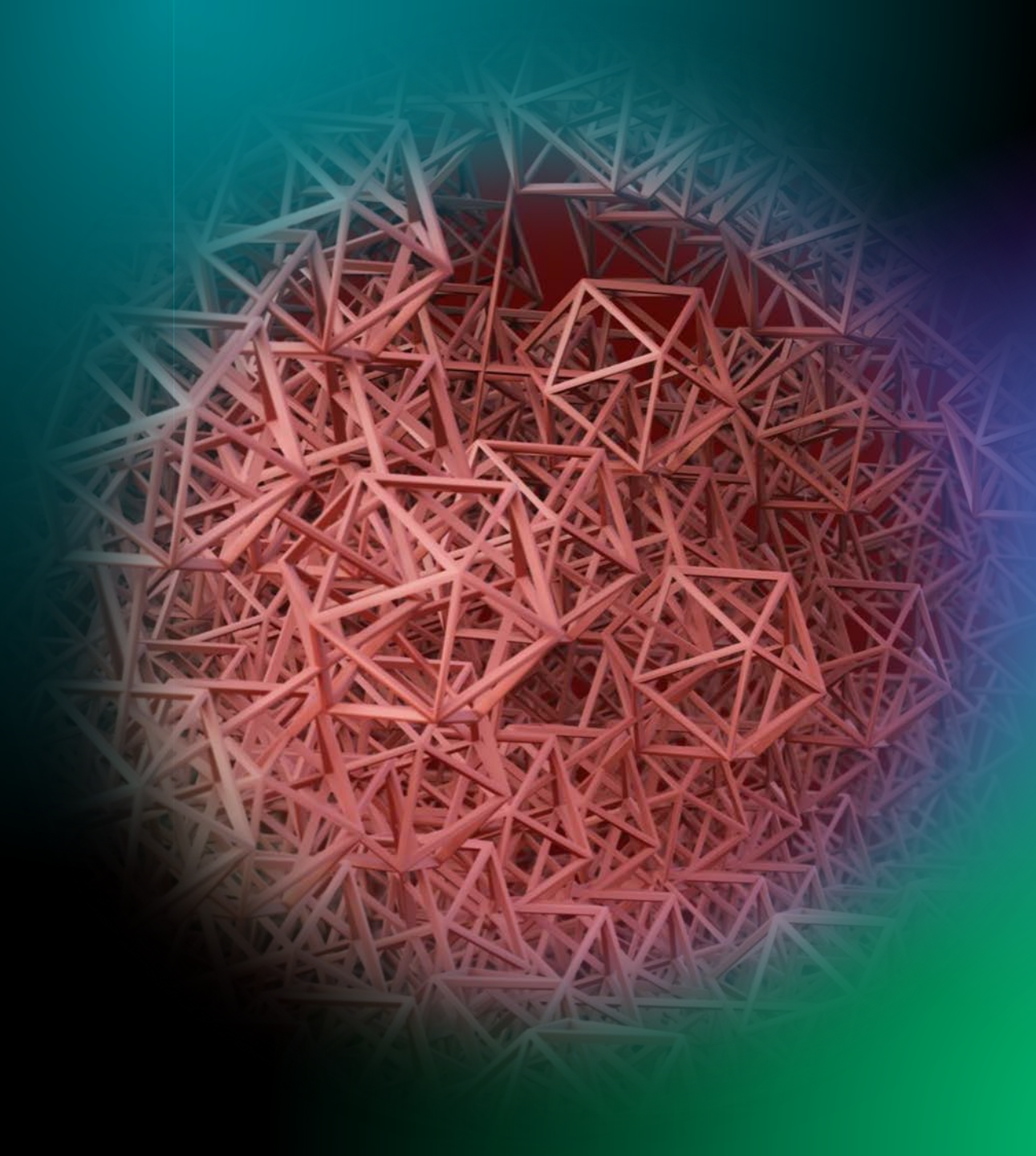
The Use of Social Media in HIV Prevention



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NOVEMBER 1, 2021

Introduction

- The human immunodeficiency virus (HIV) is considered the leading major global health issue.

- More than 34.7 million individuals are infected with the virus worldwide. Also, there were 3.9 million young people from ages 15 to 24 years old living with HIV in 2017.

- About 1600 new HIV cases among young adults worldwide and death every 10 minutes due to HIV-related illness.

