



Adherence to Taking ARV Drugs in Adolescents with HIV/AIDS

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Abstract

Adherence on taking ARV drugs in adolescents is the main issue in the success of ARV treatment. ARV treatment is related to improving the quality of life in adolescents infected with HIV. Aim: To summarize the factors improving adherence on HIV medication using ARV drugs in adolescents. Method: This article is a review of journal articles related to adherence on taking ARV drugs. Article reviewed were the articles on the past five years, 2015-2019, with a search strategy involving the articles from the following database including Science Direct, Scopus and ProQuest databases. Results: 12 articles related to adherence on ARV medication in adolescents. Conclusion: adherence is a significant aspect that must be maintained in order to overcome the impact of non-compliance on ARV medication as it can affect the quality of life of adolescents with HIV / AIDS.

Introduction

Human Immuno Deficiency Virus/ Acquired Immuno Deficiency Syndrome (HIV/AIDS) is a disease that attacks the human immune system and is transmitted through vertical and horizontal transmission (James, Nelson, & Ashwill, 2013). Based on data from the Joint United Nations Program on HIV and AIDS (UNAIDS) in 2018, the world population affected by HIV in 2017 amounted to 36.9 million people. 1.8 million of them are new infections (UNAIDS, UNAIDS Data 2018, 2018). Data from the Ministry of Health (2019), shows the cumulative number of HIV from 1987 to June 2019 was 349,882 and who had AIDS were 117,064 people. There are 10,730 children aged 15-19 years who are infected with HIV and 3799 people who have AIDS. The highest risk factors for HIV/AIDS transmission were heterosexual (70.2%), use of unsterile injection equipment (8.2%), homosexuality (7%) and perinatal transmission (2.9%) (Kementrian Kesehatan RI, 2019).

Living with HIV requires lifelong treatment with ART and is associated with frequent opportunistic infections, especially when optimal adherence to ART is not achieved (Kimera, et al., 2020). One of the measures to reduce the symptoms of infection that appears is to give ARV drugs (Kementrian Kesehatan RI, 2014) with the aim of reducing morbidity and mortality (Hornschuh, Dietrich, Tshabalala, & Laher, 2017). Indonesia has a target of ending the AIDS epidemic as a public health threat by 2030 (UNAIDS, 2018), with Indonesia's commitment to take a fast track approach 90-90-90 (Kementrian Kesehatan RI, 2019). In supporting the fast track approach, health behaviors are needed in undergoing ARV therapy, including adherence to treatment (Holtzman, Brady, & Yehia, 2015).

Adolescents are one of the age groups most affected by HIV. At this age there are changes both physically and psychologically so it is necessary to provide knowledge about the reproductive system, problems that occur

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in reproduction, the reproductive process and diseases that are transmitted through the reproductive tract such as HIV. (Shaluhyah, et al., 2017). There is a fact that adolescents born to be infected with HIV from their mothers, for one reason there are still health workers who do not provide good support to mothers to prevent HIV transmission from mother to baby, even though the support of health workers is very influential on maternal adherence to HIV treatment to prevent mother-to-child transmission of HIV (Isni, 2016). This must be a concern for health workers so that the circle of transmission can be broken.

Adherence to HIV treatment is a challenge, especially for adolescents, because the course of illness in adolescents occurs during the perinatal period and some adolescents do not know their HIV status (Hornschuh, et al., 2017). According to research (Denison, et al., 2015) stated that if until adolescence a child does not know his HIV status, it can cause non-compliance in taking ARVs because the teenager does not know the side effects of the non-compliance. According to the World Health Organization (WHO), an adolescent is someone aged 10-19 years old (Kementrian Kesehatan RI, 2018). Adolescents with HIV who are undergoing ARV therapy must be given good knowledge about HIV and ARVs in order to be obedient in undergoing therapy (Hornschuh, et al., 2017). The patient is said to be compliant if the ARV taken reaches 95% of the total drug given every month and can maintain its achievement (Kim, et al., 2014). Non-adherence to antiretroviral therapy (ART) continues to be the leading cause of treatment failure for people living with HIV (PLWHA) (Heestermans, et al., 2016), and increases the risk of drug resistance and spreading the virus to others (Ssewamala, et al., 2019), so it is very

important to know the factors that influence therapy adherence. Adherence to ARV therapy in adolescents is influenced by many things that support and hinder in achieving the level of adherence, so the authors are interested in conducting a literature study related to adherence to ARV treatment in adolescents.

Method

The search for articles was carried out on October 12 – October 20, 2019 by searching electronic data. Searches were made on the Science Direct, Scopus and ProQuest databases for articles in English using the keywords HIV/AIDS; Adolescent*, Antiretroviral. Articles with research on adolescents with HIV/AIDS undergoing ARV therapy, but only discussing ARV adherence will be studied. The deadline for publishing articles is determined for the last 5 years, namely 2015-2019. The inclusion criteria in this literature search were 1). Articles related to adolescents with HIV/AIDS undergoing ARV therapy, 2). Teenagers aged 9-19 years and their caregivers 3). Qualitative, quantitative or mixed method research articles 4). Fulltext and English articles published in 2015-2019. While the exclusion criteria in the literature search are 1). Adolescents with HIV who have other comorbidities are such as type of literature review articles or systematic reviews.

