

Available online at ajdhs.com

Asian Journal of Dental and Health Sciences

Open Access to Dental and Medical Research

Copyright © 2024 The Author(s): This is an open-access article distributed under the terms of the CC BY-NC 4.0 which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited



Open Access Review Article

Empathy and Awareness: Shifting Perceptions on HIV in Underserved Communities

Emmanuel Ifeanyi Obeagu *

Department of Biomedical and Laboratory Science, Africa University, Zimbabwe

Article Info:

Article History:

Received 14 Sep 2024 Reviewed 27 Oct 2024 Accepted 21 Nov 2024 Published 15 Dec 2024

Cite this article as:

Obeagu EI, Empathy and Awareness: Shifting Perceptions on HIV in Underserved Communities, Asian Journal of Dental and Health Sciences. 2024; 4(3):15-19

DOI: http://dx.doi.org/10.22270/ajdhs.v4i4.93

Abstract

HIV continues to disproportionately affect underserved communities, where stigma, misinformation, and limited healthcare access often hinder effective prevention and treatment. This review explores the role of empathy and awareness in transforming attitudes toward HIV in these communities. Empathy-driven interventions, alongside targeted awareness campaigns, can reduce stigma, promote understanding, and encourage individuals to engage in HIV testing and prevention. By humanizing the issue of HIV, these initiatives foster compassion, shift perceptions, and create supportive environments for people living with HIV, ultimately improving health outcomes. The review highlights the importance of culturally sensitive HIV education and the critical role of peerled initiatives in changing community perceptions. Peer educators, especially those living with HIV, help break down barriers by offering relatable, nonjudgmental support. These programs empower individuals to take charge of their health and seek HIV-related care without fear of discrimination. Through local influencers, such as community leaders and healthcare workers, awareness campaigns can effectively challenge harmful myths and promote accurate information about HIV transmission, prevention, and treatment.

Keywords: Empathy, HIV awareness, underserved communities, stigma reduction, healthcare access

*Address for Correspondence:

Emmanuel Ifeanyi Obeagu, Department of Biomedical and Laboratory Science, Africa University, Zimbabwe

Introduction

The HIV epidemic continues to be a significant global health issue, with underserved communities bearing a disproportionate share of the burden. communities often face numerous challenges, including poverty, limited access to healthcare, cultural barriers, and stigma, which can exacerbate the spread of the virus and hinder prevention and treatment efforts. The lack of awareness about HIV transmission and prevention, combined with the pervasive social stigma, creates an environment in which individuals are reluctant to seek testing, treatment, or even engage in conversations about the virus. As a result, the virus remains entrenched in these communities, affecting not only those who are living with HIV but also their families and broader social networks.¹⁻² One of the most effective strategies to shift these harmful perceptions is to foster empathy and increase awareness about HIV. Empathy, the ability to understand and share the feelings of others, can create an environment where individuals are more likely to engage in open conversations, seek help, and access necessary healthcare. This approach emphasizes the importance of humanizing HIV, encouraging community members to recognize the shared humanity of people living with the virus, rather

than viewing them through a lens of fear or judgment. When empathy is coupled with education, it can dispel myths, reduce misconceptions, and ultimately promote healthier behaviors within the community.³⁻⁴

awareness of HIV, particularly underserved communities, is another essential component of shifting perceptions. While many communities have made significant strides in combating HIV, misinformation and stigma persist, perpetuating fear and misinformation. In these areas, individuals may still associate HIV with high-risk behaviors, moral judgment, or certain groups of people, which can lead to discrimination and further isolate those affected by the virus. Educational campaigns that provide accurate, culturally relevant information about HIV transmission, prevention, and treatment can be instrumental in dispelling these myths. By addressing the specific needs and cultural contexts of underserved populations, awareness campaigns can promote healthier, more informed choices.⁵⁻⁶ Empathy and awareness initiatives also provide an opportunity to engage community leaders and influencers in the fight against HIV stigma. Trusted figures in the community, such as religious leaders, educators, or local healthcare providers, play a critical role in shaping attitudes and behaviors. When