World Health Organization, 2020

- There is no absolute and effective treatment for HIV. Once individuals acquire HIV, they will have it for the rest of their lives. (CDC 2021)

- The United Nations Population Fund (UNFPA) 2020 came up with The HIV Prevention Road Map to scale down HIV infections by 75% by 2020. The roadmap concentrated on five key pillars that associate prevention for young girls, young women and their partners, combination prevention for key populations, condom use, voluntary male medical circumcision and sexual health services for boys and men and pre-exposure prophylaxis (PrEP) use. (UNFPA 2020)

- There is currently about an 11% increase in newly infected and HIV-related mortality during Coronavirus (COVID19) pandemic in the United States over 12 months.
- The interruption in HIV services such as reduced HIV testing, condom use, pre-exposure prophylaxis (PrEP) and antiretroviral therapy (ART) were the causes of the increase. (Mitchell et al. 2021)
- Even though the government and other agencies set different relevant programmes for HIV prevention and HIV awareness, there are still barriers and challenges in implementing resources, financially and geography.
- However, social media is a powerful tool to fill those gaps as an effective tool in communication and interaction with people worldwide to address these challenges. It is potent and effective in health promotion as it may reach wide audiences and cost-effective tool. (Jane et al. 2018)

Background of the study

Human immunodeficiency virus definitions

- HIV is a disease that involves the body's immune system being attacked by white blood cells, commonly known as CD4 cells. CD4 cells weaken one's immunity against other infections such as tuberculosis, severe bacterial infections, and other diseases. (WHO 2021; CDC 2021)

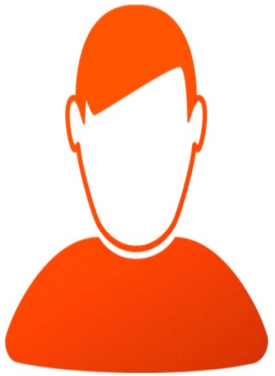
According to the National Institute of Health or NIH (2021):

- Stage 1, also known as Acute HIV Infection and a very contagious stage—the body's natural defense against infection that manifests flu-like symptoms.
- Stage 2 is also known as Chronic HIV infection.
- Stage 3 or acquired immunodeficiency syndrome (AIDS).

HIV Origins

- The origin of HIV in a human was believed to come from a Simian immunodeficiency virus or SIV that usually from infected blood of a type of chimpanzee in Central Africa.
  (CDC 2021)

- In the 1980s, HIV was first recognised as a new health condition in the USA.



HIV prevention strategies

- WHO (2021) came up with five strategic guidelines focused on the “Global health sector strategy on HIV for 2016–2021”.

- UNAIDS (2021) introduced target setting for 2025 and the resource needs and impact for 2020 to 2030. The strategy will mainly focus on six thematic groups: testing and treatment, primary prevention, social enablers, costs and resources, integration, and longer-term technologies.

Injecting drugs

- The use of shared needles and syringes to inject drugs claimed to be one of the risk factors of getting HIV. In the US, 1 in 10 HIV infections is accountable for the use of shared needles. Out of 37,968 newly HIV diagnosed in the United States in 2018, 3,864 individuals belong to people who inject drugs (PWID). (CDC 2021; UNAIDS 2021)

Condom use

- Dawn et al. (2015) agreed with the previous study and emphasized that condom use was 70% effective among MSM who had anal sex with an HIV-positive male partner compared with never used.

Pre-exposure prophylaxis (PrEP) use

- PrEP (pre-exposure prophylaxis) is an HIV prevention method using medication for people that belong to the sexual and drug-use risk group. PrEP is believed to be an effective way to prevent HIV from sex by about 99% and 74% from injecting drugs. (CDC 2021)
- Fonner et al., (2016) stated that the use of PrEP was 70% effective than using a placebo. Researchers concluded that PrEP was a unique and potent approach against HIV infection with minimal side effects from the same study. The impact of PrEP in the population will be determined through adherence.

Social media in HIV prevention

Meriam Webster (2021) defined social media as a form of sharing information, ideas, personal messages, and other content by using electronic communication tools such as social networking websites.

Statista (2021) recognized that Facebook surpassed one billion registered accounts, reaching 2.85 billion active users.

These social media platforms are believed to educate and provide an avenue for health information dissemination that promote health, including HIV prevention.

Social media and health literacy

WHO (2021) derived from Health Promotion Glossary dated 1998 health literacy is defined as applying all the knowledge, skills, and confidence into personal improvement and community health by creating change in personal and living conditions.

O'Mara also emphasised applying health literacy principles to improve health promotion that includes the following: knowing the audience, understanding the purpose of health messages, and creating social media messages to tailor to diverse populations. Tse et al. (2015) agreed and stated that Facebook and YouTube were efficient tools for health literacy among adolescents.

Social media and HIV

- Michel Sidibé, Executive Director of UNAIDS (2011), said that: "The potential of new technologies to re-energise the AIDS movement is clear. We need nothing less than an HIV prevention revolution, with social media and mobile technology at its core."

- However, according to Verrinder (2007), social media mechanics are used to find sexual partners. Chatting with regards to sex, explicit photos, and communicating for sex are prevalent, among others. Social media has a positive impact on the community and has some barriers to maximizing its good benefits that are needed to be addressed.

Project aim, Objectives and Research Questions

- This integrative literature review aims to increase the awareness of healthcare professionals in HIV prevention using social media.

The **main study objective** is to find out the use of social media in the prevention of HIV.

The **specific objectives** are:

1) to identify different social media used in HIV prevention,

2) to explore different social media strategies in HIV prevention

3) to identify the barriers and challenges in using social media in HIV prevention.

