



# The Effectiveness of Peer Group Support to Increase Health Related Quality of Life among Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome Patients: A Systematic Review

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#### Abstract

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Introduction

BACKGROUND: The quality of life (QoL) of human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) patients affects the health condition of HIV/AIDS patients and can cause the condition to worsen, the role of peer groups is very important in increasing the morale of the patients.

AIM: This review aims to analyze the effectiveness of Peer Group Support to Increase Health Related to QoL among HIV/AIDS patients.

METHODS: A systematic review conducted on September–December 2020 using five electronic databases (Scopus, Science Direct, CINAHL, PubMed, and ProQuest). The study mean was guasi-experimental and randomized control and trial design. The Center for Review and Dissemination and the Joanna Briggs Institute Guideline used to assess quality and PRISMA checklist to guide this review. Title, abstract, full-text, and methodology were assessed for the eligibility of the studies, and result synthesis was analyzed using narrative for every themes.

RESULTS: Twenty three studies were found and met inclusion criteria in the review after risk of bias had assessed. The entire article discusses the benefits of peer group support in improving the QoL of HIV/AIDS patients, including: (1) Being a storyteller; (2) provide mutual motivation; (3) success story; (4) increase resilience; (5) preventing negative stigma; and (6) improve patient's feelings so that immunity continues to improve.

Conclusion: Based on the summary of the study, it shows that peer group support is very useful in improving the QoL of HIV/AIDS patients, because it can monitor each other's health conditions.

People with human immunodeficiency virus (HIV) still show high rates and antiretroviral (ARV) treatment is still not 100% [1]. Adherence to irregular use of ARVs will increase the amount of virus in the patient's body [2], as a result the viral load will show high numbers and CD4 counts will decrease and have an impact on a progressive decrease in body immunity [3]. The decrease in immunity that occurs has an impact on the worsening of the disease, the mistake of many opportunistic infections and will make the quality of life (QoL) of the patient worse, thus affecting on the daily conditions of the patients [4]. The QoL of HIV sufferers must be considered properly because sufferers must constantly adhere to treatment therapy [5].

The largest HIV-infected population in the world is on the African continent (25.7 million people), then in Southeast Asia (3.8 million), and in America (3.5 million) while the lowest was in the Western Pacific with 1.9 million people. The high population of people infected with HIV in Southeast Asia requires Indonesia to be more aware of the spread and transmission of this virus. Data on HIV acquired immunodeficiency syndrome (AIDS) cases in Indonesia continues to increase from year to year. The five provinces with the highest number of HIV cases are East Java, DKI Jakarta, West Java, Central Java, and Papua, where in 2017 the most HIV cases were also owned by these five provinces. The provinces with the highest number of AIDS cases are Central Java, Papua, East Java, DKI Jakarta, and Riau Islands. AIDS cases in Central Java are about 22% of the total cases in Indonesia. The trend of the highest HIV and AIDS cases from 2017 to 2019 is still the same, which is mostly on the island of Java [6].

Lacks of knowledge in the community and in the family causing people with HIV/AIDS are often ostracized and get discriminatory behavior from society and families. People living with HIV will cause serious problems, namely, physical, social, emotional, and family problems which deny that their family members are sick. Some families choose to avoid and isolate their families because they feel ashamed to have infected family members. In HIV/AIDS patients need family support and treatment so that the patient's QoL improves, but if the family actually shows an attitude of rejection and does not care about the patient's condition

and the family does not provide support to the patient, as a result, the patient will judge himself negatively and not optimally in handling the disease so that they can worsen the patient's health. QoL in HIV/AIDS patients is very important to note because this infectious disease is chronic and progressive so that it has a broad impact on all aspects of life, such as physical, psychological, social, and spiritual. One of the psychosocial problems that arise is the lack of family support, social support such as peer support, which is sometimes more difficult for patients to face so that it can affect the QoL [7], [8].

Peer Group Support is effective in forming positive behaviors and new values in individuals who are members; support from peer groups has been shown to increase patient morale in the treatment process [9]. The peer support approach so far has not been integrated with patient care in hospitals, so it is necessary to do research to develop peer group support models in increasing ARVs, increasing immunity, reducing Ols, and improving the QoL of patients. Peer support is an intervention that has a positive effect on QoL among those in clinical Stages 3 and 4. This intervention costs relatively low costs, and it is highly recommended that the health system continue to improve with peer support starting with anti-retroviral therapy (ART) [10].

