

Evaluation of the effectiveness of interventions, such as educational campaigns and peer-led initiatives, in promoting awareness and acceptance of rapid testing

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Abstract: The research aimed to examine interventions promoting awareness and acceptance of rapid testing for infectious diseases. The review employed rigorous methods to identify and analyze relevant studies, including educational campaigns and peer-led initiatives. Key findings from the review highlighted the effectiveness of both types of interventions in increasing awareness, improving attitudes, and encouraging testing uptake among diverse populations. Educational campaigns successfully disseminated information and reduced stigma surrounding testing, while peer-led initiatives leveraged social support and trust to engage communities effectively. Implications of the findings underscore the importance of tailored, culturally sensitive interventions that address diverse needs and contexts. Recommendations include investing in comprehensive public health campaigns, reducing structural barriers to testing, promoting community engagement, and integrating rapid testing into routine healthcare services. Overall, the review emphasizes the importance of evidence-based strategies to promote awareness and acceptance of rapid testing, ultimately contributing to improved public health outcomes and disease prevention efforts.

Keywords: Acceptance; Awareness; Infectious diseases; Interventions; Rapid testing.

Introduction

Rapid testing plays a crucial role in public health by providing timely and accurate detection of infectious diseases, enabling prompt treatment, and preventing further transmission (Chen et al., 2019; Jain et al., 2021). In the context of infectious diseases such as HIV, hepatitis, influenza, and now notably COVID-19, rapid testing has become an essential tool for early diagnosis and containment. Unlike traditional laboratory tests, rapid tests deliver results within minutes to hours, allowing for immediate actions to be taken (Cheng et al., 2020). This speed is particularly critical in identifying and isolating infected individuals quickly, thus reducing the risk of further spread within communities. Furthermore, rapid testing facilitates timely access to care and treatment, improving health outcomes and reducing the burden on healthcare systems. Rapid testing is also vital in screening programs, outbreak investigations, and resource-limited settings where access to laboratory facilities may be limited. Therefore, promoting awareness and acceptance of rapid testing is imperative for enhancing public health preparedness and response to infectious diseases.

Awareness and acceptance of rapid testing are pivotal factors in effectively combating infectious diseases and promoting public health (Gala & Doss, 2021). Firstly, heightened awareness ensures that individuals understand the importance of rapid testing in disease detection and control. When people are aware of the availability and benefits of rapid testing, they are more likely to seek testing when needed, leading to early detection and treatment. This, in turn, helps in reducing transmission rates and mitigating the impact of outbreaks. Moreover, acceptance of rapid testing among the population is crucial for

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successful implementation. Acceptance involves trust in the accuracy and reliability of rapid tests, as well as confidence in the confidentiality of results. When individuals trust rapid testing methods, they are more likely to participate in testing initiatives and adhere to public health recommendations, such as quarantine or treatment. Additionally, acceptance reduces stigma associated with testing, encouraging more people to get tested without fear of discrimination or judgment. Overall, awareness and acceptance of rapid testing are essential for effective disease control, outbreak management, and public health interventions.

Interventions aimed at promoting awareness and acceptance of rapid testing encompass a diverse range of strategies, with educational campaigns and peer-led initiatives being central components. Educational campaigns play a vital role in disseminating information about the importance of rapid testing, its benefits, and how to access testing services (Panjaitan et al., 2023). These campaigns often utilize various channels such as media, community events, and digital platforms to reach a wide audience (Kim, 2020). They focus on increasing knowledge about the purpose of rapid testing, its accuracy, and its role in disease prevention and control (Land et al., 2019). On the other hand, peer-led initiatives leverage the influence of peers and community leaders to promote testing uptake and acceptance within specific populations. These initiatives involve training and empowering individuals within communities to serve as peer educators or advocates for rapid testing. Peer-led approaches are particularly effective in reaching marginalized or hard-to-reach populations, fostering trust, and reducing stigma associated with testing. By combining educational campaigns and peer-led initiatives, interventions can address knowledge gaps, overcome barriers to testing, and foster a culture of regular testing, ultimately contributing to improved public health outcomes.

The purpose of conducting a research on the effectiveness of interventions promoting awareness and acceptance of rapid testing is multifaceted. Firstly, it aims to provide a comprehensive understanding of existing research and evidence regarding interventions in this domain. By systematically reviewing relevant studies, the review seeks to identify common trends, successful strategies, and gaps in knowledge. Furthermore, it aims to synthesize the findings to evaluate the overall effectiveness of interventions, such as educational campaigns and peer-led initiatives, in promoting awareness and acceptance of rapid testing across different populations and settings. Through this synthesis, the review aims to provide insights into which approaches are most effective and under what circumstances, guiding future public health interventions and policies. Additionally, by critically appraising the quality of included studies, the review aims to assess the robustness of evidence and highlight areas needing further research. Ultimately, the systematic literature review serves to inform public health practitioners, policymakers, and researchers on best practices for promoting rapid testing awareness and acceptance, thereby contributing to improved health outcomes and disease control efforts.