The research questions are:

1) What are the social media used in HIV prevention?

2) What are the social media strategies used in HIV prevention?

3) What are the barriers and challenges in using social media in HIV prevention?

- After identifying different social media platforms, strategies, and barriers and challenges in implementing social media in HIV prevention, recommendations will be formulated based on the references to provide evidence-based practice, especially to healthcare professionals.

Data and Methods

- When this study was started, there was a surge of COVID-19 pandemic wherein the healthcare system focused on eradicating the virus.
- The lack of instructions, guidance and awareness was seen during these times.
- For instance, the Philippines had 176% growth of HIV incidence and was hailed as the fastest-growing HIV epidemic in the western Pacific.
- The shortcomings in the healthcare system, funding, support and guidelines for healthcare professionals and HIV patients' people are the current outmost challenge.
- The author wanted to take part in HIV prevention awareness in his home country and globally.

Integrative literature review

- The main reason for choosing the integrative literature review as a method for the study was that the ILR allows the relevant form of study that gives new knowledge about different HIV prevention-related topics by providing a review, critique and synthesising model literature in an integrated approach that provides new frameworks and perspectives on the topic.

  (Torraco 2016)

- ILR has numerous advantages to scholars, including evaluating the strength of scientific evidence, exploration of research methods, generation of research questions, identification of current studies, need for future research, theoretical or conceptual framework, and specific issues.

  (Russell, 2005)

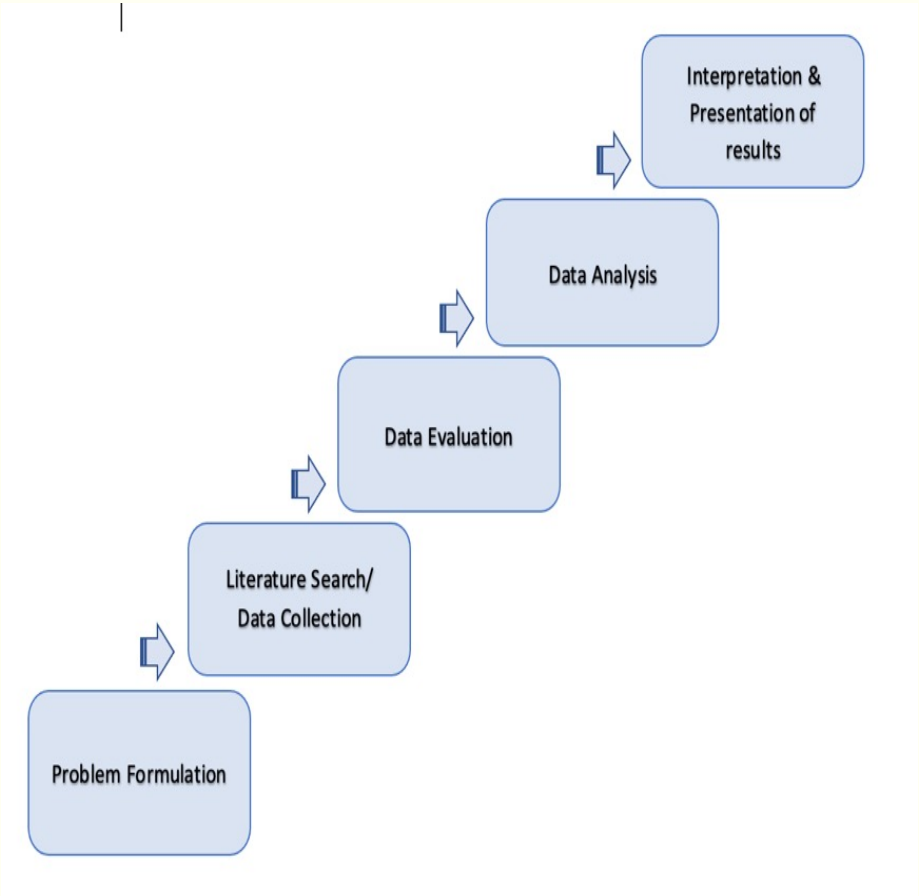


Figure 1: The five phases of integrative literature review based on Whittemore and Knafl, 2005, modified by the author.

- Firstly, the problem formulation phase suggests the description of variables and their relationship with other variables. The development of different concepts and operational definitions occur as the review progresses.

- Secondly, data collection or literature search comprises identifying target populations, sampling frame and evaluation, which involves a systematic search for all related topics.

- Thirdly, data evaluation shows the strength of relationships examined by individual studies using critical appraisal tools to ensure quality methodology.

- Fourthly, data analysis is associated with finding patterns in samples and formulating conclusions about the population.

- Finally, interpretation and presentation contain analysis and judgement of the findings. (Russell 2005). The recent idea concerning the relevant topic may arise and may be helpful for practical purposes.