HIV/AIDS sufferers who continue to experience an increase and are not given appropriate and continuous interventions will make the number of cases increase, because the factors ranging from promotive to rehabilitative must work together well. Promotional and preventive prevention must be continuously improved so that no new cases emerge. Curative action must be increased to improve ART and improve the quality of patients, because OI and immunity can still be well controlled. Meanwhile, rehabilitation efforts are used to increase coping and resilience of patients who frequently enter and leave the hospital. So far, the participation of community support is an important thing needed by sufferers because they will have enthusiasm in life therapy that they have to do. The participation of peer groups is very important, peer groups which are special groups with the same conditions will make them support each other.

This systematic review aims to analyze the effectiveness of peer group support to Increase health related QoL among HIV/AIDS patients.

### Methods

### Protocol and registration

A comprehensive summary in the form of a *systematic review* on "The effectiveness of Peer Group Support to Increase Health Related QoL Among HIV/AIDS Patients." The protocol and evaluation of *systematic reviews* use *the PRISMA checklist* to determine the selection of studies that were found and adjusted for redundant the *systematic review*.

#### Database to be searched

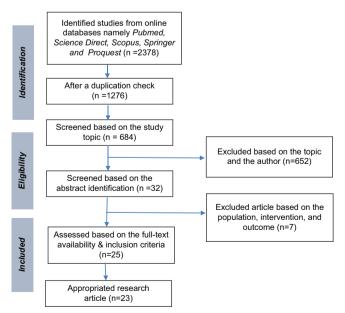
The systematic review is a comprehensive summary of many research studies that are determined based on a specific theme. The literature search was conducted in January–February 2021. The data used in this study were secondary data obtained from research conducted by the previous researchers. The secondary data sources obtained were well-reputed international journal articles with predetermined themes. Five online library databases were used from high to moderate quality namely *PubMed, Science Direct, Scopus, Springer, and Proquest.* 

#### Criteria

*PICOS framework* was employed for the search strategy [11]. It consists of:

- 1. *Population*: The population that will be analyzed is based on the theme specified in the systematic review
- 2. *Intervention*: A management action on the subject analyzed is based on a predetermined theme in a *systematic review*
- 3. *Comparator*: Another intervention/ measurement is used as a comparison
- 4. *Outcomes*: The results obtained from the study are analyzed according to the theme defined in the systematic review
- 5. *Study design*: The research design used in the article is the reviewed article.

From the diagram above (Figure 1), the journal analysis is on the sheet. Following is the table of outcomes resulted from the journal's review:





