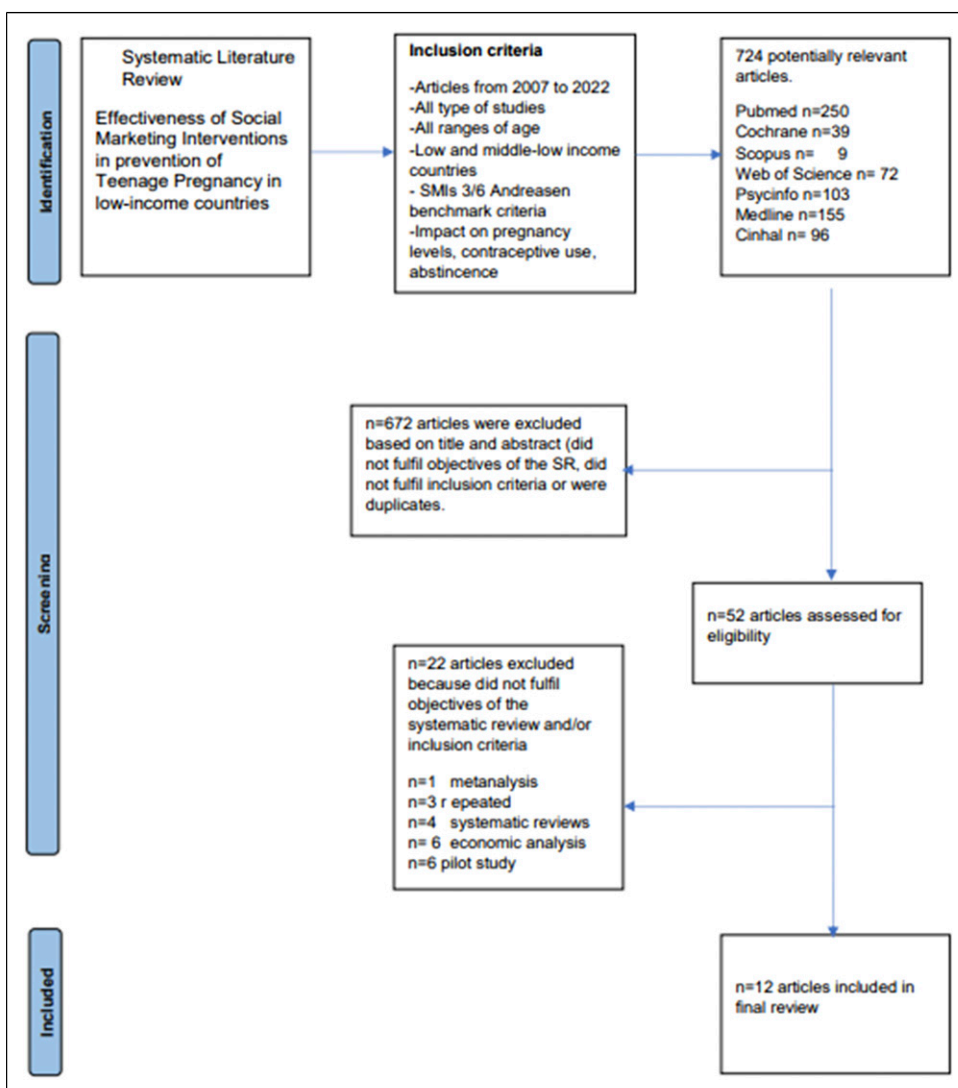


Figure 1. Flow diagram on the review process.

Comparator: Where applicable, interventions with comparison groups.

Outcome of interest: Unintended pregnancies, delay in sexual initiation or abstinence, use of contraceptives, knowledge of contraception and reproductive health and self-efficacy on sexual activity.

Results

Ten out of 12 studies were conducted in single countries while 2 studies involved multiple LICs. Six studies were cross-sectional studies, 2 randomised controlled trials, 1 quasi-experiment, 1 mixed method and 1 case study. Sample size ranged from 55 to 356,520 people. Studies involved women aged from 10 to 49 years and some included men and service providers. Six studies were of high quality, 5 moderate quality and 1 low quality (Tables 1 and 2).

Table 1. Summary of included studies on social marketing interventions for preventing unwanted pregnancies in low-income countries.