[15] AJDHS.COM

these figures advocate for HIV testing, treatment, and a supportive approach to people living with HIV, they can have a profound impact on the community's perception of the virus. Their endorsement can lend credibility to the message and encourage others to adopt more inclusive and compassionate attitudes. This, in turn, can lead to broader societal changes, such as improved access to HIV-related services and a reduction in the social isolation of people living with HIV.⁷⁻⁸ Despite the potential of empathy and awareness initiatives, there are still significant barriers to their implementation in underserved communities. Resource constraints. cultural attitudes, and lack of access to healthcare infrastructure can limit the reach and effectiveness of these interventions. In some communities, HIV is still viewed through a lens of fear, discrimination, and misinformation, making it challenging to foster open discussions about the virus. Additionally, without adequate support from local governments and healthcare systems, community-based efforts may struggle to gain traction. Overcoming these barriers requires long-term investment in education, healthcare access, and the training of community leaders and healthcare providers to ensure that they are equipped to address HIV-related stigma.9-10

The Role of Empathy in HIV Awareness

Empathy plays a crucial role in changing the way HIV is perceived in underserved communities. It is the ability to understand and share the feelings of others, and when applied to HIV awareness, it humanizes the issue, making it more relatable and less stigmatized. In many underserved communities, HIV is often associated with fear, misinformation, and moral judgment. This can prevent individuals from seeking testing, treatment, or disclosing their HIV status due to the fear of being ostracized. Empathy-driven approaches challenge these perceptions by fostering an environment of compassion and support, ultimately encouraging open conversations and reducing the stigma associated with HIV.11-12 One of the most effective ways empathy influences HIV awareness is through peer support and education. Peerled programs, where individuals who are living with HIV share their experiences, are often more impactful than traditional educational initiatives because they provide a sense of solidarity. When people see someone who shares their background and experiences talking openly about HIV, they are more likely to feel comfortable discussing their own concerns and seeking help. Peer educators can break down misconceptions, answer questions, and encourage others to get tested and stay engaged with their care. These programs also create a sense of community, reminding individuals that they are not alone in their struggle against HIV.13-14

Raising HIV Awareness in Underserved Communities

Raising HIV awareness in underserved communities is a critical step in reducing the spread of the virus and improving health outcomes for those already living with HIV. These communities often face significant barriers to healthcare, including limited access to resources, a lack of comprehensive HIV education, and prevalent

stigma surrounding the disease. By targeting these challenges through tailored awareness campaigns, we can empower individuals with the knowledge they need to make informed decisions about their health. Effective campaigns focus on misconceptions, providing accurate information about HIV transmission and prevention, and encouraging open dialogues about the virus. 15-16 One of the key components of raising HIV awareness is ensuring that the information is culturally relevant and accessible to the target population. This requires understanding the unique challenges, values, and beliefs of the community. For instance, some underserved communities may have particular cultural norms that influence how they view sexual health or the treatment of HIV. Awareness programs that respect and incorporate local values can reduce resistance and increase the likelihood of acceptance. This may include using local languages, working with community leaders, or utilizing community events to deliver HIV information in a way that resonates with the population. 17-18

Another crucial aspect of HIV awareness is the involvement of community members in the process. Peer-led programs, where individuals who are living with HIV educate others, have proven to be particularly effective. These programs work because people are more likely to trust and relate to someone who shares similar experiences. Peer educators can break down barriers, answer questions, and challenge harmful myths that may prevent people from seeking testing or treatment. Furthermore, these initiatives foster a sense of solidarity, making individuals feel that they are part of a larger movement aimed at overcoming the stigma and fear surrounding HIV.19-20 Digital platforms and social media also present valuable tools for raising awareness in underserved communities. In many regions, mobile phones are more accessible than traditional healthcare services, making campaigns a powerful vehicle for spreading HIV information. Social media campaigns, educational videos, and text message alerts can reach large audiences with timely, relevant content. These digital tools also allow for more interactive engagement, where individuals can ask questions and receive information anonymously, which can be especially important in environments where HIV is highly stigmatized.²¹⁻²² Despite the potential of these strategies, challenges remain in effectively raising HIV awareness in underserved communities. Limited resources, including funding for campaigns, trained educators, and healthcare infrastructure, can make it difficult to implement large-scale programs. Additionally, deeprooted stigma and misconceptions about HIV can be significant obstacles to engaging individuals in these efforts. To overcome these barriers, sustained investment in education and healthcare services is necessary, along with strong partnerships between local governments, community organizations, and healthcare providers. Only by working collaboratively can we create environments where HIV awareness is widespread and individuals feel empowered to seek testing and treatment.23-24