No	Authors	Methods	Results
1	(Geldsetzer,	D: non-inferiority cluster-randomized trial	The role of CHW has an effect on suppressing the number of viruses significantly.
	2017)	S: A cluster is one of 48 health-care facilities with its	Most low- and middle-income countries face severe shortages of nurses and
		surrounding catchment area. 24 clusters were randomized	doctors, and the distance to the nearest health facilities is a major barrier to
		to ART home delivery and 24 to the standard of care.	accessing care in many areas. Treatment for chronic disease to be administered
		V: Independent: Home visit from Community health workers	safely by CHW is an increasingly important one as the burden of chronic non-
		(cadres), dependent: suppression of the number of viruses	communicable disease
		I: CD4 examination and ART treatment	
		A: Itting robust clustered log-binomial models	
2	(Mukumbang,	D: Systematic review	Given these challenges, we suggest that a way forward for understanding how
	Belle and Wyk, 2017)	S: 100–200 respondent	adherence club interventions and other group-based adherence models work is to
		V: HIV/AIDS treatment and care models	review the literature of other disciplines for possible theories on adherence to ART
		I: realist evaluation (Intervention-Context-Actor- Mechanism	and/or chronic treatment
		Outcome)	
		Heuristic tool	
		A: Narative synthesis	
3	(Nachega,	D: Systematic review (7 studi kohort dan 7 randomized control	The results of the comprehensive summary showed that the results of HIV sufferers
	2016)	and trial)	adherence to HIV/AIDS drugs were optimal, 92.9% of 295 respondents had adhere
		S: 500 – 1000 respondent	to ARV treatment. Viral suppression showed no significant change in viral load in the intervention treatment agreement and patient follow-up gave more significant results whereas case death had no significant association between community approach and case death
		V: Independen: intervensi berbasis komunitas	
		Dependen: kepatuhan the use of ARV, caring patient and the	
		outcome of the patient's clinical	
		I: a meta-analysis	
		A: Use the Chi-square test and the Preferred Reporting Items	
4	(Swendeman,	for Systematic Reviews and Meta-Analyses D: experimental design	This hybrid implementation-effectiveness study examines alternative models for
+	2019)	S: 1500 individual	implementing the CDC guidelines for routine HIV/STI testing for YAHR contracting
	2019)	V: I: text message, online peer group support, coaching.	HIV and to deliver evidence-based behavioral intervention content in modular
		Dependent: efficacy, implementation, and cost-effectiveness	elements instead of manuals in scripts and available over 24 months of follow-up, while also monitoring implementation, cost, and effectiveness. The greatest impact is expected for coaching, whereas online peer support groups are expected to have lower impact but possibly more cost effective
		of easily mountable and adaptable	
		I: Questionnaires assess socio-demographic factors; health	
		care access, insurance, and utilization; substance use; sexual	
		behaviors; PrEP and PEP use; mental health; social media	
		use: and locator information and consent to access medical	
		records and to use social security numbers for locating efforts	
		Interviewers enter the participants' responses and rapid	
		diagnostic test results in the CommCare mobile-Web	
		•	
		electronic assessment and case management system that is cloud based and Health Insurance Portability and	
		Accountability Act	
		A: Multilevel models using Stata	
5	(Kimera <i>et al</i> .,	D: Qualitative research design	The YLWHA experienced many challenges and support needs, some of which
0	2019)	S: Primary caregivers, health care providers, and teachers as	occurred in schools and affected their quality of life. The impact of these challenges
	2013)	respondents	is poor health and education outcomes and school dropouts. The schools in which
		V: Psychosocial wellbeing, treatment and health, disclosure of	young people spend most of their formative years have not provided adequate
		the status of HIV AIDS	support for the YLWHA. It was also identified that stigma complicates the challenge of living with HIV/AIDS which require interventions for the well-being of YLWHA to understand and overcome HIV stigma and its consequences
		I: In-depth interview	
		A: A framework thematic analysis	
6	(Handayani, 2019)	D: Cross sectional study	Health care providers should scale up provider-initiated testing and counseling to
		S: 39 respondents people living with HIV/AIDS	contractor groups, high-risk groups, vulnerable groups, and communities. PLWHA are encouraged to actively participate in peer support groups (KDS) in order to improve their quality of life
		V: Dependent: The quality of life and independent: The	
		characteristics possessed	
		I: THE WHOQOL-HIV BREF	
		A: T-test and Chi-square and logistic regression to determine	
		the most dominant factor	
7	(George and Mcgrath, 2019)	D: Cohort Prospective	ARV non-adherence in the last 6 months occurred as much as 25%. There was no relationship between non-compliance with social support, stigma or disclosure of HIV status. In this study found that incomplete ARV knowledge at enrollment was associated with possible non-adherence to ARVs
		S: 385 client	
		V: Independent: Dependent: Social support, Stigma,	
		discrimination, Disclosure of status,	
		Non-compliance, ARV therapy	
		I: Questionnaire	
_		A: T-test, wilcoxon, Chi-square	
В	(Mafirakureva	D: Cross sectional	Higher HRQOL levels are positively and significantly related to income, education
	<i>et al.</i> , 2016)	S: 257 client	and employment
		V: I: Education	
		Occupation	
		D: Quality of life	
		I: Questionnaire	
~	ALL	A: Descriptive	way and a graph of graph and a second s
9	(Ndubuka	D: Cross sectional	The environmental domain (physical security, home environment, social care,
	<i>et al.</i> , 2017)	S: 456 clients	finance, quality and accessibility, freedom, opportunities to obtain information and
		V: I: ARV Treatment	participation in recreational activities) has the lowest score which has a negative
		D: Quality of life	impact on the quality of life of PLWHA
		I: Questionnaire	
10	()	A: Descriptive	
10	(Narsai	D: Cross sectional	The majority of the sample is women (79%), those who are HIV positive are younge
	<i>et al.</i> , 2016)	S: 600 clients	than negative, HIV positive respondents are more likely to be single, secondary
	KwaZulu-Natal	V: I: ARV Treatment, Social, economy	education, and more than 70% of respondents are unemployed, and more than a
	were included	D: Quality of life	third of respondents who are HIV positive have difficulty in accessing health service
	from both	I: Questionnaire	
	phase\\none	A: Chi-square, t-test,	
	(household	Logistic regression	
	sample		
11	(Vu <i>et al</i> ., 2019)	D: Quasi-experiments	Of the 617 FSW (intervention: 309, comparison: 308) baseline data showed gaps
		S: 617 (intervention : 309, Comparison 308)	in achieving HIV care and treatment targets, and the potential for HIV transmission from FSW to their partners
		V: I: Community-based ARV services	
		D: ARV therapy	
		I: Questionnaire	