Methodology

The systematic literature review employed a rigorous search strategy to identify relevant studies addressing interventions aimed at promoting awareness and acceptance of rapid testing. The search strategy involved using multiple databases including PubMed, Scopus, Web of Science, and Google Scholar. Keywords and search terms related to rapid testing, awareness, acceptance, educational campaigns, peer-led initiatives, and related concepts were carefully selected and combined using Boolean operators to ensure comprehensive coverage. Additionally, the search was supplemented by manual searching of reference lists of included studies and relevant review articles to identify any additional relevant literature. The inclusion criteria focused on studies published in peer-reviewed journals, written in English, and reporting on interventions targeting awareness and acceptance of rapid testing across various populations and contexts. Grey literature and unpublished studies were not included to maintain the quality and reliability of the review findings. This systematic approach ensured a thorough and exhaustive search process to capture all relevant evidence available in the literature.

The inclusion and exclusion criteria for selecting studies in this systematic literature review were carefully defined to ensure relevance, quality, and consistency across the included literature. Studies meeting the following criteria were included: Firstly, studies focused on interventions aimed at promoting awareness and acceptance of rapid testing for infectious diseases such as HIV, hepatitis, influenza, and COVID-19. Secondly, only peer-reviewed articles published in English were considered. Thirdly, studies reporting on educational campaigns, peer-led initiatives, or similar interventions were included. Fourthly, included studies needed to provide outcome measures related to awareness and/or acceptance of rapid testing, such as changes in knowledge, attitudes, behaviors, or testing uptake rates. Lastly, studies conducted in various populations and settings were considered to capture diverse perspectives and contexts.

Conversely, studies were excluded if they did not meet the above criteria. Specifically, studies that focused solely on laboratory techniques, diagnostic accuracy, or treatment outcomes without addressing awareness or acceptance of rapid testing were excluded. Additionally, reviews, commentaries, conference abstracts, and grey literature were excluded to maintain the rigor and reliability of the review. Studies not accessible in full-text format or not available in English were also excluded due to limitations in data extraction and analysis. By adhering to these inclusion and exclusion criteria, the review aimed to ensure a focused selection of studies that provided relevant and reliable evidence on interventions promoting awareness and acceptance of rapid testing.

The data extraction process involved systematically collecting relevant information from each included study to address the objectives of the systematic literature review. A standardized data extraction form was developed to capture key details consistently across studies. This form included categories such as study characteristics (e.g., author, year, study design), intervention description (e.g., type of intervention, target population), outcome measures (e.g., changes in awareness, acceptance, testing uptake), and findings related to the effectiveness of interventions. Two independent reviewers conducted the data extraction process, with any discrepancies resolved through discussion or consultation with a third reviewer if needed.

For each included study, the reviewers extracted quantitative data such as effect sizes, p-values, and confidence intervals, as well as qualitative data including key findings, themes, and recommendations. Relevant data were extracted to assess the impact of interventions on awareness and acceptance of rapid testing, identify factors influencing effectiveness, and understand any reported challenges or limitations. Additionally, information on study quality, including risk of bias assessment, was extracted to inform the overall interpretation of the findings.

Throughout the data extraction process, efforts were made to ensure accuracy and consistency in data collection. Any uncertainties or ambiguities were clarified by referring back to the original studies. The extracted data were then synthesized and analyzed to provide a comprehensive overview of the effectiveness of interventions in promoting awareness and acceptance of rapid testing. This systematic approach to data extraction allowed for a rigorous analysis of the literature and enabled the review to draw meaningful conclusions and implications for practice and future research.

Assessing the quality of included studies was a critical step in ensuring the reliability and validity of findings in this systematic literature review. To evaluate the quality of each study, a standardized assessment tool was employed, tailored to the study designs identified. Commonly used tools such as the Newcastle-Ottawa Scale for observational studies or the Cochrane Risk of Bias tool for randomized controlled trials were utilized. Two independent reviewers assessed the quality of each study, with discrepancies resolved through discussion or consultation with a third reviewer when necessary.

Key aspects evaluated included the study design, sample size, representativeness of the sample, control of confounding variables, measurement of outcomes, and reporting of results. Studies were rated based on the risk of bias or methodological quality,

considering factors such as selection bias, information bias, and confounding. High-quality studies with robust methodologies and minimal risk of bias were given greater weight in the synthesis of findings.

The quality assessment aimed to provide transparency regarding the strengths and limitations of each study, informing the overall interpretation of results. Studies rated as low quality or with a high risk of bias were not excluded from the review but were considered in the discussion of limitations and potential sources of heterogeneity. By systematically assessing the quality of included studies, this review ensured that conclusions drawn were based on the most reliable evidence available, enhancing the credibility and validity of findings.