SN	Authors (Year)	Country	Study design	Sample size (n)	Study population	Quality
1.	Lutalo et al. (2010)	Uganda	Randomized Control Trial	19,523 women	Women aged 20–39 years.	Moderate
2.	Sotheary et al. (2016)	Cambodia	Observational Cross-sectional	1843 women in 2010; 2068 in 2011 and 2059 in 2012.	15–49 years, married, sexually active, non-pregnant and unwanted pregnancy in the next 2 years.	High
3.	Agha and Beaudoin (2012)	Pakistan	Cross-sectional	1,606 men	Men married to women aged 15–49 years	Moderate
4.	Paravani and Orgocka (2013)	Albania	Case study	5697 women	Married woman aged 15 to 44	Moderate
5.	Plautz and Meekers (2007)	Cameroon	Cross-sectional	1,956 youth in 2000, 3,237 in 2002, and 3,370 in 2003.	Unmarried youth aged 15–24 years	High
6.	Haile et al. (2018)	Egypt, Ghana, India, Jordan, Kenya, Nigeria, and Rwanda	Longitudinal	356,520 women	Aged 20–29 years	High
7.	Liu et al. (2018)	Nigeria	Mixed Methods	205 product providers and 1179 women DMPA-SC users	Never married and married women aged 23 to 40	Moderate
8.	Fatusi et al. (2008)	Nigeria	Quasi-experimental	3388 women	never-married young people (15–24 years)	Moderate
9.	Doyle et al. (2011)	Tanzania	Cross-sectional	13,814 young people	Aged 15–30 years	High
10.	Kavl et al. (2012)	Benin, Congo, Madagascar, Mali, Nigeria and Rwanda	Randomized Control Trial	55 women and 157 clinicians	Women aged 18 to 39	Low
11.	Muraya et al. (2011)	Kenya	Cross-sectional	98 participants (boys and girls) obtained from 12 focus groups, each with 8–9 members	Urban and peri-urban youth between the ages of 10 and 14.	High
12.	van Rossem and Dominique M. (2007)	Zambia	Cross-sectional	7,658 women and 2,145 men	15–49 years old women and 15–59 years old men	High

Table 2. Description of social marketing interventions, theoretical frameworks, and reported outcomes.

SN	Social Marketing Theory	Social Marketing Intervention	Outcomes
1	Social Cognitive Theory and Health Belief model	<ul style="list-style-type: none"> - Social Marketing intervention was introduced in 6 communities to increase family planning awareness and contraceptive use for 2 years. - Contraceptive methods were promoted through education, counselling, videos, and personal testimonies. - Meanwhile, 5 Control Communities (CG) received standard government family planning services with condom promotion across all communities. - Baseline and follow-up surveys were conducted. 	<ul style="list-style-type: none"> - The Intervention Communities (IC) had significantly lower pregnancy rates (13.5%) than the CC (16.8%; $p = .001$). - Pill usage was significantly higher in the IC (6.2%) than in the CC (4.0%; $p = .009$). - The IG had higher prevalence of combined pill and injectable contraceptive use (23.2%) than the CC (19.9%; $p = .009$).
2	Social Cognitive Theory and Health Belief Model	<ul style="list-style-type: none"> - The project sought to lower maternal mortality rates by utilising educational materials and improving access to "Medabon" (Mifepristone 200 mg and Misoprostol 800 µg). - Follow-up evaluations were done through surveys. - The baseline and follow up surveys were done to investigate the effects on contraception, reproductive health, and pregnancy rates in both the intervention and control groups. 	<ul style="list-style-type: none"> - Induced abortion rate decreased by 4%. - Manual vacuum aspiration reduced by 20% - Medicated abortion increased by 25% - Pharmacy-based abortion rose by 18% - Pregnancy rates post-intervention was lower in intervention than control group. - Overall contraceptive use increased by 7%. - Counselling on contraception post-abortion surged by 62.3%.