(Whittemore & Knafl 2005, 552)

PICOTT

- **Problem:** Lack of awareness of health care professionals working in infection control on social media platforms and social media strategies in HIV prevention.
- **Intervention**: To identify different social media platforms, explore different social media strategies and identify the barriers in using social media in HIV prevention.
- **Comparison:** Comparison of the use of different social media platforms and strategies in HIV-prevention.
- **Outcome:** Awareness of the effect of online social media platforms and different strategies that can address the challenges of health promotion in HIV prevention through social media.
- **Type of questions:**

    1. What are the social media used in HIV prevention?
    2. What are the social media strategies used in HIV prevention?
    3. What are the barriers and challenges in using social media in HIV prevention?

- **Type of study:** Integrative literature review

Inclusion and exclusion criteria

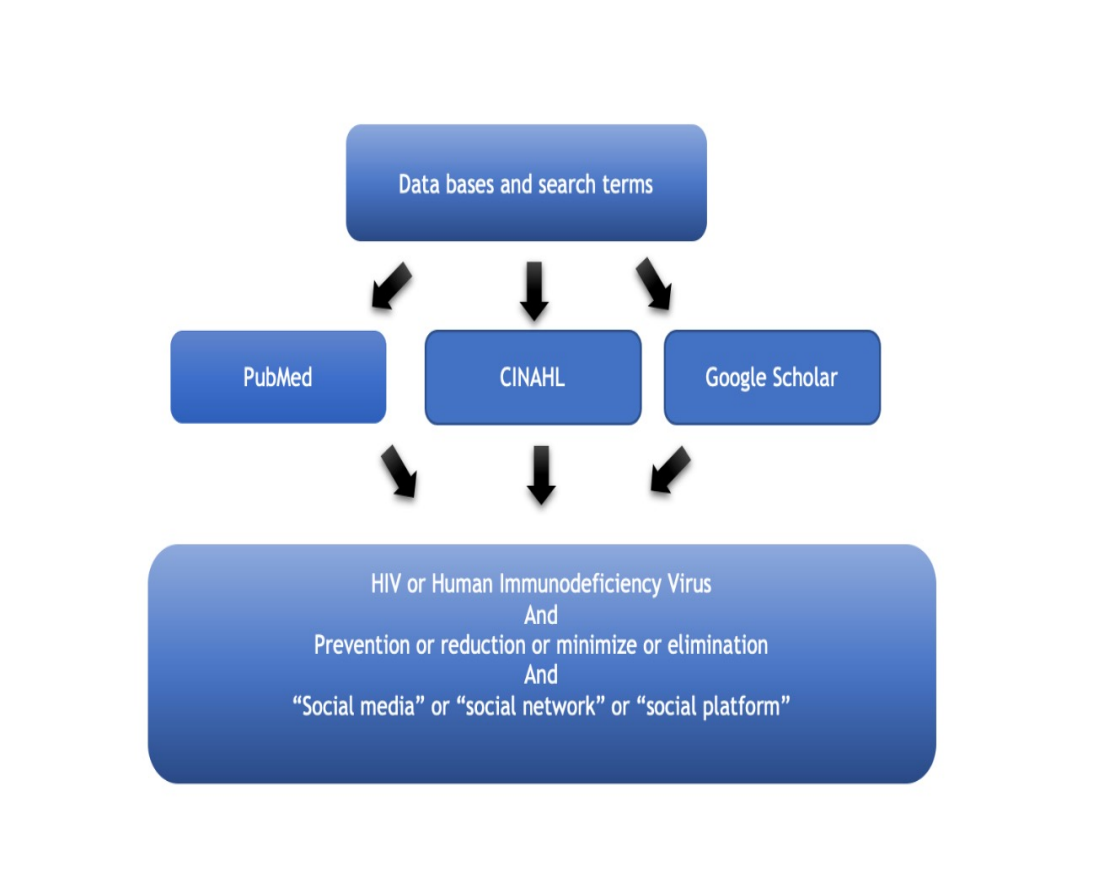
INCLUSION CRITERIA

- **Study population:** people living with HIV
- **Intervention**: health intervention/health promotion
- **Data type:** original peer-reviewed studies including integrative literature review, systematic literature review, qualitative, quantitative, and mixed methods.
- **Publication language:** English

EXCLUSION CRITERIA

- Pro- gradu thesis, case reports and narrative literature reviews
- Print ads, old magazines, textbooks, and newspapers
- Past studies from 2011 backwards and duplicated articles
- Other languages.

Data search process and review



Quality Assessment

- 17 articles with a variety of designs were included. In this study, different assessment tools were used for different study designs.
- **Strengthening the Reporting of Observational Studies in Epidemiology (STROBE)** tool was used in the study to assess observational studies. They provide valuable structures and recommendations for the betterment of the studies, most especially the observational method research.
- **Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)** was used to assess the quality of systematic reviews identified in this study. PRISMA is a valuable tool that guides authors in improving and critically appraising different systematic analyses and meta-analyses. It is evidence-based and concentrated on evaluating the effects and application of interventions included in systematic reviews.
- **Critical Appraisal (CASP)** tool aid and guide researchers through the objective, analytical and evaluation process. Guidelines and checklists must contain a report or publication to establish that studies are clearly stated, completeness and transparency (Buccheri & Sharifi, 2017). The author used the CASP tool checklist to assess qualitative studies.