Interventions Promoting Awareness and Acceptance

Overview of educational campaigns

Educational campaigns are a prominent intervention strategy aimed at increasing awareness and acceptance of rapid testing for infectious diseases. These campaigns utilize various channels and methods to disseminate information, raise awareness, and promote behavior change. Several notable examples of educational campaigns have been implemented worldwide to encourage testing uptake and understanding among diverse populations. For instance, the "Know Your Status" campaign launched by the Centers for Disease Control and Prevention (CDC) in the United States emphasizes the importance of HIV testing and encourages individuals to know their HIV status through rapid testing. Similarly, the "Get Tested" campaign initiated by health authorities in several countries, including the UK and Australia, aims to increase awareness of testing availability and reduce stigma associated with HIV, hepatitis, and other sexually transmitted infections. These campaigns often utilize multimedia approaches, including television, radio, social media, and community events, to reach target audiences effectively.

Grassroots campaigns led by local organizations or community groups have been successful in promoting awareness and acceptance of rapid testing. For example, community-based organizations in high-risk populations have developed culturally tailored campaigns to address specific barriers and increase testing among marginalized communities. These campaigns often involve community outreach, peer education, and the distribution of educational materials in multiple languages. By providing accurate information about rapid testing, its benefits, and where to access testing services, educational campaigns play a crucial role in empowering individuals to take control of their health and make informed decisions about testing.

Educational campaigns employ various strategies to effectively convey information and promote awareness and acceptance of rapid testing for infectious diseases. One common strategy is the use of multimedia platforms such as television, radio, social media, and online platforms to reach a wide audience. These campaigns often feature engaging content, including testimonials, educational videos, infographics, and interactive quizzes, to increase knowledge and encourage testing uptake. Additionally, community-based workshops, seminars, and events provide opportunities for direct interaction and education, allowing individuals to ask questions and receive personalized information.

Educational campaigns often employ targeted messaging to address specific populations or communities. This includes tailoring messages based on demographics, cultural backgrounds, and risk factors, ensuring relevance and resonance with the target audience. Culturally appropriate materials, including language translations and culturally sensitive imagery, help in overcoming barriers to understanding and acceptance.

The effectiveness of educational campaigns in promoting awareness and acceptance of rapid testing has been demonstrated in various studies. Research has shown that well-designed campaigns can significantly increase knowledge about testing, change attitudes towards testing, and ultimately lead to increased testing uptake. Effectiveness is often measured through indicators such as changes in knowledge levels, attitudes towards

testing, and actual testing rates following campaign implementation. While the impact may vary depending on the campaign's reach, duration, and target audience, evidence suggests that educational campaigns play a crucial role in shaping behaviors and promoting positive health outcomes related to rapid testing.

Educational campaigns play a pivotal role in influencing awareness and acceptance of rapid testing for infectious diseases through their informative and persuasive messaging. These campaigns have demonstrated significant impacts on increasing awareness and acceptance of rapid testing among various populations. By providing accurate information about the purpose, benefits, and accessibility of rapid testing, educational campaigns help individuals understand the importance of early detection and diagnosis.

One of the primary impacts of educational campaigns is the improvement in awareness levels regarding rapid testing. Campaigns disseminate key information about the availability of rapid testing services, the diseases they detect, and the advantages of early detection. As a result, individuals become more knowledgeable about the existence and utility of rapid testing, leading to increased awareness within communities.

Educational campaigns contribute to enhancing acceptance of rapid testing by addressing misconceptions, reducing stigma, and fostering trust in testing services. Through targeted messaging and culturally sensitive approaches, campaigns help normalize testing behaviors and encourage individuals to seek testing without fear or hesitation. By highlighting the benefits of testing for both individual health and community well-being, these campaigns promote a positive attitude towards rapid testing.

Research has shown that educational campaigns are effective in improving both awareness and acceptance of rapid testing. Studies have demonstrated increases in knowledge levels, positive shifts in attitudes towards testing, and higher rates of testing uptake following campaign exposure. Overall, educational campaigns serve as powerful tools in shaping public perceptions, behaviors, and attitudes towards rapid testing, ultimately contributing to improved public health outcomes and disease prevention efforts.

Overview of peer-led initiatives

Peer-led initiatives are community-based interventions where individuals within a particular community or population are trained to lead and facilitate activities aimed at promoting awareness and acceptance of rapid testing for infectious diseases. These initiatives harness the influence of peers or individuals who share common backgrounds, experiences, or identities with the target audience. Characteristics of peer-led initiatives include the utilization of trusted individuals from within the community, such as peer educators, community health workers, or peer advocates, to deliver health messages and interventions. Peers are often seen as credible sources of information and support, making them effective messengers for promoting health-related behaviors.

These initiatives are characterized by their participatory and empowering approach, where community members actively engage in planning, implementing, and evaluating interventions. Peer-led initiatives often employ culturally sensitive and contextually relevant strategies to address the unique needs and preferences of the target population. They may involve informal discussions, group activities, storytelling, role-playing, and community events to disseminate information and facilitate dialogue around rapid testing.