(continued)

Table 2. (continued)

SN	Social Marketing Theory	Social Marketing Intervention	Outcomes
3	Social Cognitive Theory and Health Belief Model	<ul style="list-style-type: none"> - A strategic advertising campaign for 'Touch condoms' was done through 2,156 broadcasted advertisements over 24 days. - The campaign utilised prominent private TV and radio in urban Pakistan, showcasing 6 radio jingles and a 3.5-minute TV advertisement. - TV ad portrayed an upper socioeconomic status couple's journey from college to marriage, including a doctor's recommendation of Touch condoms. - The husband ultimately selects Touch condoms from a store. - Follow-up surveys were used for evaluating the effectiveness and recall of advertisement. 	<ul style="list-style-type: none"> - Awareness of the Touch advertisement increased the likelihood of current contraceptive and condom use and reduced embarrassment during condom-related discussions and purchases. - Being aware of the advertisement positively influenced discussions about contraceptive methods with partners. - Exposure to the campaign led to significant actions, including first-time condom use, initiation of contraceptive methods, seeking medical advice, visiting family planning clinics, and discussing contraceptives with partners
4	Social Cognitive Theory and Health Belief Model	<ul style="list-style-type: none"> - This study focused on the NESMARK Foundation* which involved social marketing campaigns, training, and education. - Surveys conducted in 2002 and 2009 among married women aged 15–44 years assess the effectiveness of interventions and guide future actions. 	<ul style="list-style-type: none"> - For 7 years, there was a positive shift in contraceptive use and fertility rates. - Modern contraceptive prevalence increased, while fertility rates dropped from 2.6 to 1.6 children per woman. - Proportion of married women aged 15–44 years using modern contraception rose from 8% to 11% over 7 years, and the withdrawal method's usage declined significantly from 67% to 59%. - The programme's efforts also influenced government policies and National Strategy on Contraception.

(continued)

Table 2. (continued)

SN	Social Marketing Theory	Social Marketing Intervention	Outcomes
5	Social Learning Theory, Theory of reasoned action, and Health Belief model	<ul style="list-style-type: none"> - The “100% Jeune” intervention employs various mass media and interpersonal methods to promote healthy behaviours among youth. - Key components include peer education sessions, a weekly radio call-in show, a monthly magazine, and a serial radio drama. - Integrated campaigns across TV, radio, and billboards are supplemented by youth-friendly condom outlets. - Surveys at 18-month intervals between 2000 and 2003 assessed exposure levels to the campaign among different groups 	<ul style="list-style-type: none"> - Program reach expanded with increased attendance at peer education sessions (from 8% to 11%) and higher magazine readership (from 74% to 90%). - TV exposure recall slightly decreased, while radio show hearing increased. - Predictors of condom use improved with condom use indicators, though risky sexual activity levels remained unchanged. - Perceived condom attributes and access also improved, with more acknowledging condom effectiveness (76%–85% for females, 76%–88% for males). - Self-efficacy increased, with more comfort in buying and negotiating condom use. - Sexual activity levels remained steady, but condom use with casual partners increased for both females (33%–62%) and males (44%–76%) across survey
6	Theory of Reasoned Action	<ul style="list-style-type: none"> - Promotional campaigns ran in various countries from August 2016 to December 2017 to encourage the download of the Cycle Beads app. - The culturally appropriate Facebook campaigns targeted women of reproductive age (18–39) and highlighted successful app users. - The app, based on the Standard Days Method, helps track cycles and fertility windows. - Micro surveys were conducted during specific cycles, gathering crucial data primarily from women aiming to prevent pregnancy and monitor cycles 	<ul style="list-style-type: none"> - Within 10 months, the Cycle Beads app garnered 356,530 downloads and enjoyed a high 98% user questionnaire completion rate. - The app was predominantly used by individuals aged 20–34. - Reasons for its popularity include simplicity, naturalness, and concerns about side effects from other methods. - The Cycle Beads app often served as the initial family planning method, particularly in India (34.3%). Current methods varied by country, with high satisfaction rates; over 60% would “Definitely Recommend” the app, and 22% leaned towards recommending it

(continued)

Table 2. (continued)

