ISSN 2354-8428
e-ISSN 2598-8727

JURNAL KEPERAWATAN KOMPREHENSIF

COMPREHENSIVE NURSING JOURNAL

Sekolah Tinggi Ilmu Keperawatan PPNI Jawa Barat

Vol. 9 No. 1, January 2023

JURNAL KEPERAWATAN KOMPREHENSIF	VOL. 9	NO. 1	Page 1 - 127	Bandung January 2023	ISSN 2354-8428 e-ISSN 2598-8727

p-ISSN : 2354 8428 | e-ISSN: 2598 8727

Jurnal Keperawatan Komprehensif
Vol. 9 No. 1 January 2023

Review Article

Use of Mobile Health on Adherence among HIV Positives Person: A Literature Review

Anung Widi Armunanto[1]* | Rr.Tutik Sri Hariyati[2] | Agung Waluyo[3]

[1]Mahasiswa Magister Keperawatan Medikal Bedah, Fakultas Ilmu Keperawatan Universitas Indonesia

[2]Departemen Keperawatan dan Keperawatan Dasar, Univerisitas Indonesia

[3]Departemen Pengabdian Masyarakat, Universitas Indonesia

***contact**

anung.widi@ui.ac.id

Received : 23/12/2022
Revised : 30/01/2023
Accepted : 30/01/2023
Online : 31/01/2023
Published : 31/01/2023

Abstract

Aim: Antiretroviral is the main key to improving the quality of life and among ways to prevent the transmission of diseases due to HIV. In the use of drugs in the long term, psychosocial problems that arise often become barriers to patient adherence. This paper aims to show various forms of application and see the benefits derived from the use of mobile health (m-Health) in increasing the adherence of HIV positive patients.
Method: The method used is a review of journals from Pubmed published no more than the last five years about the use of mobile health in those infected with HIV.
Result: The result is that all existing articles provide explanations about the application of mobile health and positive result in supporting adherence, but there is a note regarding the consideration of its implementation goals and the services provided as well as the retention rate after using after several time.
Conclusion: The conclusion is that mobile health provides benefits to increase adherence and help overcome the patient's psychosocial problems.

Keywords:
Adherence, HIV, mobile health

INTRODUCTION

According to the 2010 – 2020 survey, the number of HIV cases has decreased by 16.5%, namely 50,282 in 2019 to 41,987 in 2020, but AIDS cases increased by 22.78% from 7036 cases in 2019 to 8,639 in 2020 (1). These data show that even though new cases have decreased, the process of decreasing body resistance due to the disease process has not been successfully stopped so that those who are HIV positive continue to the AIDS stage (1). Antiretrovirals (ARVs) although not a cure but help patients to live healthy lives. Long-term drug consumption requires adherence to achieve the goal of staying healthy and preventing resistance (2).

Psychiatric problems, cognitive disorders, social stigma, substance abuse, housing problems can cause problems in patient adherence (2). Even people who are HIV positive have neurocognitive disorders that can reach 50% even though they are already using ART (Anti Retroviral Therapy) effectively (3). The existence of mobile devices including text-based messages, smartphone applications, mobile websites, and social media can support adherence (4). Practical and easily accessible for HIV positive patients is an indispensable requirement. This paper aims to show various forms of application and see the benefits derived from the use of mobile health (m-Health) in increasing the adherence of HIV positive patients.

https://doi.org/10.33755/jkk

This is an open access article under the CC BY-SA license

p-ISSN : 2354 8428 | e-ISSN: 2598 8727

Jurnal Keperawatan Komprehensif
Vol. 9 No. 1 January 2023

METHODS

Design

This writing uses a literature review method with a predetermined topic, namely the use of m-Health in increasing the adherence of HIV positive patients.

Searching strategies and inclusion criteria

Articles were searched in an online database, namely Pubmed, using the keywords adherence, mobile health, HIV. Keyword used was HIV OR AIDS AND Adherence OR compliance AND mobile application OR mHealth OR mobile app. The inclusion criteria of the journal search were to use English and published no more than the last 5 years. Exclusion criteria for journals that do not discuss the benefits of using m-Health in HIV positive people.

Data extraction

After doing an electronic search, all of the titles and abstracts that were discovered were uploaded to the appropriate reference manager databases, and any duplicate entries were swiftly recognized, identified, and removed. Screenings of the titles and abstracts found by the initial electronic searches were carried out by two of the authors in a manner that was distinct from one another yet complementary. When the abstract did not provide sufficient information regarding whether or not the study satisfied the inclusion criteria, the full published text was collected and evaluated on its own. This was done in cases where the abstract did not provide sufficient information regarding whether or not the study satisfied the inclusion criteria. The full texts were included in the reviewer were initial qualitative synthesis by two reviewers independently using a standard form, which included author and year of publication, study design and setting, intervention, measure with follow up time and scale, and outcomes. The review was conducted by two reviewers independently using a standard form. Two separate reviewers worked independently using a standardized questionnaire to carry out the review. In the end, the conflict that had been going on between the two reviewers was resolved through the participation of third writers and debate.