Peer-led initiatives emphasize building trust, rapport, and social support within the community, which are crucial factors in influencing behavior change. Peers are able to connect with their peers on a personal level, understanding their concerns, addressing misconceptions, and providing emotional support throughout the testing process. This approach helps reduce stigma associated with testing and increases acceptance of rapid testing within the community.

Peer-led initiatives are characterized by their grassroots nature, peer-to-peer communication, cultural relevance, and emphasis on community engagement. These initiatives empower individuals within the community to take ownership of their health and well-being, driving positive changes in attitudes towards rapid testing and promoting healthier behaviors.

Peer-led initiatives are effective community-based interventions that leverage the influence of peers to promote awareness and acceptance of rapid testing for infectious diseases. Numerous successful peer-led interventions have been implemented worldwide, demonstrating the impact of this approach in diverse settings. One notable example is the "Buddy Program" developed by community organizations to increase HIV testing among men who have sex with men (MSM). In this program, trained peers provide support, information, and encouragement to their peers to access HIV testing services, addressing barriers such as fear, stigma, and misinformation.

Another successful peer-led initiative is the "Promotoras de Salud" program in Latino communities, where trained peer health educators, known as promotoras, educate community members about HIV and promote testing uptake. These promotoras, who are trusted members of the community, deliver culturally appropriate information and provide social support to encourage testing and linkage to care.

Peer-led initiatives have been effective in promoting rapid testing for hepatitis C among people who inject drugs (PWID). Peer navigators, who are individuals with lived experience of substance use, provide outreach, education, and support to their peers to increase awareness and access to hepatitis C testing and treatment services.

Peer-led initiatives have been successful in educational settings, such as college campuses, where peer educators organize events, distribute informational materials, and facilitate discussions to promote HIV and STI testing among students.

These examples highlight the effectiveness of peer-led interventions in promoting awareness, acceptance, and uptake of rapid testing across various populations and settings. Peer-led approaches capitalize on peer networks, trust, and shared experiences to overcome barriers to testing and facilitate behavior change, ultimately contributing to improved health outcomes and disease prevention efforts.

Peer-led initiatives have demonstrated remarkable effectiveness in promoting awareness and acceptance of rapid testing for infectious diseases across diverse populations and settings. By leveraging peer networks, trust, and shared experiences, these initiatives have been successful in engaging communities and overcoming barriers to testing. Peer-led approaches foster a sense of empowerment and ownership among community members, leading to increased awareness and acceptance of rapid testing.

One key aspect of the effectiveness of peer-led initiatives is their ability to deliver culturally sensitive and contextually relevant messaging. Peers are well-positioned to understand the unique needs, concerns, and cultural nuances of their communities, making them effective messengers for health promotion. This personalized approach helps in addressing misconceptions, reducing stigma, and increasing confidence in testing.

Peer-led initiatives often create safe spaces for open dialogue, where individuals feel comfortable discussing sensitive topics related to testing. Peers provide social support, encouragement, and practical assistance, such as accompanying individuals to testing sites, which can help alleviate fears and anxieties associated with testing.

Research has consistently shown that peer-led interventions lead to positive changes in attitudes towards testing and increased testing uptake. Studies have demonstrated that peer-led approaches result in higher rates of testing participation, increased knowledge about testing, and improved perceptions of testing accessibility and convenience.

Peer-led initiatives play a vital role in promoting rapid testing awareness and acceptance by fostering trust, providing culturally tailored support, and empowering individuals to

take control of their health. These initiatives have proven to be effective in reaching underserved populations, reducing health disparities, and contributing to improved public health outcomes related to infectious diseases.

Evaluation Methods

Several metrics are commonly used to evaluate the effectiveness of interventions aimed at promoting awareness and acceptance of rapid testing for infectious diseases. One primary metric is changes in knowledge levels, measured through pre- and post-intervention assessments or surveys. These assessments gauge participants' understanding of rapid testing, its benefits, and how to access testing services. Another important metric is attitudes towards testing, which assesses changes in individuals' perceptions, beliefs, and attitudes regarding rapid testing, including perceived barriers and benefits.

Testing uptake rates are a key metric used to evaluate the effectiveness of interventions. This metric measures the actual number of individuals who undergo testing following exposure to the intervention. Increased testing uptake indicates the intervention's success in motivating individuals to seek testing and overcome barriers to access.

Behavioral outcomes, such as frequency of testing, completion of testing, and linkage to care following a positive test result, are important metrics in evaluating intervention effectiveness. These outcomes provide insights into whether the intervention leads to sustained behavior change and improved health-seeking behaviors among participants.

Other metrics include changes in stigma levels related to testing, community engagement levels, and cost-effectiveness of interventions. Qualitative metrics, such as participant feedback, testimonials, and focus group discussions, also provide valuable insights into participants' experiences and perceptions of the intervention.

A combination of quantitative and qualitative metrics is used to comprehensively evaluate the effectiveness of interventions in promoting awareness and acceptance of rapid testing. These metrics provide valuable data to assess the impact of interventions, inform program improvements, and guide future public health initiatives.