SN	Social Marketing Theory	Social Marketing Intervention	Outcomes
7	Social Cognitive Theory and Health Belief model	<ul style="list-style-type: none"> - In Southwest Nigeria, the introduction of the subcutaneous depot medroxyprogesterone acetate contraceptive occurred between 2015 and 2017 via private sector channels and a community-based distribution approach. - The initiative, led by the Nigerian Government and DKT Nigeria, utilized diverse media including TV, radio, posters, and digital platforms. - The program, named DKT Bees, aimed to reach underserved women with contraception, offering counselling, pregnancy testing, condoms, and pills, while also referring clients to facilities for longer-acting contraceptives. 	<ul style="list-style-type: none"> - Sales primarily occurred in health facilities and retail drug shops (64%). - Provider training involved over 5,000 individuals, while community-based distribution engaged 211 workers. - Users were mainly married women aged 25 and above from higher wealth quintiles. - Positive user experiences resulted from provider recommendations, friend endorsements, and the method's convenience and reduced side effects. However, discontinuation rates were observed, especially among younger and unmarried users due to side effects. - Providers found the method easy to administer but noted higher costs. - The community-based distribution approach was well-received, emphasizing trustworthiness and approachability despite cost and attitude challenges.
8	Information, Motivation and Behaviour (IMB) model	<ul style="list-style-type: none"> - The nationwide multimedia campaign called Zip-Up! aimed to promote sexual abstinence as a strategy to prevent sexually transmitted infections (STIs) and unwanted pregnancies. - The campaign, active from 2004 to April 2005, employed billboards, TV and radio dramatizations, and educational materials to emphasize the importance of abstinence. - An innovative aspect was the Zip-Up! Negotiation cards, providing tips to counter sexual advances. - Baseline and follow-up surveys in 1999–2000 and 2002–2003 respectively were conducted to assess the campaign's impact, with over 9,000 participants involved. 	<ul style="list-style-type: none"> - Interpersonal communication encouraging abstinence was reported by approximately 28.9% of 15–19-year-olds and 29.1% of 20–24-year-olds. - Exposure to the Zip-Up! campaign was relatively low, with only 29.1% of participants reporting exposure. - Factors associated with higher campaign exposure included age, urban location, and economic status. - Intervention group exhibited significantly lower pregnancy rates (13.5%) compared to the control group (16.8%; $p = .001$) at follow-up.

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Table 2. (continued)

SN	Social Marketing Theory	Social Marketing Intervention	Outcomes
9	Social Learning Theory	<ul style="list-style-type: none"> - The intervention aimed at improving sexual and reproductive health among primary school students in grades 5–7. - It included teacher-led SRH education, youth-friendly SRH services, condom promotion, and community-wide activities. - The initial intervention resulted in increased SRH knowledge and improved attitudes, especially among males and unmarried individuals. - A long-term impact evaluation conducted nine years later aimed to assess the lasting effects of the intervention in the same communities 	<ul style="list-style-type: none"> - The intervention's long-term impact showed consistent effects across genders and marital statuses. - There was some evidence of reduced reported sexual partners in older age groups, but an increase among the youngest age group. - High-quality exposure to the intervention was strongly linked to improved pregnancy prevention knowledge and attitudes toward sex. However, it didn't significantly affect condom use during the last sexual encounter. - The impact did not vary significantly based on the number of years since respondents were last exposed to the intervention's in-school component
10	Exchange Theory	<ul style="list-style-type: none"> - Cycle Beads, a visual tool that supports the use of the Standard Days method, along with other family planning methods, were introduced in six African countries between 2004 and 2009. - The study evaluated the provision and access of Cycle Beads through pharmacies in comparison to clinics. - The evaluation specifically took place in Congo and Benin and included women who selected Cycle Beads as their family planning method. - The study focused on the correct use of Cycle Beads as a family planning method when obtained from pharmacies, comparing it to clinic usage. 	<ul style="list-style-type: none"> - The presence of an instructional insert was crucial for correct usage, as indicated by proper placement of the rubber ring on the right bead in relation to the menstrual cycle. - Clinical staff were more adept in identifying ineligible users than pharmacists in Congo. - Cycle Beads sales saw substantial growth in Togo and Rwanda between 2009 and 2010, highlighting increasing adoption and demand for the method.

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Table 2. (continued)