Critical appraisal

Critical Evaluation Skills Programme (CASP), a tool that is available for critical appraisal, was utilized for the purpose of evaluating the quality of each of the included studies (5). This evaluation was carried out in an independent manner by both of the reviewers, and any differences that arose were discussed with additional reviewers during the meeting. At this point, we did not take into consideration any research that were determined to have inadequate methodological rigor.

RESULT AND DISCUSSION

The application of inclusion and exclusion criteria as well as the selection of authors who are considered appropriate to the topic to be discussed resulted in 10 articles.
The results of a literature search (table 1), the use of m-Health with a variety of services provided to HIV positive patients provides benefits in adherence therapy.

https://doi.org/10.33755/jkk

This is an open access article under the CC BY-SA license

p-ISSN : 2354 8428 | e-ISSN: 2598 8727

Jurnal Keperawatan Komprehensif
Vol. 9 No. 1 January 2023

Table 1.
Literature Search Results

No	Tittle	Author (Year)	Method	m-Health and benefits
1.	Recruitment of Youth Living with HIV to Optimize Adherence and Virologic Suppression: Testingt the Design of Technology-Based Community Health Nursing to Improve Antiretroviral Therapy (ART) Clinical Trials	Agwu, A. L., et al (6)	Single-blinded RCT	Reminder messages, adherence assessments, health consultations, periodic health checks provide health messages • Increased adherence, suppressed virus, decreased mortality and morbidity associated with HIV
2.	The Implementation of A Text Messaging Intervention to Improve HIV Continuum of Care Outcomes Among Persons Recently Released From Correctional Facilities: Randomized Controlled Trial	Castonguay, B. J. U., et al (7)	RCT	Reminders for control schedules, reminders for therapy, reminders for HIV transmission prevention, consultations • Success in reaching vulnerable populations to get existing facilities in m-Health
3.	A Pilot Study Protocol for Designing and Developing A Mobile Health Application for Engagement in HIV Care and Medication Adherence in Youth and Young Adults Living with HIV.	Erguera, X. A., et al (8)	Single arm trial	Providing collaboration features according to specific target user needs in various situations Increasing interactions in medication and suppressed viruses
4.	Focus Groups Inform A Mobile Health Intervention to Promote Adherence to A Mediterranean Diet and Engagement in Physical Activity Among People Living With HIV	Henry, B. L., Quintana, E., Moore, D. J., Garcia, J., & Montoya, J. L. (9)	Kualitatif	Health consultation (diet and psychosocial problems), reminder messages, recommendations on existing problems through existing applications Help reveal and solve problems related to HIV and motivate to stay active

This is an open access article under the CC BY-SA license

p-ISSN : 2354 8428 | e-ISSN: 2598 8727

Jurnal Keperawatan Komprehensif
Vol. 9 No. 1 January 2023

5.	M-Health Interventions to Promote Anti-Retroviral Adherence in HIV: Narrative Review	Lee, S. B., & Valerius, J. (2)	Narrative review	The results of the review stated an increase in attention to HIV positive with a variety of coverage and interventions provided, although of course there are limitations. There are differences between groups who have digital access compared to those who have hardware, there are even differences between groups that have digital access • Supporting adherence to men having sex with men (MSM), regardless of the degree of suppression of the HIV virus
6.	Recent mHealth Interventions to Support Medication Adherence Among HIV-Positive Men Who Have Sex With Men	Muessig, K., LeGrand, S., Horvath, K., Bauermeister, José., Hightow-Weidman, L. (4)	Jurnal review	Reminder messages, send messages every time you open the medicine box • Adherence increase up to 75%
7.	Technical and Psychosocial Challenges of mHealth Usage for Antiretroviral Therapy Adherence Among People Living With HIV in A Resource-Limited Setting: Case Series	Ngowi, K. M., et al. (10)	RCT	Providing regular reminder messages • Good response from respondents, most chose not only to receive regular SMS
8.	SMS Messaging to Improve ART Adherence: Perspectives of Pregnant HIV-Infected Women in Kenya on HIV-Related Message Content	Ronen, K., et al. (11)	RCT	Reminder messages, brief calls to monitor adherence, measure stress levels, depression levels, and self-efficacy • Able to reduce stress, increase self-efficacy on adherence, decrease levels of depression (intervention group)

https://doi.org/10.33755/jkk

This is an open access article under the CC BY-SA license

p-ISSN : 2354 8428 | e-ISSN: 2598 8727

Jurnal Keperawatan Komprehensif
Vol. 9 No. 1 January 2023

9.	HHS Public Access: The Impact of Cell Phone Support on Psychosocial Outcomes for Youth Living With HIV Nonadherent to Antiretroviral Therapy	Sayegh, C.S., et al (12)	RCT	Monitoring taking medication through a special device that is connected to a data center every time you open a medicine bottle
10.	Text Messaging For Improving Antiretroviral Therapy Adherence: No Effects After 1 Year in A Randomized Controlled Trial Among Adolescents and Young Adults	Linnemayr, S., et al (13)	RCT	It doesn't always work especially when used for behavior change. It is necessary to consider the benefits obtained and the considerations of beneficiary patients in using a technology

The results of the review of the journal in table 1 show that the use of m-Health is the use of cellular technology, both text-based, voice-based, or applications and even using internet-based platforms, which are one-way or two-way (2,4).