Data Analysis

- Data analysis is the most challenging phase of ILR. The meticulous process of creating novel ideas involve coming up with evidence-based data.

- Different data extracted from primary sources then thoroughly compared, itemized, coded, and categorized. This part is considered susceptible to mistakes and inaccuracy as these data will go through an evaluation and synthesis process. (Whittemore & Knafl 2005)

- To further evaluate and better understand data analysis among researchers, Whittemore and Knafl(2005) offered a definite analysis method to associate various methodologist data.

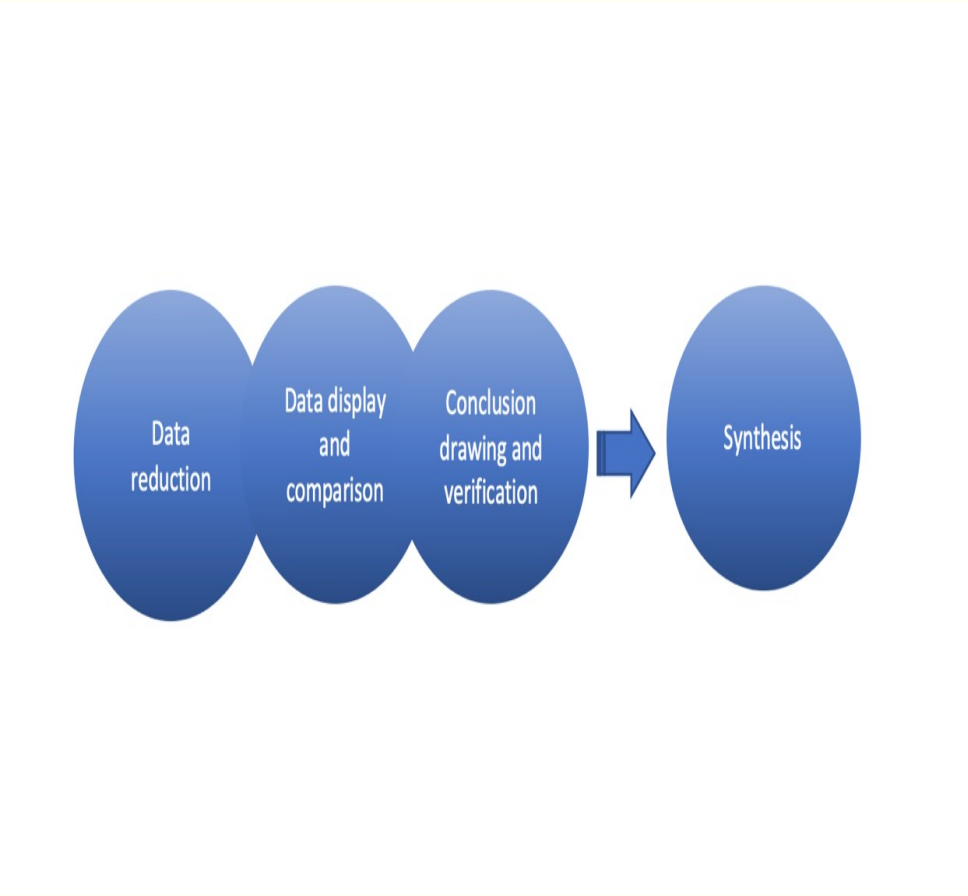
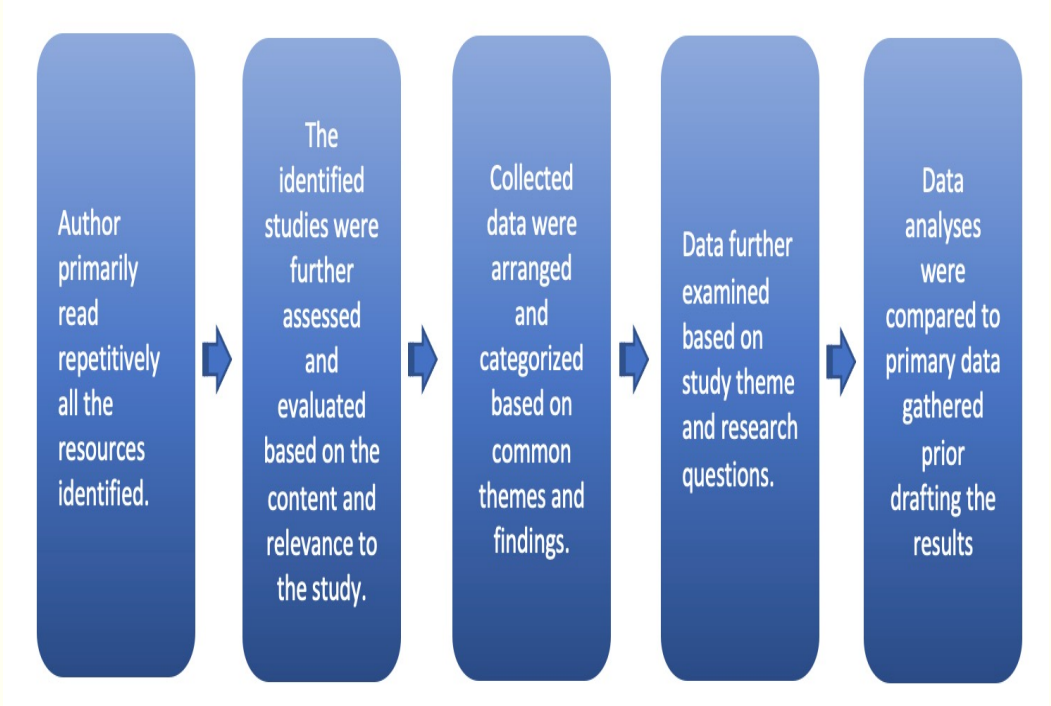