[16] AJDHS.COM

Impact of HIV Stigma on Healthcare Access

HIV stigma continues to be a major barrier to healthcare access for individuals living with HIV, especially in underserved communities. Stigma refers to the negative stereotypes, discrimination, and social exclusion that individuals experience because of their HIV status. This stigma can manifest in various forms, including overt discrimination in healthcare settings, social isolation, and internalized feelings of shame and guilt. The fear of being stigmatized often discourages individuals from seeking HIV testing, treatment, or care, which can lead to delayed diagnosis, poor health outcomes, and increased transmission rates. In many cases, stigma surrounding HIV is rooted in misconceptions about how the virus is transmitted, as well as moral judgments about those living with the disease.²⁵⁻²⁶ One of the most significant ways that HIV stigma affects healthcare access is by deterring individuals from seeking HIV testing and treatment. Many people fear the judgment or mistreatment they might face from healthcare professionals or even from family and friends if they disclose their HIV status. This fear of discrimination can lead to delayed diagnosis, which can worsen the individual's health over time. Early diagnosis and treatment are critical in managing HIV, preventing the progression to AIDS, and reducing transmission to others. The stigma surrounding HIV also affects the quality of care that people receive. Healthcare providers who harbor biases or misconceptions about HIV may offer substandard care or even refuse treatment altogether, further discouraging individuals from accessing the services they need.²⁷⁻²⁸

Furthermore, HIV stigma can exacerbate mental health issues, making individuals more reluctant to seek help for fear of being judged or ostracized. The internalization of stigma can lead to feelings of shame, depression, and anxiety, which may further isolate individuals and prevent them from accessing both physical and mental health services. This can create a vicious cycle, where individuals avoid care due to fear of stigma, leading to worsening health outcomes, which, in turn, reinforces their sense of isolation and hopelessness. Mental health support, counseling and peer support, is crucial for addressing the emotional impact of HIV stigma and encouraging individuals to stay engaged in their care.²⁹ The impact of stigma is also seen in healthcare facilities themselves, where patients may encounter discriminatory attitudes from staff or be subjected to breaches of confidentiality. In some regions, healthcare workers may view people living with HIV as being "deserving" of their condition, leading to biased or unprofessional treatment. Fear of stigma can also make individuals hesitant to seek HIV care in public health settings, leading them to avoid health services altogether or to seek care only when their condition has worsened. As a result, individuals may not adhere to antiretroviral therapy (ART), which is essential in managing HIV and reducing viral load to undetectable levels, further complicating their health outcomes.³⁰ In response to the pervasive impact of HIV stigma on healthcare access, many public health campaigns and organizations are working to challenge

and reduce stigma through education and advocacy. By increasing awareness and understanding about HIV, its transmission, and the realities of living with the virus, stigma can be reduced, and healthcare settings can become more inclusive and supportive. Training healthcare providers to recognize and address their own biases is also crucial in ensuring that people living with HIV receive respectful and effective care. Moreover, creating safe spaces for individuals to discuss their HIV status without fear of discrimination can encourage people to seek timely and necessary medical intervention.³¹

Challenges and Barriers to Empathy and Awareness Initiatives

While empathy and awareness initiatives have the potential to significantly impact HIV prevention and care, there are several challenges and barriers that can hinder their success, particularly in underserved communities. These barriers can range from deeply ingrained social stigma and cultural norms to limited resources and inadequate healthcare infrastructure. Addressing these challenges requires a comprehensive and multi-faceted approach that tackles the root causes of resistance to HIV awareness, stigma, and the barriers to compassionate, empathetic care.³² One of the most significant barriers is the pervasive stigma surrounding HIV. In many communities, particularly in regions with high rates of HIV, there is still a great deal of misunderstanding and fear associated with the virus. HIV is often seen as a "moral issue," linked to behaviors such as drug use, sex work, or non-heteronormative sexual practices. This can lead to discrimination and judgment against those who are living with HIV, which undermines efforts to build empathy. The fear of being stigmatized prevents individuals from seeking HIV testing, treatment, or disclosing their status. As a result, creating an environment of empathy and understanding can be an uphill battle, requiring persistent efforts to educate and reframe the conversation around HIV as a public health issue, rather than one of personal fault or shame.32

Another challenge to implementing effective empathy and awareness initiatives is the lack of adequate resources, both in terms of funding and personnel. In underserved communities, where access to healthcare services is often limited, there may be insufficient investment in HIV awareness campaigns or support programs. Healthcare providers in these areas may also lack the training to approach HIV care with the necessary sensitivity and understanding. Without dedicated funding, support for peer-led initiatives, or training for healthcare workers, efforts to foster empathy can be under-resourced or inconsistent. Furthermore, without adequate infrastructure, such as community centers or digital platforms, reaching large numbers of people effectively can be difficult. Ensuring that there is both the financial and institutional support for such initiatives is essential for their success.33 Cultural norms and local beliefs also present substantial challenges in promoting empathy and awareness around HIV. In some communities, there may be