Surveys, interviews, and other evaluation tools are commonly employed to assess the effectiveness of interventions aimed at promoting awareness and acceptance of rapid testing for infectious diseases. Surveys are often utilized to collect quantitative data on participants' knowledge, attitudes, behaviors, and testing uptake before and after the intervention. Pre- and post-intervention surveys allow researchers to measure changes in awareness levels, attitudes towards testing, and other relevant outcomes, providing quantitative evidence of intervention impact.

In addition to surveys, interviews and focus group discussions are valuable qualitative evaluation tools used to gather in-depth insights into participants' experiences, perceptions, and the factors influencing their attitudes and behaviors related to rapid testing. Interviews allow for open-ended exploration of participants' thoughts, feelings, and experiences, providing rich, detailed data. Focus group discussions facilitate group interaction, allowing participants to express diverse perspectives and uncover shared themes.

Observational methods, such as direct observation or structured observations of intervention activities, can also provide valuable insights into participant engagement, program implementation, and the context in which interventions occur. These methods help researchers understand how interventions are delivered, received, and experienced by participants.

Evaluation tools may include validated scales or questionnaires designed to measure specific constructs, such as stigma towards testing or readiness to undergo testing. These tools provide standardized measures for assessing changes in attitudes and perceptions over time.

Surveys, interviews, and other evaluation tools offer complementary approaches to assess the effectiveness of interventions promoting awareness and acceptance of rapid testing. By combining quantitative and qualitative data collection methods, researchers gain a comprehensive understanding of intervention impact, participant experiences, and areas for improvement, ultimately informing future program development and public health strategies.

Evaluating the effectiveness of interventions aimed at promoting awareness and acceptance of rapid testing for infectious diseases presents several challenges and limitations. One significant challenge is the difficulty in measuring behavior change accurately. While changes in knowledge, attitudes, and intentions are important indicators, they may not always translate into actual behavior change, such as increased testing uptake. Additionally, establishing causality between the intervention and observed changes can be challenging, especially in non-randomized study designs where other factors may influence outcomes.

Another challenge is the potential for social desirability bias in self-reported data. Participants may provide responses they believe are socially acceptable or expected, rather than reflecting their true attitudes or behaviors. This bias can affect the reliability and validity of survey and interview data, leading to overestimation of intervention effects.

The short-term nature of many interventions and evaluation periods may limit the ability to assess sustained behavior change over time. Follow-up assessments conducted immediately after the intervention may not capture long-term impacts or changes in testing behavior that occur later.

Interventions targeting marginalized or hard-to-reach populations may face challenges in recruitment, retention, and data collection. These populations may have limited access to healthcare services, lower literacy levels, or mistrust of authorities, making it difficult to reach and engage them effectively.

Resource constraints, including limited funding, time, and expertise, can also pose challenges in conducting rigorous evaluations. Small sample sizes, inadequate follow-up periods, and lack of control groups may limit the generalizability and validity of study findings.

Despite these challenges, it is crucial to recognize the importance of evaluating intervention effectiveness to guide evidence-based practice and policy. Addressing these challenges requires careful consideration of study design, data collection methods, and interpretation of findings, as well as collaboration with diverse stakeholders and communities. By acknowledging and addressing these limitations, researchers can improve the rigor and validity of evaluations, ultimately enhancing our understanding of what works in promoting awareness and acceptance of rapid testing.

Findings

Findings from reviewed studies

The reviewed studies provided valuable insights into the effectiveness of educational campaigns in promoting awareness and acceptance of rapid testing for infectious diseases. Overall, educational campaigns were found to be effective in increasing knowledge about rapid testing, improving attitudes towards testing, and influencing testing behaviors across various populations and settings. Many campaigns utilized multimedia approaches, community engagement activities, and culturally tailored messaging to effectively reach target audiences. Studies consistently showed that exposure to educational campaigns led to significant improvements in awareness levels, with participants reporting greater understanding of the purpose and benefits of rapid testing.

Educational campaigns were successful in reducing stigma associated with testing, addressing misconceptions, and increasing confidence in testing services. By providing accurate information and addressing barriers to testing, campaigns helped individuals feel

more comfortable and motivated to seek testing when needed. Notably, campaigns targeting specific populations, such as MSM, racial/ethnic minorities, or people living in high-prevalence areas, were particularly effective in reaching and engaging these groups.

Educational campaigns demonstrated a positive impact on testing uptake rates, with participants more likely to undergo testing following exposure to campaign messages. Increased testing uptake was attributed to improved knowledge, reduced stigma, and increased awareness of testing options. These findings underscore the importance of educational campaigns as effective tools in promoting awareness and acceptance of rapid testing, ultimately contributing to improved public health outcomes and disease prevention efforts.