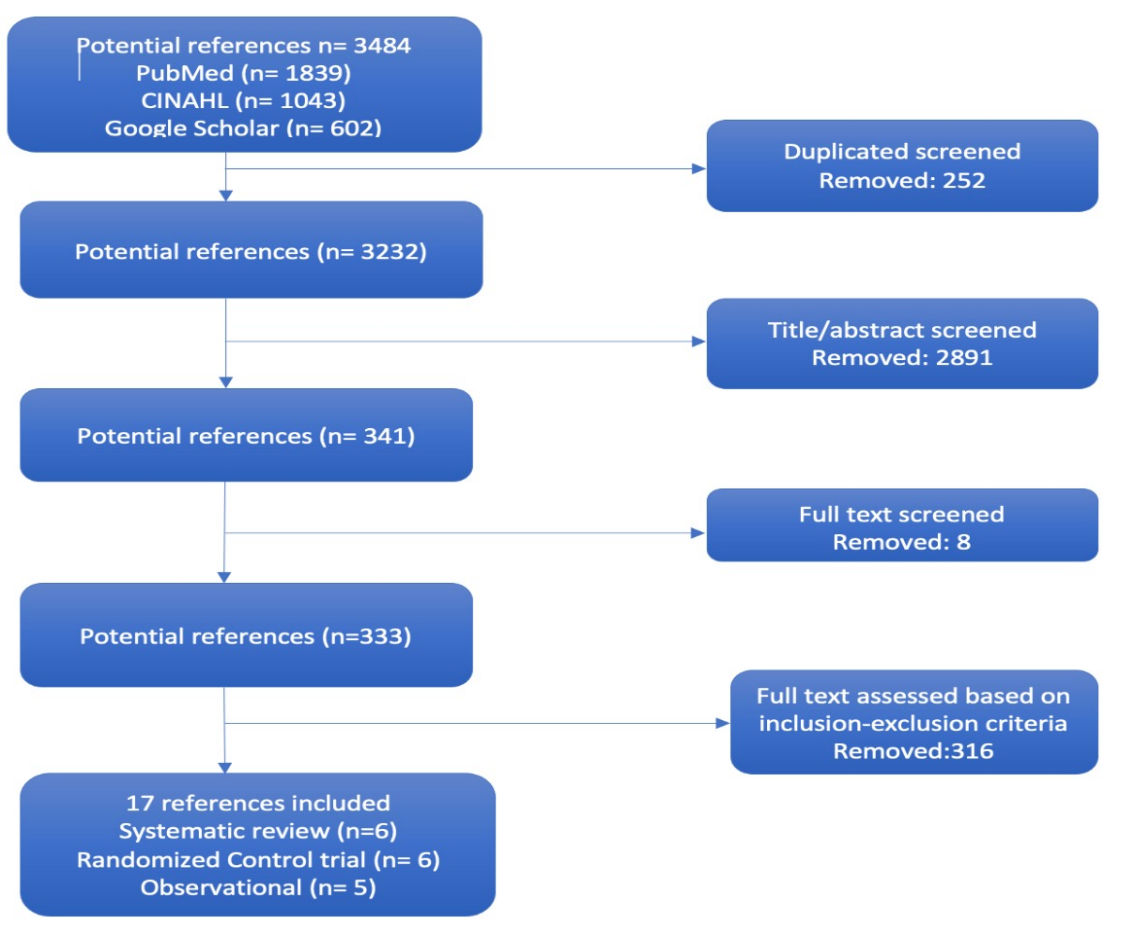
Figure 3: Data analysis process of an integrative literature review from Whittemore and Knafl (2005), modified by the author.



The data analysis process

- Relevant studies were compiled in the research table.
- The five-stage methodology by Whittemore and Knafl was used to perform data analysis.
- Firstly, the data extraction of similar data from primary sources phase. In the analysis phase process, the author primarily read repetitively all the resources identified.
- Secondly, the data reduction phase. The identified studies were further assessed and evaluated based on the content and relevance to the study. Additional data were reduced as we went further.
- Thirdly, the data display phase. Collected data were arranged and categorized based on common themes and findings.
- Fourthly, data comparison phase. Identified data were examined and categorized based on the study theme and research questions.
- Finally, Results were regularly amended prior conclusions. To promote accurate and verified data, results of data analysis were correlated and compared to primary data gathered before drafting the results (Whittemore and Knafl 2005).