### F - Review Articles

	Authors	Methods	Results
	(Marks et al.,	D: Cohort	There were no significant differences in viral load reduction between the intervention
	2018)	S: 982 intervention	and control groups
		946 controls	
		V: I: intervention CBI and counseling support D: improve HIV	
		Patients viral loads	
		I: document ( <i>viral load</i> Data)	
		A: MANOVA	
	(Naldi and	D: cross ssectional	Support groups also have a positive effect on HIV patient adherence, this is
	Amanah,	S: 108 respondents	supported by interactions between peer support group members, this is supported
	2020)	V: independent: patient characteristics, group support dan dependent: therapy adherence	by previous studies that 89.9% of peer support helps HIV patients share and increase knowledge and experiences about the importance of drinking. Drugs with
		I: demographic questionnaire and respondent compliance	sustained effect. The statement in question is that peer support activities should n
		A: Chi-square dan logistic regression	be stopped, because if they are stopped it will play a role in the psychosocial role
			HIV sufferers
	(Chime et al.,	D: cross sectional	Peer-based interventions are a feasible and effective tool for maintaining optimal
	2018)	S: 840 respondents	adherence among people living with HIV/AIDS in resource-limited settings; therefore
		V: Independent: Peer group support, and dependent: Medication adherence	research should concentrate on interventions that do not focus on individuals alor but rather on interventions that strengthen the capacity of groups to participate
		I: Questionnaire and observation	collectively in HIV programs
		A: Chi-square dan multivariate binary logistic	
	(Mao <i>et al</i> .,	D: A randomized controlled clinical trial	The results reveal a negative association between depression and ART adherence
	2019)	S: 319 HIV/AIDS patients	over time, and a mediating effect of perceived support from spouse/partner or
		V: Independent: Depression, social support, dependent:	children. Interventions to promote ART adherence should focus on strengthening
		adherence to ARV	the relationship of PLHIV with their partners/partners and their children, promoting
		I: DAAS questionnaire, social support questionnaire and patient ARV compliance records	provider-patient collaborative relationships, and increasing peer support among PLHIV
		A: Descriptive through observation for 6 months	
	(Van-Hout,	D: Cluster randomized controlled trial	These stakeholders will include health service users, policy makers, health care
	et.al, 2020)	S: 25 patients and 10 health workers	providers, community leaders and members, researchers, non-governmental
		V: Independent: Chronic care, dependent: Evaluation of HIV,	and international organizations. Exploration will be carried out during project
		diabetes, and hypertension	implementation, in addition to understanding the impact of broader structural and contextual factors
		I: Model development, in-depth interview and secondary data A: Thematic analysis	contextual factors
,	(Dalmida <i>et al</i> .,	D: Quantitative Descriptive	High levels of depressive symptoms are found in PLWHA, which negatively impac
	2013)	S: 292 male and female outpatients with various stages of HIV	health outcomes. Religious coping, perceived stress, and satisfaction with social
		V: Independent: Psychosocial and demographic, with the	support play important roles in depressive symptoms among PLHIV
		dependent: Depressive symptoms	
		I: Questionnaire	
	(Rasyiid <i>et al</i> .,	A: Linear regression, Chi-square test, and ANOVA D: Descriptive cross-sectional	There is a statistically significant effect of the Peer Support Group on improving the
	(Nasylid <i>et al.</i> , 2016)	S: 60 subjects	quality of life. Quality of life is influenced by family income and education. This stu