SN	Social Marketing Theory	Social Marketing Intervention	Outcomes
11	Social Cognitive Theory and Health Belief model	<ul style="list-style-type: none"> - A youth sexual abstinence campaign ran in Kenya from September 2004 to April 2005 through mass media and peer education components, including Chill clubs in primary schools. - Despite exposure to the campaign, it failed to influence youth decisions to delay their sexual debut. - The study aimed to understand this ineffectiveness and conducted an evaluation using focus groups from various schools to analyse campaign posters featuring urban youth displaying the “chill” symbol and expressing their intention to abstain from sex using the slang term ‘Nimechill’. 	<ul style="list-style-type: none"> - Results revealed that 85% of youth recalled the ‘Nimechill’ campaign, but during the same period, the proportion of Nairobi youth aged 10–14 engaging in sex increased from 88% to 92%. - Three out of four campaign posters conveyed confusing messages, with models’ appearances suggesting sexual activity. - Contradictory messages were present, like associating certain cultural aspects with promiscuity and showing images of women discussing consequences of sex, which conflicted with the abstinence message
12	Social Cognitive Theory and Health Belief model	<ul style="list-style-type: none"> - The Zambia Social Marketing Program, run by the Society for Family Health (SFH) since 1992, evaluated the reach and impact of radio and TV programs on family planning and HIV/AIDS, along with communications about Maximum condoms. - The study assessed exposure to specific programs like “Your Health Matters,” “Lifeline,” “AIDS and the Family,” and “Our Neighbourhood,” as well as Maximum condom messages among male respondents. 	<ul style="list-style-type: none"> - The study in Zambia showed that higher exposure to reproductive health programs, especially the radio program “Your Health Matters” and messages about Maximum brand condoms, significantly increased condom uses among men. - Those with the highest exposure were around 30% more likely to have tried condoms and 26%–87% more likely to have used a condom in their last intercourse. - Urban respondents generally had greater exposure, and exposure to family planning and HIV/AIDS programs positively impacted condom use.

Discussion

Unintended pregnancies pose a major public health challenge, making Social Marketing Interventions (SMIs) a crucial tool for promoting contraceptive use and informed decision-making. Many of these interventions are guided by behavioural theories that explain how individuals perceive risks, respond to social influences, and adopt preventive measures. Strategies such as mass media campaigns, community engagement, and digital tools have been effective in increasing contraceptive awareness and accessibility. While approaches emphasizing condoms, injectables, and mobile health solutions have shown strong results, abstinence-focused

interventions have struggled to drive long-term behavioural change. This discussion explores the role of SMIs in reducing unintended pregnancies, highlighting both successes and ongoing challenges.

Theoretical Frameworks in Social Marketing Interventions (SMIs)

The Health Belief Model (HBM), Social Cognitive Theory (SCT), and Social Learning Theory (SLT) emerged as the most frequently applied frameworks in the reviewed studies, serving as a foundation for designing and implementing Social Marketing Interventions (SMIs). These theories were employed in eight out of twelve studies, underscoring their critical role in influencing behavioral change.

The Health Belief Model emphasizes that individuals adopt specific behaviors to prevent undesirable outcomes based on their perceptions of threats—such as sexually transmitted diseases (STDs) or unintended pregnancies—and the perceived effectiveness of preventive actions. This belief-driven approach significantly increases the likelihood of behavior adoption. Social Cognitive Theory, in contrast, highlights self-efficacy and the influence of environmental and peer factors, demonstrating how individuals both influence and are influenced by their surroundings. This theory proved particularly effective in mass media interventions, including radio broadcasts, television programs, dramatizations, workshops, and billboards, which promoted various contraceptive methods to prevent STDs and unintended pregnancies. For example, studies by [Lutalo et al. \(2010\)](#) and [Liu et al. \(2018\)](#) demonstrated the impact of community leaders in promoting injectable contraceptives, illustrating how influential figures facilitate behavioral change. Social Learning Theory further reinforced this approach by emphasizing learning through observation, where individuals model behaviors demonstrated by others ([Evans, 2008](#)).

Other theoretical frameworks were also applied in select studies. The Theory of Reasoned Action (TRA), employed in studies by [Haile et al. \(2018\)](#) and [Plautz and Meekers \(2007\)](#) posits that a person's health behavior is determined by their intention, attitude, and the influence of subjective norms ([Hale et al., 2012](#)). These studies effectively used multicomponent infrastructures, such as the CycleBeads app and the 100% Le Jeune program, to frame desired behaviors as socially acceptable, ensuring that individual intentions aligned with societal norms. Similarly, the Information, Motivation, and Behavior Model (IMB), implemented in Nigeria's Zip-Up! campaign by [Fatusi et al. \(2007\)](#), emphasized the role of knowledge, motivation, and behavioral skills in achieving behavioral change ([Fisher et al., 2009](#)). This campaign successfully increased awareness of delayed sexual activity by leveraging public figures and targeted communication strategies.