Results



Data review process

- Out of seventeen included studies, there were five observational, six systematic reviews, and six qualitative.
- Most studies were completed between 2012 to 2021. From 2015 to 2021, twelve studies were published, while between 2012 to 2014, there were five studies published.
- Most of the studies were conducted and published in the United States (n=12). Other studies were also conducted and published in the United Kingdom (n=3), Peru (n=1) and Switzerland (n=1).

Summary table of different online social media platforms and methods

Buckingham et al. 2017.	**The study used a combination of street outreach and online recruitment to collect data associated with images and messages with specific language and imagery to enhance awareness in HIV prevention.**
Dunne, McIntosh & Mallory. 2014.	A review of keywords such as adolescents, sexually transmitted diseases interventions, text messaging and social network sites provided insights on how healthcare providers could use tools to inform teenagers about HIV prevention.
Jaganath et al. 2012.	The study developed pioneering peer-led HIV prevention on Facebook and served as a new training curriculum such as the evidence-based C-POL method of HIV prevention.
Kennedy et al. 2016.	The study developed a computer-assisted intervention that includes social network and motivational interview methods to lessen the risk of alcohol and other drug and HIV behaviour among the homeless.
Khanna, Schumm & Schneider. 2017.	Two waves of Facebook data from "uConnect" provided new examination methods on different social networks among PrEP users in HIV prevention among YBMSM.
Kudrati, Hayashi & Taggart. 2021.	Facebook, Instagram, YouTube, and custom mobile applications were used as a mode of communication for health promotion about PrEP, HIV prevention of Black and Latin MSM and young women.
MacGowan et al. 2020.	The study used online web-based HIV testing resources such as HIV self-tests online surveys, telephone calls and laboratory tests for awareness and promotion of HIV prevention interventions.
Muessig et al. 2015.	The study used Real-time assessment, feedback, gamification, and virtual reality. HIV, eHealth, mHealth, smartphone, mobile phone, cell phone, mobile health, internet, online, app, application, social media, web, and Web 2.0 are tools used to collect HIV awareness and prevention data.
Nguyen et al. 2019.	Web-based, short message service (SMS)/text messages/email reminder, online video-based, computer-assisted, multimedia-based, social network, live chat and chat room, virtual simulation intervention, and smartphone applications were used as intervention modalities.
Rhodes et al. 2016.	Trained health educators used online social media sites including Adam4Adam, BlackGayChat, Craigslist, and Gay.com to communicate and empower participants to HIV prevention interventions.
Sun, Hoyt and Pachankis. 2019.	Recruitment through advertisements on MSM and LGBT organization websites was done. Participants were directed to a web page containing HIV awareness and prevention information surveys.
Taggart et al. 2015.	The study identified eight social media platforms containing HIV prevention information and social media platforms used for communication.
Young et al. 2013.	Trained sixteen peer leaders facilitated a Facebook group that provides information about HIV. Participants were asked to join the group, request free HIV home kits, complete the questionnaires, and have a 12-week follow-up. Acceptance, engagement, rates of HIV home kits tests and sexual risk behaviour were monitored by peer leaders.
Young et al. 2014.	One hundred twelve ethnic minority MSM received peer-delivered HIV or general health information through the Facebook group over 12 weeks. Peer-led social media HIV prevention interventions raised community adherence among high-risk MSM.
Young et al. 2015a.	Using Facebook and questionnaires, trained health mentors facilitated information through peer-mentored social media communities to increase HIV testing and HIV prevention awareness among Peruvian MSM.
Young et al. 2015b.	Facebook, Craigslist, online discussion forums or chat rooms, gay- or MSM-oriented dating or sexual networking websites or mobile apps, and email referrals were used to gather information for evaluation and assessment for HIV prevention interventions.
Young, Rivers & Lewis. 2014.	Tweets were collected online using a filter to include HIV risk-related keywords such as sexual behaviours and drug use. More than 9800 tweets were extracted and used to make a map indicating the geographical location of HIV related tweets.

Barriers in the implementation of social media in HIV prevention

- Out of 17 references identified, only one reference contained barriers in the implementation of social media in HIV prevention.

- Dunne, McIntosh & Mallory (2014) explored social media options to educate the youth to make sound decisions about sexual behaviours and risks of sexually transmitted infections such as HIV.

- The study also identified barriers and challenges in the use of social media.

- The comprehensive coverage of social media could involve misinterpretation that soon may lead to negative behaviours such as early sexual intercourse, body image disturbance and poor nutrition.

- Study findings also revealed the inadequacy of prior research into social media that may lead to a lack of evidence-based information regarding the use of digital media sites.

- Delivery interruptions of interventions and access difficulty to study sites and intervention resources were challenges of using the internet and online technology.