The reviewed studies shed light on the significant impact of peer-led initiatives in promoting awareness and acceptance of rapid testing for infectious diseases. Peer-led interventions were consistently found to be effective in engaging communities, overcoming barriers to testing, and fostering positive health-seeking behaviors. One key finding was the ability of peer-led initiatives to establish trust and rapport within communities, facilitating open dialogue and reducing stigma associated with testing. Peers, who often share common backgrounds and experiences with their peers, were effective messengers in delivering culturally sensitive information and providing social support to encourage testing uptake.

Peer-led initiatives demonstrated success in increasing awareness levels, with participants reporting greater knowledge about rapid testing and its benefits. These initiatives were particularly effective in reaching marginalized or hard-to-reach populations, including MSM, racial/ethnic minorities, and people living in underserved communities. By leveraging peer networks and community connections, peer-led interventions were able to reach individuals who may not have otherwise accessed testing services.

Peer-led initiatives were successful in promoting positive attitudes towards testing, reducing fear, and increasing confidence in testing services. Participants felt more comfortable and supported in accessing testing services when peers were involved in delivering information and encouragement. This resulted in increased testing uptake rates and improved linkage to care among those who tested positive.

The findings suggest that peer-led initiatives play a crucial role in promoting awareness, acceptance, and uptake of rapid testing for infectious diseases. Their effectiveness in engaging communities, providing support, and fostering behavior change underscores the importance of peer-led approaches in public health interventions aiming to improve testing access and reduce the burden of infectious diseases.

The findings from the reviewed studies highlighted several key factors that influence the effectiveness of interventions aimed at promoting awareness and acceptance of rapid testing for infectious diseases. One significant factor identified was the importance of tailoring interventions to the specific needs, preferences, and characteristics of the target population. Interventions that were culturally relevant, linguistically appropriate, and sensitive to the social context of the community were more successful in engaging participants and promoting behavior change.

The mode of intervention delivery emerged as a critical factor influencing effectiveness. Studies suggested that interventions utilizing multiple channels, such as multimedia approaches, community events, peer networks, and healthcare settings, were more effective than single-channel approaches. Interactive and participatory methods, such as workshops, discussions, and role-playing activities, were also found to be more engaging and impactful.

The role of social support and peer influence was consistently highlighted as a facilitator of intervention effectiveness. Interventions that involved peers or community leaders in delivering messages, providing support, and encouraging testing uptake were more successful in promoting positive attitudes and behaviors towards testing. Peer-led

initiatives, in particular, were effective in building trust, reducing stigma, and increasing testing uptake rates among targeted populations.

The accessibility and availability of testing services were identified as important determinants of intervention effectiveness. Interventions that addressed structural barriers to testing, such as cost, transportation, and hours of operation, were more likely to result in increased testing uptake and linkage to care.

The findings underscored the importance of considering contextual factors, community engagement, and the socio-cultural environment when designing and implementing interventions to promote awareness and acceptance of rapid testing. By addressing these factors, interventions can be more tailored, relevant, and effective in improving testing access and reducing the burden of infectious diseases within communities.

The findings from the reviewed studies revealed notable regional and population-specific differences in the effectiveness of interventions aimed at promoting awareness and acceptance of rapid testing for infectious diseases. Several studies highlighted variations in the impact of interventions across different geographic regions, indicating that interventions may need to be tailored to local contexts and cultural norms to maximize effectiveness. For example, interventions implemented in urban areas may require different strategies compared to those in rural or remote areas due to differences in access to healthcare services, socioeconomic status, and community dynamics.

Population-specific differences were evident in the effectiveness of interventions targeting specific demographic groups. Interventions tailored to address the unique needs, preferences, and barriers faced by different populations, such as MSM, racial/ethnic minorities, youth, or people living with HIV, were found to be more effective in engaging and motivating participants. Cultural factors, language barriers, and historical experiences with healthcare systems influenced the reception and impact of interventions within these populations.

Variations in the prevalence of infectious diseases and the availability of testing infrastructure influenced intervention effectiveness. Interventions implemented in areas with higher disease prevalence or limited access to testing services may have greater impact on awareness and testing uptake compared to regions with lower disease burden and better access to healthcare.

The findings underscored the importance of considering regional and population-specific differences when designing and implementing interventions. Tailoring interventions to the unique needs and contexts of specific regions and populations can enhance their relevance, acceptability, and effectiveness in promoting awareness and acceptance of rapid testing, ultimately contributing to improved public health outcomes and disease prevention efforts.

Discussion

Interpretation of findings

The interpretation of findings from the reviewed studies provides valuable insights into the effectiveness of interventions aimed at promoting awareness and acceptance of rapid testing for infectious diseases. Overall, the findings suggest that both educational campaigns and peer-led initiatives play significant roles in increasing awareness, improving attitudes, and encouraging testing uptake among diverse populations. Educational campaigns were effective in disseminating information, reducing stigma, and increasing knowledge about rapid testing, while peer-led initiatives leveraged social support, trust, and peer influence to engage communities and promote behavior change.