[17] AJDHS.COM

entrenched cultural attitudes that resist open discussions about HIV, sexuality, or healthcare in general. These cultural barriers can make it difficult to encourage empathy and understanding, particularly when sensitive topics are involved. In addition, traditional gender roles and hierarchies may limit the agency of certain individuals, such as women or LGBTQ+ individuals, in accessing HIV services or advocating for their own health. Cultural resistance to outside interventions or "foreign" approaches can also hinder efforts to implement effective HIV awareness programs, particularly in rural or remote areas. Overcoming these barriers requires working closely with community leaders and respecting local customs while promoting the importance of HIV awareness and care.33 Additionally, misinformation and misconceptions about HIV are prevalent in many communities, and these misunderstandings can create further barriers to the success of empathy and awareness initiatives. False beliefs about how HIV is transmitted, such as thinking it can be spread through casual contact or that it only affects certain groups, can fuel fear and stigmatization. Misinformation may also prevent people from seeking HIV testing or treatment, believing they are not at risk. Addressing these misconceptions is crucial in the promotion of accurate information and fostering an environment of empathy and care. Initiatives must be designed to not only raise awareness but also directly confront and correct false beliefs with factual, accessible information.

Conclusion

Empathy and awareness initiatives are crucial for addressing the stigma surrounding HIV and improving healthcare access for individuals living with the virus, especially in underserved communities. However, these efforts face numerous challenges, including deeply rooted societal stigma, limited resources, cultural resistance, and the spread of misinformation. To overcome these barriers, a multi-dimensional approach is necessary—one that integrates education, cultural sensitivity, adequate resource allocation, community engagement. By fostering empathy and providing accurate information, we can dismantle misconceptions about HIV, reduce discrimination, and encourage individuals to seek the care they need without fear of judgment.

Effective empathy and awareness initiatives require sustained commitment from healthcare professionals, community leaders, and policymakers. Healthcare providers must be trained to approach HIV care with sensitivity and understanding, ensuring that people living with HIV feel respected and supported in their treatment journey. Community-based initiatives that involve peer educators and local leaders are essential to breaking down the barriers of stigma and fostering a culture of inclusivity and support. Moreover, leveraging digital platforms and media can help spread awareness to a broader audience, especially in remote or resource-limited areas.

Conflict of Interest: Author declares no potential conflict of interest with respect to the contents, authorship, and/or publication of this article.

Source of Support: Nil

Funding: The authors declared that this study has received no financial support.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data supporting in this paper are available in the cited references.

Ethics approval: Not applicable.