Discussion

- Social media is a good technique in engaging individuals in the interaction and communication concerning HIV prevention and treatment as it allows the collaboration of a variety of platforms and online strategies from different agencies and organizations (Taggart et al., 2015).

- Studies conducted by Jaganath et al. (2012), Young et al. (2013), Young et al. (2014), Young et al. (2015a) and Khanna, Schumm and Schneider (2017) all agreed and claimed Facebook to be the most effective platform.

- However, Buckingham et al. (2018) believed mobile app GRINDR is more effective in HIV prevention. Nonetheless, Rhodes et al. (2016) stated that Adam4Adam, BlackGayChat and Gay.com are effective tool in HIV prevention awareness.

- The broad reach, accessibility, affordability, and usability are the reasons why online social media platforms dominate the whole world in terms of health information. YouTube acquire billions of users to create, share and watch videos wherever they are. Twitter has more than 214 users that promote HIV health information and prevention. (Kudrati, Hayashi & Taggart 2021.)

- However, the negative impact of online social media use contains misinterpretations of information that soon may lead to possible unsound behaviours'. (Dunne, McIntosh & Mallory 2014.)

- The use of social media in health promotion contributed to ethical considerations that should be included in all training and protocol to protect all participants. Privacy and confidentiality must be taken into account, especially in the Facebook platform involved in private information, hacking and privacy rules. To address privacy issues, administrative staff monitored the group regularly, and peer-leaders were notified when privacy settings changed. (Jaganath et al. 2012.)

Strengths and Limitations

- The strength of this study is that it serves as a representation of a comprehensive view of other available evidence in using social media platforms and strategies worldwide.
- With the availability of various social media platforms, the study will give guidelines to the population and healthcare professionals on which social media platforms and strategies are best and effective to use.
- The inclusion and exclusion criteria were broad and ample to allow more selection of study resources materials.

Ethical consideration

- This study is theoretical and did not require ethical approval from an ethical board. However, the author's transparency in reporting the study is necessary to conduct an ethical literature review.
- The author followed the guidelines from Tutkimuseettisen neuvottelukunnan (TENK), aiming to promote the good scientific practice and ensure any form of breach will be dealt with fairly and professionally.
- According to The Human Sciences Ethics Committee of the Helsinki Region Universities of Applied Sciences (2020), Research Development and Innovation can only be ethically acceptable and reliable if researchers adhere to good scientific practice. (Finnish national board on research integrity TENK 2020)

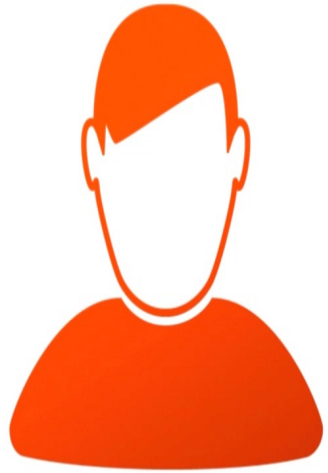
Recommendation

- The presence of different platforms may confuse healthcare professionals, especially those working in infection control, on which is more effective in HIV prevention. The author recommends that government agencies and non-government organisations, in collaboration with health care professionals, invest and create a standardised cost-effective online social media platform and app that will focus mainly on HIV prevention.

- To ensure proper and mannerly interventions are followed, the government must constitute and construct policy implications that will screen and govern online social media platforms in HIV awareness and prevention interventions. This study highlighted the lack of policies and proper evaluation on online social media platforms in HIV prevention by third-world countries, and it is highly recommended that an effective structure and system be used to address the concerns.

- There is evidence that demonstrates the positive impact of the use of online social media on healthcare behaviours. The need for health care professionals, especially in infection control, to continuously learn and upgrade in knowledge and skills in the use of new technologies and to address the barriers and challenges in using social media in HIV preventions is also highly recommended.

- Further research is needed to be designed on clinical benefit, implementation, cost-effectiveness, the effectiveness of social media platforms and strategies in HIV prevention involving a more significant number of participants. Future work by researchers must also focus on the long-term use of online social media platforms that will educate the population, especially the HIV high-risk group in HIV prevention.



Conclusion

- HIV is a very debilitating disease as once you have it; you will have it the rest of your life. The virus has proven to have affected millions of lives around the world. PrEP, condoms, and other HIV prevention methods are promising; however, the majority in the less fortunate countries still have no access to it. While we still have no concrete treatment for this virus, we can have a concrete plan to prevent it. Based on the studies, social media is undoubtedly an effective tool in health promotion and HIV prevention. For some, online social media platforms could be the next breakthrough in healthcare to maximise its purpose positively.
- Nonetheless, the existence of different barriers and challenges endlessly exist. Continuously innovation combined with clear structure and policies will indeed address the challenges.
- The benefits of a study do not depend on technology alone and how it is being used. The study's success in HIV implementation is based on the proper incorporation of evidenced-based methods into technologies. Online social media is only a tool. The advantages can be successfully maximised or not, depending on how it is implemented.

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Thank you!