The interpretation of findings highlights the importance of tailoring interventions to the specific needs, preferences, and contexts of the target population. Culturally relevant and linguistically appropriate interventions were found to be more effective in engaging participants and promoting positive health-seeking behaviors. Additionally, interventions

that addressed structural barriers to testing, such as accessibility and affordability, were more successful in increasing testing uptake and linkage to care.

The interpretation of findings underscores the need for multi-faceted approaches that utilize a combination of strategies and channels to reach target audiences effectively. Interventions that utilized multiple channels, including multimedia approaches, community engagement activities, and peer networks, were more successful in engaging participants and promoting behavior change compared to single-channel approaches.

The interpretation of findings highlights the importance of evidence-based interventions tailored to local contexts, cultural norms, and the needs of specific populations. By addressing these factors, interventions can be more effective in improving awareness, acceptance, and uptake of rapid testing, ultimately contributing to enhanced public health outcomes and disease prevention efforts.

Strengths and limitations of reviewed studies

The reviewed studies on interventions promoting awareness and acceptance of rapid testing for infectious diseases exhibit several strengths, along with some limitations. One of the main strengths is the diversity of interventions and populations examined, providing a comprehensive understanding of various approaches and their effectiveness across different contexts. Additionally, many studies employed rigorous research designs, including randomized controlled trials, longitudinal studies, and mixed-methods approaches, enhancing the reliability and validity of findings. Furthermore, the inclusion of both quantitative and qualitative data allowed for a holistic assessment of intervention impact, providing insights into changes in knowledge, attitudes, behaviors, and experiences related to rapid testing.

Several limitations were also identified across the reviewed studies. One common limitation is the potential for selection bias, as participants self-select to participate in interventions, leading to a lack of representativeness and generalizability of findings. Moreover, many studies relied on self-reported data, which may be subject to social desirability bias, potentially inflating intervention effects. Additionally, the short-term follow-up periods in some studies may not capture sustained behavior change over time, limiting the ability to assess long-term intervention impact. Furthermore, the lack of standardized outcome measures and inconsistency in reporting outcomes across studies hindered comparability and synthesis of findings.

Despite these limitations, the reviewed studies contribute valuable insights into the effectiveness of interventions promoting awareness and acceptance of rapid testing. By acknowledging these strengths and limitations, future research can build upon existing knowledge and address gaps to further enhance the effectiveness of interventions in improving public health outcomes related to infectious diseases.

Implications for public health interventions

The findings from the reviewed studies have several important implications for public health interventions aimed at promoting awareness and acceptance of rapid testing for infectious diseases. Firstly, the effectiveness of educational campaigns and peer-led initiatives underscores the importance of utilizing diverse strategies and channels to reach target populations effectively. Public health interventions should consider employing multimedia approaches, community engagement activities, and peer networks to disseminate information and facilitate behavior change.

The findings highlight the significance of tailoring interventions to the specific needs, preferences, and contexts of the target population. Culturally sensitive and linguistically appropriate interventions are essential for engaging diverse communities and addressing barriers to testing. Interventions should take into account regional differences, cultural norms, and social determinants of health to maximize relevance and impact.

Addressing structural barriers to testing, such as accessibility, affordability, and stigma, is crucial for improving testing uptake and linkage to care. Public health interventions

should focus on increasing access to testing services, reducing costs, and providing support for individuals navigating the testing process.

The findings emphasize the importance of community engagement and collaboration with local stakeholders in intervention design and implementation. Engaging community members, leaders, and organizations ensures interventions are tailored to community needs, culturally appropriate, and sustainable in the long term.

The implications for public health interventions suggest the importance of evidence-based, multi-faceted approaches that address the diverse needs and contexts of populations. By leveraging effective strategies, tailoring interventions, and addressing structural barriers, public health interventions can effectively promote awareness, acceptance, and uptake of rapid testing, ultimately contributing to improved public health outcomes and disease prevention efforts.

Suggestions for future research

Future research in the field of promoting awareness and acceptance of rapid testing for infectious diseases could focus on several key areas to advance knowledge and improve intervention effectiveness. Firstly, there is a need for more rigorous evaluation studies using randomized controlled trials or longitudinal designs to assess the long-term impact of interventions on testing behaviors, linkage to care, and health outcomes. These studies should also explore the sustainability of intervention effects over time and in different settings.

Further research is needed to better understand the mechanisms through which interventions influence behavior change. Exploring mediators and moderators of intervention effects, such as social support, perceived barriers, and health literacy, can provide valuable insights into how interventions work and inform the development of more effective strategies.

There is a need for research focusing on the integration of rapid testing into broader public health strategies, such as HIV prevention and treatment programs, hepatitis C elimination efforts, and COVID-19 response initiatives. Understanding how rapid testing fits into existing healthcare systems and policies can inform the development of more comprehensive and sustainable interventions.

Future research should prioritize the inclusion of marginalized or underserved populations, including racial/ethnic minorities, LGBTQ+ individuals, people living in rural areas, and those experiencing homelessness or substance use disorders. Tailoring interventions to the specific needs and barriers faced by these populations can help reduce health disparities and improve access to testing services.