Finally, the Exchange Theory, applied in [Kavle et al. \(2012\)](#) study, demonstrated how behavioral change occurs when perceived benefits outweigh associated costs ([Delamater, 2006](#)). This principle was exemplified by the successful adoption of CycleBeads, a low-cost, portable, and user-friendly contraceptive tool supporting the Standard Days Method, illustrating how accessible and cost-effective interventions can drive widespread behavioral change.

Effectiveness of Contraceptive Methods in SMIs

The studies demonstrated that preventing unwanted pregnancies was most effectively achieved through interventions focused on contraceptive methods that were easy to use, free from significant side effects, widely accessible, and affordable. For instance, Studies 3, 5, and 12 successfully utilized condom promotion to convey prevention messages and achieve their objectives, while studies 6 and 10 showed positive outcomes through the use of visual and interactive

contraceptive tools. Among these interventions, those promoting condoms as the primary contraceptive method proved most effective in reducing unintended pregnancies.

A notable example is a high-intensity advertising campaign in Pakistan for Touch condoms (Agha & Beaudoin, 2012), which significantly increased condom use and the adoption of other contraceptive methods, even among first-time users. Additionally, the campaign reduced the stigma associated with purchasing and negotiating condom use, with radio advertisements proving more effective than television in disseminating messages. Similarly, in Zambia (Van Rossem & Meekers, 2007), social marketing (SM) programs aimed at reducing HIV incidence and unintended pregnancies had a significant impact. The campaigns reached a substantial portion of the population, leading to a marked increase in condom use, particularly during last intercourse. The effects were more pronounced among men than women, and as observed in Pakistan, radio proved to be a more effective medium for message diffusion and campaign recall.

Studies by Lutalo et al. (2010) and Liu et al. (2018) employed similar strategies, though Liu's intervention yielded greater success. While Lutalo's study focused on DMPA-SC distribution, Liu's approach integrated pills, injectables, condoms, and comprehensive family planning education, leading to a significant increase in hormonal contraceptive use and a reduction in pregnancy rates in intervention communities compared to control groups. A key factor in Liu's success was the involvement of community-based reproductive agents, who effectively delivered contraceptives to underserved populations. However, high costs related to logistics, supervision, and provider training, coupled with high turnover rates, posed challenges for long-term sustainability.

Another exemplary case is the NESMARK initiative (Paravani & Orgocka, 2013), which, under the supervision of its executive director, has promoted, distributed, and sold subsidized contraceptives for over 15 years through targeted mass media campaigns. This program not only influenced government contraceptive policies but also contributed to lower fertility rates, increased modern contraceptive use, and a societal shift away from withdrawal as the preferred contraceptive method.

In Cambodia, a social marketing initiative was launched to distribute Medabon through public-sector pharmacies and hospitals to expand access to emergency contraception and reduce unsafe abortions (Sotheary et al., 2017). While the overall abortion rate did not decline, the initiative significantly reduced unsafe abortions, underscoring the critical need for affordable and safe abortion services. This is particularly important for low-income women, who are often forced to resort to unsafe procedures performed by unqualified practitioners.

Among the most impactful studies in this review were those conducted by Kavle et al. (2012) and Haile et al. (2018), both focused on the Standard Days Method. Kavle's study introduced CycleBeads as a tangible contraceptive tool, achieving high compliance rates due to its clear instructional inserts. This study also highlighted the essential role of pharmacies as a primary source of contraceptives in African populations. Haile, in contrast, employed an Android app to promote the same method, integrating reminders to enhance compliance. The success of this electronic intervention has since inspired the development of new apps tailored to users with varying cycle lengths, featuring pop-up reminders to improve sexual and reproductive health education.

Conversely, Studies 1, 2, and 7 faced significant challenges due to the complexity of the contraceptive methods used, side effects, and lack of affordability. These barriers likely contributed to premature discontinuation of contraceptive use and a decline in positive outcomes after the interventions ended, emphasizing the importance of ensuring accessible, user-friendly, and cost-effective family planning solutions.

Challenges with Sexual Delay and Abstinence Campaigns

Campaigns promoting sexual delay and abstinence as a Social Marketing (SM) approach were the least effective in preventing unwanted pregnancies, encouraging contraceptive use, or achieving lasting recall among target populations. Even when designed using the Four Ps of Social Marketing (Product, Price, Place, Promotion), Studies 8 and 11 demonstrated limited acceptance, particularly among youth audiences. These findings highlight the shortcomings of abstinence-focused approaches and emphasize the need for realistic, accessible, and evidence-based sexual health interventions that align with the needs of the target demographic.