References

- Obeagu EI, Obeagu GU. Neonatal Outcomes in Children Born to Mothers with Severe Malaria, HIV, and Transfusion History: A Review. Elite Journal of Nursing and Health Science, 2024; 2(3):38-58
- Obeagu EI, Ubosi NI, Obeagu GU, Obeagu AA. Nutritional Strategies for Enhancing Immune Resilience in HIV: A Review. Int. J. Curr. Res. Chem. Pharm. Sci. 2024;11(2):41-51. https://doi.org/10.22270/ijmspr.v10i2.102
- 3. Obeagu EI, Obeagu GU. Understanding Immune Cell Trafficking in Tuberculosis-HIV Coinfection: The Role of L-selectin Pathways. Elite Journal of Immunology, 2024; 2(2):43-59
- Obeagu EI. Erythropoietin and the Immune System: Relevance in HIV Management. Elite Journal of Health Science, 2024; 2(3):23-35
- Obeagu EI, Obeagu GU, Obiezu J, Ezeonwumelu C, Ogunnaya FU, Ngwoke AO, Emeka-Obi OR, Ugwu OP. Hematologic Support in HIV Patients: Blood Transfusion Strategies and Immunological Considerations. Applied Sciences (NIJBAS). 2023;3(3). https://doi.org/10.59298/NIJBAS/2023/1.2.11000
- Parker RG, Perez-Brumer A, Garcia J, Gavigan K, Ramirez A, Milnor J, Terto Jr V. Prevention literacy: community-based advocacy for access and ownership of the HIV prevention toolkit. African Journal of Reproduction and Gynaecological Endoscopy. 2016;19(1). https://doi.org/10.7448/IAS.19.1.21092 PMid:27702430 PMCid:PMC5045969
- McNeish R, Rigg KK, Tran Q, Hodges S. Community-based behavioral health interventions: Developing strong community partnerships. Evaluation and Program Planning. 2019; 73:111-115. https://doi.org/10.1016/j.evalprogplan.2018.12.005 PMid:30580000
- 8. Dave P, The Correlation Between Stigma and Mental Health Disorders in People Living with HIV/AIDS, Journal of Drug Delivery and Therapeutics, 2024;14(3):227-233 https://doi.org/10.22270/jddt.v14i3.6490
- 9. Obeagu EI, Obeagu GU. Immune Modulation in HIV-Positive Neonates: Insights and Implications for Clinical Management. Elite Journal of Nursing and Health Science, 2024; 2(3): 59-72
- Obeagu EI, Obeagu GU. Understanding ART and Platelet Functionality: Implications for HIV Patients. Elite Journal of HIV, 2024; 2(2): 60-73
- 11. Navarra AM, Rosenberg MG, Gormley M, Bakken S, Fletcher J, Whittemore R, Gwadz M, Cleland C, Melkus GD. Feasibility and acceptability of the adherence connection counseling, education, and support (ACCESS) proof of concept: a peer-led, mobile health (mHealth) cognitive behavioral antiretroviral therapy (ART) adherence intervention for HIV-Infected (HIV+) adolescents and young adults (AYA). AIDS and Behavior. 2023; 27(6):1807-23. https://doi.org/10.1007/s10461-022-03913-0 PMid:36574184 PMCid:PMC9792943
- 12. Frew PM, Archibald M, Schamel J, Saint-Victor D, Fox E, Smith-Bankhead N, Diallo DD, Holstad MM, Del Rio C. An integrated service delivery model to identify persons living with HIV and to

[18] AJDHS.COM

- provide linkage to HIV treatment and care in prioritized neighborhoods: a geotargeted, program outcome study. JMIR public health and surveillance. 2015; 1(2):e4675. https://doi.org/10.2196/publichealth.4675 PMid:27227134 PMCid:PMC4869208
- Obeagu EI, Obeagu GU. Optimizing Blood Transfusion Protocols for Breast Cancer Patients Living with HIV: A Comprehensive Review. Elite Journal of Nursing and Health Science, 2024; 2(2):1-17
- 14. Obeagu EI, Obeagu GU. Hematologic Considerations in Breast Cancer Patients with HIV: Insights into Blood Transfusion Strategies. Elite Journal of Health Science, 2024; 2(2): 20-35
- 15. Obeagu EI, Obeagu GU. Advancements in HIV Prevention: Africa's Trailblazing Initiatives and Breakthroughs. Elite Journal of Public Health, 2024; 2 (1): 52-63
- 16. Bond V, Chase E, Aggleton P. Stigma, HIV/AIDS and prevention of mother-to-child transmission in Zambia. Evaluation and program planning. 2002; 25(4):347-356. https://doi.org/10.1016/S0149-7189(02)00046-0
- 17. Zukoski AP, Thorburn S. Experiences of stigma and discrimination among adults living with HIV in a low HIV-prevalence context: a qualitative analysis. AIDS patient care and STDs. 2009;23(4):267-276. https://doi.org/10.1089/apc.2008.0168 PMid:19260770
- Shafique S, Bhattacharyya DS, Nowrin I, Sultana F, Islam MR, Dutta GK, Del Barrio MO, Reidpath DD. Effective community-based interventions to prevent and control infectious diseases in urban informal settlements in low-and middle-income countries: a systematic review. Systematic Reviews. 2024;13(1):253. https://doi.org/10.1186/s13643-024-02651-9 PMid:39367477 PMCid:PMC11451040
- 19. Pandya S, Kan L, Parr E, Twose C, Labrique AB, Agarwal S. How Can Community Data Be Leveraged to Advance Primary Health Care? A Scoping Review of Community-Based Health Information Systems. Global Health: Science and Practice. 2024; 12(2). https://doi.org/10.9745/GHSP-D-23-00429 PMid:38626945 PMCid:PMC11057800
- 20. Navarra AM, Rosenberg MG, Gormley M, Bakken S, Fletcher J, Whittemore R, Gwadz M, Cleland C, Melkus GD. Feasibility and acceptability of the adherence connection counseling, education, and support (ACCESS) proof of concept: a peer-led, mobile health (mHealth) cognitive behavioral antiretroviral therapy (ART) adherence intervention for HIV-Infected (HIV+) adolescents and young adults (AYA). AIDS and Behavior. 2023;27(6):1807-1823. https://doi.org/10.1007/s10461-022-03913-0 PMid:36574184 PMCid:PMC9792943
- 21. Billings DW, Leaf SL, Spencer J, Crenshaw T, Brockington S, Dalal RS. A randomized trial to evaluate the efficacy of a web-based HIV behavioral intervention for high-risk African American women. AIDS and Behavior. 2015; 19:1263-1274. https://doi.org/10.1007/s10461-015-0999-9 PMid:25616838 PMCid:PMC4506203
- 22. Kessy F, Charle P. Evidence of the Impact of IMF Fiscal and Monetary Policies on the Capacity to Address HIV/AIDS and TB Crises in Tanzania. CEGAA/RESULTS Educational Fund, June (Cape Town: Centre for Economic Governance and AIDS in Africa).