	2010)	V: Dependent: Quality of life and independent: peer support	concluded that there is an effect of peer support groups on reducing depression in
		group	PLHIV and there is an effect of peer support groups on improving the quality of life
		I: Questionnaire	of PLWHA
	(D. 1. 1. 1. 1. 1.	A: Multiple linear regression	
	(Dalmida <i>et al</i> ., 2013)	D: Quantitative Descriptive	High levels of depressive symptoms are found in PLWHA, which negatively impac health outcomes. Religious coping, perceived stress, and satisfaction with social
	2013)	S: 292 male and female outpatients with various stages of HIV V: Independent: Psychosocial and demographic, dependent:	support play important roles in depressive symptoms among PLHIV. These finding
		Depressive symptoms	underscore the need for health-care providers to adequately screen PLHIV and the
		I: Questionnaire	depression and work closely with mental health care providers, social workers, ar
		A: Linear regression, Chi-Square test, and ANOVA	pastoral care counselors to address the mental, social and spiritual needs of PLH
			and optimize their HIV-related outcomes
)	(Rasyiid <i>et al</i> .,	D: Descriptive cross-sectional	The results showed that there was a statistically significant effect of peer support
	2016)	S: 60 subjects V: Dependent: Quality of life and independent: Peer support	groups so that there was a reduction in depression in PLWHA. Depression is influenced by family income and education. There is a statistically significant effect
		group	the peer support group on improving the quality of life
		I: Questionnaire	· · · · · · · · · · · · · · · · · · ·
		A: Multiple linear regression	
	(Shriharsha	D: This study is a cross-sectional descriptive study	The findings reveal a significant negative correlation between quality of life and
	and Rentala,	S: 450 PLHIV who visited the ART center, District Government	depression. When all variables are considered together to find a significant predic
	2020)	Hospital, Bagalkot V: Independent: Demographic characteristics, dependent:	of QoL. The male gender, who graduated, not knowing the mode of transmission had positively predicted quality of life. On the other hand, having basic education,
		Quality of life	being in a nuclear family, having an HIV-positive wife, having HIV-positive children
		I: The data were collected using the self-report method and	HIV infection through homosexual relationships, a history of suicide attempts, and
		hospital records using a socio-demographic questionnaire	history of alcohol consumption negatively predict the quality of life for PLHIV
		A: Pearson correlation, analysis of variance, t-tests, Linear	
	(Kumic	regression analysis	
	(Kurniasari <i>et al.</i> , 2016)	D: Analytic and observational study with cross-sectional design	Participation in HIV/AIDS peer groups, social support, and family support are positively associated with reduced stigma and discrimination against PLHIV. High
	el al., 2010)	S: 65 PLWHA who are HIV/AIDS KDS participants and 35	income, higher education, less stigma and discrimination are positively associated
		PLWHA who do not participate in HIV/AIDS are selected by	with the quality of life of PLHIV. Core self-evaluation is positively related to the
		means of fixed exposure sampling	quality of life of PLHIV
		V: Dependent: Quality of life and independent: participation in	
		HIV/AIDS peer groups	
		I: Questionnaire	
2	(Potorcon	A: Path analysis model	Posulte suggest that near support is a potentially important adjunct to stated
	(Peterson, et al., 2011)	D: Descriptive S: 81 PLWHA who have experience with peer social support in	Results suggest that peer support is a potentially important adjunct to clinical care for improving coping skills, thereby improving the psychosocial functioning of peo
	or al., 2011)	a Midwestern City	living with HIV
		V: Peer support	
		I: Demographic Questionnaire	