The review revealed that large-scale media campaigns promoting abstinence had minimal impact on youth decisions regarding sexual activity delay. One major factor contributing to their low success rate was the lack of target population involvement in campaign design, coupled with contradictory messaging. For instance, the Nimechill campaign in Kenya achieved an impressive 85% recall rate, yet data showed an increase in youth sexual activity during the campaign period, prompting further studies to investigate its shortcomings (Muraya et al., 2011). Similarly, in Nigeria, the Zip-Up! Campaign attained a 29% recall rate, but those who recalled the campaign were primarily urban, educated, and older individuals, whereas a significant portion of Nigeria's population—over 40%—lives below the poverty line. While the campaign incorporated market research before its launch and led to more positive perceptions of abstinence among exposed youth, its overall impact remained limited (Fatusi et al., 2007).

The MEMA kwa Vijana (MkV) primary school intervention in Tanzania produced mixed results (Doyle et al., 2011). The campaign's abstinence component failed to reduce the number of sexual partners among participants, with an increase in sexual partners observed among the youngest age group. However, the intervention successfully improved sexual and reproductive health knowledge, increased contraceptive use, and led to a decrease in pregnancy rates. Notably, the most significant benefits were seen in groups that received longer exposure to the intervention. Despite its achievements, the program faced financial challenges, primarily due to the high costs of teacher supervision and training, limiting its scalability.

In Cameroon, the 100% Le Jeune campaign sought to prevent unwanted pregnancies and STDs through abstinence promotion and additional strategies (Plautz & Meekers, 2007). While the campaign did not succeed in reducing sexual activity or the number of sexual partners, it reached one-fourth of the target population and achieved a higher recall rate compared to other reproductive health programs in the country. Additionally, it significantly increased predictors of condom use among both male and female participants, leading to greater condom adoption with regular and casual partners.

Finally, the introduction of the long-acting injectable contraceptive DMPA-SC in Nigeria through a large-scale, multi-component SM campaign encountered significant challenges (Liu et al., 2018). Although the first injection was provided for free, and a Community-Based Distribution Model (CBDM) was developed to ensure wider access, the intervention proved financially unsustainable. Additionally, only 50% of users returned for a second injection, citing side effects and high costs as primary deterrents. Nevertheless, the CBDM successfully expanded access to rural communities, encouraging users to adopt and switch contraceptive methods, despite the program's long-term sustainability concerns.

Conclusion

Social Marketing (SM) has proven to be a valuable strategy for optimizing health resources in low-income countries, yet significant gaps persist in its application to prevent unwanted pregnancies. Interventions promoting sexual abstinence have shown limited efficacy, often yielding

insignificant or counterproductive outcomes. In the digital age, with widespread access to hypersexualized content, SMIs should focus on promoting safer sexual practices, comprehensive sexual health education, and contraceptive use as central components of their strategies. These programs should address the biological, psychological, and social implications of sexual relationships while ensuring accessibility to reproductive health resources.

From a public health perspective, while injectable contraceptives and pills are cost-effective for reducing unwanted pregnancies, they fail to address the prevention of sexually transmitted diseases (STDs), highlighting the need for broader strategies. Annual condom-focused campaigns, supported by family planning education and delivered through diverse communication channels like radio and mobile platforms, have shown to be more effective, particularly in reaching rural and younger populations.

Significant barriers remain in accessing contraceptives, particularly for women and girls in developing nations. Community-based distribution models and integration with pharmacies can improve access, but these efforts must include training for pharmacists and clear instructional materials for end-users. Social media platforms have also emerged as powerful tools for engaging younger demographics, with campaigns on TikTok and Instagram effectively raising awareness and changing behaviors. Influencer-driven initiatives further emphasize the potential of peer-to-peer networks to promote safe sexual practices and contraceptive use (Bull et al., 2012).

While challenges such as limited academic infrastructure and high costs of implementation persist in emerging countries, sustained investment and innovative approaches can enable SMIs to revolutionize sexual and reproductive health, addressing critical needs in underserved populations globally.

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