There is a need for research examining the cost-effectiveness of interventions promoting rapid testing awareness and acceptance. Evaluating the economic impact of interventions can inform resource allocation decisions and help ensure that interventions are scalable, sustainable, and cost-efficient.

Future research efforts should aim to address gaps in knowledge, improve intervention effectiveness, and enhance the implementation of public health strategies to promote awareness and acceptance of rapid testing, ultimately contributing to improved health outcomes and disease prevention efforts.

Conclusion

The research on interventions promoting awareness and acceptance of rapid testing for infectious diseases revealed several key findings. Firstly, both educational campaigns and peer-led initiatives were effective in increasing awareness, improving attitudes, and encouraging testing uptake among diverse populations. Educational campaigns successfully disseminated information and reduced stigma surrounding testing, while peer-led initiatives leveraged social support and trust to engage communities. Additionally,

interventions tailored to specific populations and contexts were more effective in promoting behavior change. Addressing structural barriers to testing, such as accessibility and affordability, was crucial for improving testing uptake and linkage to care. Furthermore, regional and population-specific differences underscored the need for tailored interventions that consider local contexts and cultural norms. Overall, evidence-based, multi-faceted approaches that address diverse needs and barriers are essential for promoting awareness and acceptance of rapid testing, ultimately contributing to improved public health outcomes and disease prevention efforts.

Promoting awareness and acceptance of rapid testing for infectious diseases holds significant importance in public health efforts for several reasons. Firstly, rapid testing plays a crucial role in early detection and diagnosis of infectious diseases, enabling prompt treatment initiation and prevention of transmission to others. By promoting awareness of rapid testing options and their benefits, individuals are empowered to take proactive steps towards managing their health and preventing the spread of diseases within communities.

Increasing acceptance of rapid testing helps reduce stigma and fear surrounding testing, particularly for diseases associated with social stigma. By normalizing testing behaviors and promoting understanding of the importance of testing, public health initiatives can encourage individuals to overcome barriers to testing, such as fear of judgment or discrimination.

Promoting awareness and acceptance of rapid testing is essential for reaching underserved and high-risk populations who may face barriers to accessing traditional healthcare services. Rapid testing can be more accessible, convenient, and less invasive than traditional testing methods, making it particularly valuable for marginalized communities and those with limited access to healthcare.

In the context of emerging infectious diseases such as COVID-19, rapid testing plays a critical role in controlling outbreaks, identifying cases quickly, and implementing timely public health measures. By promoting awareness and acceptance of rapid testing, public health agencies can enhance their ability to respond effectively to public health emergencies.

Promoting awareness and acceptance of rapid testing is fundamental to improving individual and community health outcomes, reducing disease transmission, and advancing public health preparedness efforts. By encouraging widespread testing uptake and acceptance, public health initiatives can make significant strides in disease prevention, early detection, and management, ultimately saving lives and improving population health.

Recommendations for policymakers and practitioners based on the findings of interventions promoting awareness and acceptance of rapid testing for infectious diseases are crucial for shaping effective public health strategies. Firstly, policymakers should prioritize investment in comprehensive public health campaigns that utilize both educational and peer-led approaches. These campaigns should be culturally tailored, linguistically appropriate, and address specific barriers faced by different populations. Policymakers should also ensure that rapid testing services are accessible, affordable, and available in a variety of community settings to reach diverse populations effectively.

Policymakers should work towards reducing structural barriers to testing, such as cost, transportation, and stigma, by implementing policies that improve access to healthcare services and ensure equitable distribution of testing resources. This may include expanding coverage for rapid testing through public insurance programs, increasing funding for community-based testing initiatives, and implementing anti-stigma campaigns to reduce discrimination associated with testing.

Practitioners should engage in collaborative efforts with local communities, community-based organizations, and healthcare providers to implement evidence-based

interventions and promote testing awareness. They should prioritize community engagement, cultural competence, and sensitivity to local contexts when designing and implementing interventions.

Practitioners should prioritize the integration of rapid testing into routine healthcare services and public health programs to ensure sustained access and uptake. This may involve training healthcare providers on the benefits of rapid testing, standardizing testing protocols, and incorporating rapid testing into existing screening programs.

Ongoing monitoring and evaluation of interventions are essential to assess effectiveness, identify areas for improvement, and inform future public health strategies. Policymakers and practitioners should prioritize data collection, analysis, and dissemination to ensure interventions are evidence-based and responsive to community needs.

Recommendations for policymakers and practitioners include investing in comprehensive public health campaigns, reducing structural barriers to testing, promoting community engagement, integrating rapid testing into healthcare services, and prioritizing monitoring and evaluation efforts to improve intervention effectiveness and advance public health goals.

Authors' Contributions

All authors worked well and played their roles according to their main tasks, starting from collecting literature, resuming, writing, drafting, summarizing to sending to publishers for publication.

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