No	Authors	Methods	Results
24	(Van Tam	D: Quantitative descriptive	Quality of life improved significantly in the intervention group than in the control
	et al., 2012)	S: 119 people living with HIV	group. Among participants in stages 1 and 2 there was no significant effect of peer
		V: Independent: Peer support and dependent: improving	support, whereas having children was associated with improved quality of life.
		quality of life	Hepatitis virus was associated with decreased quality of life in both groups. Lower
		I: Vietnamese version of the WHOQOL AIDS Internal and	perceived stigma was significantly but weakly correlated with improved quality of life,
		AIDS stigma scale instrument	however, there was no significant relationship with peer support
		A: Statistical analysis, t-test, linear regression	
25	(Chime et al.,	D: Descriptive cross-sectional qualitative and quantitative	On the overall self-assessment, 81.7% of respondents in the peer support group
	2018)	S: 840 people living with HIV/AIDS who visited an antiretroviral clinic in Enugu, Nigeria	and 71% of those in the non-peer support group had good self-ratings in terms of adherence
		V: Independent: Peer support on the dependent: Medication adherence	
		I: Questionnaire and group discussion	
		<ul> <li>A: Chi-square test, student t-test, multiple linear regression analysis, qualitative manual analysis</li> </ul>	

# Results

#### Literature tracing and study design

Based on the results from online library databases, total of 2378 journals were collected using predetermined keywords. After the duplication check, a total of 1276 remained. The researcher then screened these left journals by title and resulted in 684, Continuing the filtration based on abstract, 32 sources were remained and assessed based on full text/eligibility criteria, 23 journals were selected for the study purpose (n = 23).

#### Characteristic population

The total number of respondents in the overall review of the studied articles was 3295 participants, with the total population involved between 125 and 1000 participants. The minimum population is 125 participants, and the highest is 1000 participants. Participants involved were restricted based on *inclusion* and *exclusion* criteria. All actions were carried out in adults >18–65 years. Each population was then grouped into two to be given peer group support treatment in the intervention group and other treatments.

#### Characteristic intervention

The characteristic of this intervention was given peer group support to increase QoL in HIV/AIDS patients. The average intervention was carried out for 1–6 months, with regular meetings 1–2 times/week for the initial 1 month and followed up for 3–6 months. *Peer group support* intervention delivered weekly as the intervention group and evaluated at the next meeting by intensive interviews or using standard instruments. From the analyzed articles, on average, the interventions are the same.

## Discussion

Peer group support interventions shows that there is an increase in QoL. Handling and the role of

peer group support is very important to strengthen fellow sufferers and assist health workers in providing integrated care between the hospital and the community. Peer group support is a support system for a group of people suffering from the same disease, a practical place for a group of people to provide and receive emotional support and exchange information. The contribution of Peer group support in improving chronic disease conditions has been widely proven. Previous research has suggested that peer group support reduces psychological distress, especially signs of depression, anxiety and anger in children with AIDS. The QoL for PLHIV who received ART who attended peer group support improved significantly. The support group contribution also affected the CD4 levels of PLHIV who took ARVs.

The experience of an illness will generate various feelings and reactions to stress, frustration, anxiety, anger, denial, shame, grief, and uncertainty leading to adaptation to illness [12], [13]. There is no quick and right way to go through the grieving process. The role of the peer group is to get a picture of grieving behavior, recognize the influence of grieving on behavior and provide support in the form of empathy [14], [15] so that the peer group has a good benefit in controlling the loss stage well.

Peer group support can also have an impact on the motivation of PLWHA to do physical activity and exercise. Physical exercise and CD4 T-cell count are also very important for PLWHA if they want to improve their QoL. Physical exercise or regular exercise has been shown to have a strength effect on the body, including increasing immunity. The more people living with HIV/AIDS are active in physical activity, the better their QoL. Likewise, the number of CD4 T cells is an indicator of the strength of the body's immune system. Good body defenses support general health conditions and in turn improve QoL [16].

People living with HIV/AIDS (PLWHA) also often experience psychological problems due to the stigma imposed by the community. If people with HIV/AIDS get or receive a stigma from those around them, then that bad label is inserted or internalized in thoughts and feelings, it can cause heavy emotional and physical burdens. The provision of stigma that is considered commonplace in society makes HIV/AIDS patients more marginalized and has a broad impact on all aspects of their life [17]. Not only that, even this stigma has proven to be the initiator of the initial idea of suicide [18]. Suicidal behavior in HIV/AIDS patients is frequent and is significantly associated with mental disorders and lower QoL [19]. This condition can be prevented by providing good peer group support intervention, it is proven that peer group support intervention for 3 months can reduce the psychological pressure felt by PLWHA, because PLWHA has the spirit of life in living their lives.

The role of good peer support groups for PLWHA can improve the QoL of PLWHA, for example with the role of good peer support groups in monitoring their treatment, especially ARVs and can be a place for counseling and counseling about good nutrition for PLWHA so that nutrition can be fulfilled optimally for PLWHA. Thus, PLWHA are able to work without worrying about their physical condition and PLWHA are more productive. In addition, with the role of a good peer support group. PLWHA are given the opportunity to meet and make friends with other people so that PLWHA feel they have friends to share with, think about the same fate so that mutual support will emerge between PLWHA, so that PLWHA will not feel alone so that it continues will think about the disease then PLWHA will fall into a stressful condition that will worsen their health condition [20].