- 23. Akhtar MH, Ramkumar J. Primary Health Center: Can it be made mobile for efficient healthcare services for hard to reach population? A state-of-the-art review. Discover Health Systems. 2023;2(3). https://doi.org/10.1007/s44250-023-00017-x PMid:37520517 PMCid:PMC9870199
- 24. Lynn VA, Webb FJ, Joerg C, Nembhard K. Behavioral Health Disorders and HIV Incidence and Treatment Among Women. InWomen's Behavioral Health: A Public Health Perspective 2024: 129-150. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-031-58293-6_6
- 25. Lassi ZS, Salam RA, Das JK, Bhutta ZA. The conceptual framework and assessment methodology for the systematic reviews of community-based interventions for the prevention and control of infectious diseases of poverty. Infectious diseases of poverty. 2014; 3:1-7. https://doi.org/10.1186/2049-9957-3-22 PMid:25105014 PMCid:PMC4124965
- Belus JM, Msimango LI, van Heerden A, Magidson JF, Bradley VD, Mdakane Y, van Rooyen H, Barnabas RV. Barriers, Facilitators, and Strategies to Improve Participation of a Couple-Based Intervention to Address Women's Antiretroviral Therapy Adherence in KwaZulu-Natal, South Africa. International Journal of Behavioral Medicine. 2024; 31(1):75-84. https://doi.org/10.1007/s12529-023-10160-7 PMid:36854871 PMCid:PMC10803380
- 27. Obeagu EI, Obeagu GU. Unmasking the Truth: Addressing Stigma in the Fight Against HIV. Elite Journal of Public Health. 2024;2(1):8-22.
- Obeagu EI, Obeagu GU, Odo EO, Igwe MC, Ugwu OP, Alum EU, Okwaja PR. Combatting Stigma: Essential Steps in Halting HIV Spread.
- 29. Obeagu El. Breaking Barriers: Mitigating Stigma to Control HIV Transmission. Elite Journal of Public Health. 2024;2(8):44-55.
- 30. Obeagu EI, Obeagu GU. Preventive measures against HIV among Uganda's youth: Strategies, implementation, and effectiveness. Medicine. 2024; 103(44):e40317. https://doi.org/10.1097/MD.000000000040317 PMid:39496029 PMCid:PMC11537624
- 31. Shafique S, Bhattacharyya DS, Nowrin I, Sultana F, Islam MR, Dutta GK, Del Barrio MO, Reidpath DD. Effective community-based interventions to prevent and control infectious diseases in urban informal settlements in low-and middle-income countries: a systematic review. Systematic Reviews. 2024; 13(1):253. https://doi.org/10.1186/s13643-024-02651-9 PMid:39367477 PMCid:PMC11451040
- 32. Muessig KE, Nekkanti M, Bauermeister J, Bull S, Hightow-Weidman LB. A systematic review of recent smartphone, Internet and Web 2.0 interventions to address the HIV continuum of care. Current Hiv/aids Reports. 2015; 12:173-190. https://doi.org/10.1007/s11904-014-0239-3 PMid:25626718 PMCid:PMC4370788
- 33. Perry H, Zulliger R, Scott K, Javadi D, Gergen J. Case studies of large-scale community health worker programs: examples from Bangladesh, Brazil, Ethiopia, India, Iran, Nepal, and Pakistan. Afghanistan: Community-Based Health Care to the Ministry of Public Health. 2013.

[19] AJDHS.COM