The focus of services provided is in the form of reminders and education (2). Subsequent developments in m-Health are also used to evaluate the physical and psychological state of several tools added to its features and provide assistance in providing solutions (7,12). m-Health is able to reach all targets, even targets that are difficult to reach amidst the social stigma about this disease that still exists (11). Service users who are young, said to have low adherence, see an increase with this service (6).

The advantages in the journal that exist in its implementation there are several problems that can be considered including the content / content of the message. The contents of the message sent should avoid sensitive words leading to HIV (10,11). Cultural, religious and demographic considerations are also important (8) and it should be remembered that messages sent via m-Health are not always effective in changing behavior (13).

CONCLUSION

The benefits of using m-Health for those who are HIV positive are very helpful in increasing adherence, even helping to overcome emerging psychosocial problems, as well as being able to reach targets that are difficult to reach. The use of cellular phones as a basis for m-Health development will make it easier for users to access and utilize it because this technology is already used. Simple or complicated features that will be provided need to consider the service capabilities and targets so that m-Health runs optimally.

REFERENCES

1. Jayani I, Susmiati S, Mirasa YA, Khotimah K. Relationship Between Adherences of Antiretroviral (ARV) Consumption with Viral Load in HIV/AIDS. Journal for Quality in Public Health. 2021;5(1):300–5.
2. Lee SB, Valerius J. mHealth interventions to promote anti-retroviral adherence in HIV: Narrative review. JMIR Mhealth Uhealth. 2020;8(8):e14739.
3. Henry BL, Quintana E, Moore DJ, Garcia J, Montoya JL. Focus groups

This is an open access article under the CC BY-SA license

p-ISSN : 2354 8428 | e-ISSN: 2598 8727

Jurnal Keperawatan Komprehensif
Vol. 9 No. 1 January 2023

inform a mobile health intervention to promote adherence to a Mediterranean diet and engagement in physical activity among people living with HIV. BMC Public Health. 2019;19(1):1–9.

4. Muessig KE, LeGrand S, Horvath KJ, Bauermeister JA, Hightow-Weidman LB. Recent mHealth interventions to support medication adherence among HIV-positive men who have sex with men. Curr Opin HIV AIDS. 2017;12(5):432.
5. Falcon H, Crosse A, Donaghy J, Harrison V, Hillman L, Lawrence A, et al. CASP and CONSORT. Br Dent J. 2006;201(3):130–1.
6. Agwu AL, Yusuf HE, D'Angelo L, Rathore M, Marchesi J, Rowell J, et al. Recruitment of youth living with HIV to optimize adherence and virologic suppression: Testing the design of technology-based community health nursing to improve antiretroviral therapy (ART) clinical trials. JMIR Res Protoc. 2020;9(12):e23480.
7. Uhrig Castonguay BJ, Cressman AE, Kuo I, Patrick R, Trezza C, Cates A, et al. The implementation of a text messaging intervention to improve HIV continuum of care outcomes among persons recently released from correctional facilities: randomized controlled trial. JMIR Mhealth Uhealth. 2020;8(2):e16220.
8. Erguera XA, Johnson MO, Neilands TB, Ruel T, Berrean B, Thomas S, et al. WYZ: a pilot study protocol for designing and developing a mobile health application for engagement in HIV care and medication adherence in youth and young adults living with HIV. BMJ Open. 2019;9(5):e030473.
9. Henry BL, Quintana E, Moore DJ, Garcia J, Montoya JL. Focus groups inform a mobile health intervention to promote adherence to a Mediterranean diet and engagement in physical activity among people living with HIV. BMC Public Health. 2019;19(1):1–9.
10. Ngowi KM, Lyamuya F, Mmbaga BT, Muro E, Hillu Z, Shirima M, et al. Technical and psychosocial challenges of mHealth usage for antiretroviral therapy adherence among people living with HIV in a resource-limited setting: case series. JMIR Form Res. 2020;4(6):e14649.
11. Ronen K, Unger JA, Drake AL, Perrier T, Akinyi P, Osborn L, et al. SMS messaging to improve ART adherence: perspectives of pregnant HIV-infected women in Kenya on HIV-related message content. AIDS Care. 2018;30(4):500–5.
12. Sayegh CS, MacDonell KK, Clark LF, Dowshen NL, Naar S, Olson-Kennedy J, et al. The impact of cell phone support on psychosocial outcomes for youth living with HIV nonadherent to antiretroviral therapy. AIDS Behav. 2018;22:3357–62.
13. Linnemayr S, Huang H, Luoto J, Kambugu A, Thirumurthy H, Haberer JE, et al. Text messaging for improving antiretroviral therapy adherence: no effects after 1 year in a randomized controlled trial among adolescents and young adults. Am J Public Health. 2017;107(12):1944–50.

https://doi.org/10.33755/jkk

This is an open access article under the CC BY-SA license