Support from the social environment for people living with HIV who are stigmatized because of their illness can be minimized. Stress can change from time to time, coping can occur at different times. The three main categories of coping outcomes are emotional well-being, functional status (health status and disease progression) and health behavior [21].

Humans as social beings always interact with their social environment, which always influences the development of individual personalities as social beings. A person's health is greatly influenced by the way he thinks about the lifestyle he lives. The health condition of people living with HIV is very dependent on themselves and is also influenced by the people around their lives, one of which is friends. The interaction between PLWHA and the social environment can have a major impact on the health condition of PLWHA, be it physical, mental, social, or spiritual health. With closeness and good relationships with each other with people around people living with HIV, it can help to see a more meaningful and valuable life for themselves and others [22], [23].

### Conclusion

Based on the summary of the study, it shows that peer group support is very useful in improving the QoL of HIV/AIDS patients, because it can monitor each other's health conditions. The entire article discusses the benefits of peer group support in improving the QoL of HIV/AIDS patients, including: (1) Being a storyteller; (2) provide mutual motivation; (3) success story; (4) increase resilience; (5) preventing negative stigma; and (6) improve patient feelings so that immunity continues to improve.

### References

 Trickey A, May MT, Vehreschild J, Obel N, Gill MJ, Crane H, et al. Cause-specific mortality in HIV-positive patients who survived ten years after starting antiretroviral therapy. PLoS One. 2016;11(8):e0160460. http://doi.org/10.1371/journal. pone.0160460

PMid:27525413

- Kim SH, Gerver SM, Fidler S, Ward H. Adherence to antiretroviral therapy in adolescents living with HIV: Systematic review and meta-analysis. AIDS. 2014;28(13):1945-56. http:// doi.org/10.1097/QAD.00000000000316
   PMid:24845154
- Kharsany AB, Karim QA. HIV Infection and AIDS in Sub-Saharan Africa: Current status, challenges and opportunities. OpenAIDS J. 2016;10:34-48. https://doi.org/10.2174/1874613601610010034 PMid:27347270
- Morar NS, Naidoo S, GoolamA, Ramjee G. Research participants' skills development as HIV prevention peer educators in their communities. J Health Psychol. 2018;23(10):1343-9. https://doi. org/10.1177/1359105316655470
   PMid:27371447
- Miners A, Phillips A, Kreif N, Rodger A, Speakman A, Fisher M, et al. Health-related quality-of-life of people with HIV in the era of combination antiretroviral treatment: Across-sectional comparison with the general population. Lancet HIV. 2014;1(1):e32-40. http:// doi.org/10.1016/S2352-3018(14)70018-9 PMid:26423814
- Infodatin Situasi Umum HIV/AIDS dan Tes HIV, Pusdatin, Kementerian Kesehatan, 2020. Available form: https://www. kemkes.go.id/downloads/resources/download/pusdatin/ infodatin/infodatin%202020%20hiv.pdf [Last accessed on 2022 Jan 12].
- van Tam V, Pharris A, Thorson A, Alfven T, Larsson M. It is not that I forget, it's just that I don't want other people to know: Barriers to and strategies for adherence to antiretroviral therapy among HIV patients in Northern Vietnam. AIDS Care. 2011;23(2):139-45. http:// doi.org/10.1080/09540121.2010.507741 PMid:21259125
- Abdissa HG, Lemu YK, Nigussie DT. HIV preventive behavior and associated factors among mining workers in Sali traditional gold mining site Bench Maji zone, Southwest Ethiopia: A cross sectional study. BMC Public Health. 2014;14:1003. http://doi. org/10.1186/1471-2458-14-1003 PMid:25256947
- Rotheram-Borus MJ, Richter LM, van Heerden A, van Rooyen H, Tomlinson M, Harwood JM, *et al.* A cluster randomized controlled trial evaluating the efficacy of peer mentors to support South African women living with HIV and their infants. PLoS One. 2014;9(1):e84867. http://doi.org/10.1371/journal.pone.0084867 PMid:24465444
- 10. Safren SA, Bedoya CA, O'Cleirigh C, Biello KB, Pinkston MM,

Stein MD, et al. Cognitive behavioural therapy for adherence and depression in patients with HIV: A three-arm randomised controlled trial. Lancet HIV. 2016;3(11):e529-38. http://doi. org/10.1016/S2352-3018(16)30053-4

- PMid:27658881
- 11. Stylianou N, Razis G, Goulis DG, Vlahavas I. EBM+: Advancing evidence-based medicine via two level automatic identification of populations, interventions, outcomes in medical literature. Artif Intell Med. 2020;108:101949. http://doi.org/10.1016/j. artmed.2020.101949

PMid:32972669

- 12. Varni SE, Miller CT, McCuin T, Solomon SE. Disengagement and engagement coping with HIV/AIDS stigma and psychological well-being of people with HIV/AIDS. J Soc Clin Psychol. 2012;31(2):123-50. https://doi.org/10.1521/jscp.2012.31.2.123 PMid:22611302
- 13. van Velthoven MH, Brusamento S, Majeed A, Car J. Scope and effectiveness of mobile phone messaging for HIV/AIDS care: A systematic review. Psychol Health Med. 2013;18(2):182-202. http://doi.org/10.1080/13548506.2012.701310 PMid:22788357
- 14. Betancourt TS, Ng LC, Kirk CM, Brennan RT, Beardslee WR, Stulac S, et al. Family-based promotion of mental health in children affected by HIV: A pilot randomized controlled trial. J Child Psychol Psychiatry. 2017;58(8):922-30. http://doi. org/10.1111/jcpp.12729

PMid:28504307

- 15. He L, Zhao J, Wang MH, Siu KK, Gan YX, Chen L, et al. Interleukin-27 is differentially associated with HIV viral load and CD4+ T cell counts in therapy-naïve HIV-mono-infected and HIV/HCV-co-infected Chinese. PLoS One. 2014;9(5):e96792. http://doi.org/10.1371/journal.pone.0096792 PMid:24816922
- 16. Medeiros RC, Medeiros JA, Silva TA, Andrade RD, Medeiros DC, Araújo JS, et al. Quality of life, socioeconomic and clinical factors, and physical exercise in persons living with HIV/ AIDS. Rev Saude Publica. 2017;51:66. https://doi.org/10.1590/ S1518-8787.2017051006266

PMid:28746573

- Zhang C, Li X, Liu Y, Qiao S, Zhang L, Zhou Y, et al. Stigma 17. against people living with HIV/AIDS in China: Does the route of infection matter? PLoS One. 2016;11(3):e0151078. https://doi. org/10.1371/journal.pone.0151078 PMid:26981636
- 18. Zarei N, Joulaei H. The impact of perceived stigma, quality of life, and spiritual beliefs on suicidal ideations among HIVpositive patients. AIDS Res Treat. 2018;2018:6120127. http:// doi.org/10.1155/2018/6120127 PMid:30356375
- 19. Oladeji BD, Taiwo B, Mosuro O, Fayemiwo SA, Abiona T, Fought AJ, et al. Suicidal behavior and associations with quality of life among HIV-infected patients in Ibadan, Nigeria.J Int Assoc Provid AIDS Care. 2017;16(4):376-82. http://doi. org/10.1177/2325957415617829 PMid:26586788
- Mufarika M. The relationship between the role of peer support 20 groups and the quality of life of people living with HIV/AIDS (PLWHA) at the VCT polyclinic of Syarifah Ambami Rato Ebu Hospital Bangkalan. J Keperawatan Malang. 2019;3(2):67-74. http://doi.org/10.36916/jkm.v3i2.68
- 21. Ana J, Gobel FA, Arman. Factors influencing adherence to antiretroviral therapy in people with HIV at the Makassar City Peer Support Group Care Foundation. Wind Public Health J. 2020;1(3):241-9.
- 22. Towe SL, Patel P, Meade CS. The acceptability and potential utility of cognitive training to improve working memory in persons living with HIV: A preliminary randomized trial. J Assoc Nurses AIDS Care. 2017;28(4):633-43. http://doi.org/10.1016/j. jana.2017.03.007 PMid:28442186

23. Moitra E, LaPlante A, Armstrong ML, Chan PA, Stein MD. Pilot randomized controlled trial of acceptance-based behavior therapy to promote HIV acceptance, HIV disclosure, and retention in medical care. AIDS Behav. 2017;21(9):2641-9. http://doi.org/10.1007/s10461-017-1780-z PMid:28451891