Based on the search results by entering keywords obtained from Science Direct as many as 1160 articles, Scopus as many as 9328 and Proquest 27,924 for a total of 38,322 articles. After being screened based on inclusion and exclusion criteria, 848 articles were obtained and after careful review, there were 12 articles that matched the researcher's goals. The literature search strategy is shown in the form of a chart in Figure 1.

Figure 1. Flowchart of the review of the article under study

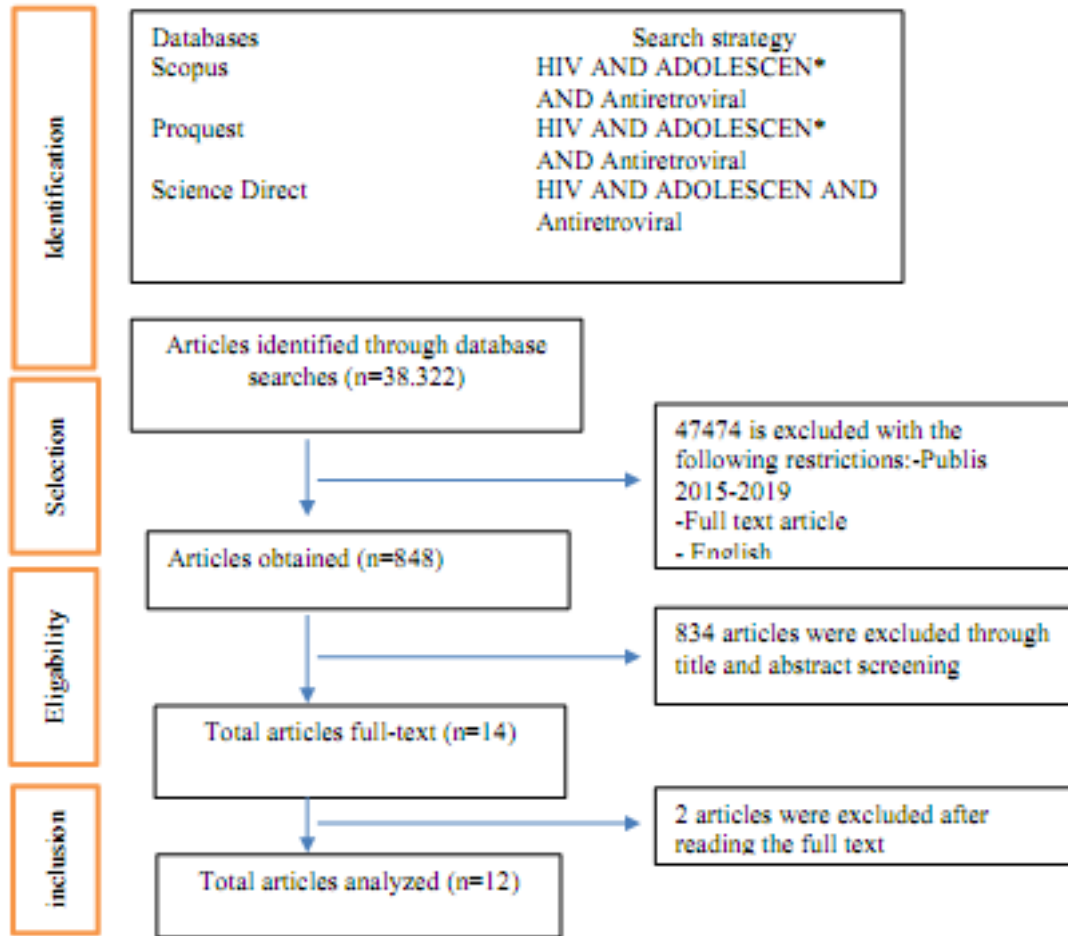


Table 1. Article Review Table

Author	Research purposes	Desain	Sample	Procedure	Result
Yi <i>et al.</i> , (2018) Kamboja	Describing the characteristics and levels of transition readiness and looking at them by gender differences in the adolescent population	Quantitative: cross-sectional	N: 328 teenagers	Interviews using questionnaires made by researchers and medical records	Most teenagers know their HIV status and ARV treatment but never reveal their HIV status to anyone
Xu <i>et al.</i> , (2017) Thailand	Exploring comprehensive factors influencing ARV adherence	Mix Metode Quantitative: cross-sectional Qualitative: Deep interview (IDI) in 12 participants (6 adolescents 6 nurses	N: 568 teenage couples and caregivers	Data collection with questionnaires, guided surveys with face-to-face and in-depth interviews	48.4% of adolescents proved to be non-adherent to ARV The themes obtained are knowledge and perception, adolescent experiences, interpersonal relationships, daily environment and skills to fulfill one's own needs
Montalto <i>et al.</i> , (2017) Kenya	Knowing the relationship of disclosure with treatment outcomes	Quantitative: retrospective cohort study	N:96 teenagers	Medical record data, standard Morisky Drug Compliance Scale questionnaire and objective assessment through pill counts and pharmacy refill records.	There was an increase in the percentage of ARV adherence and CD4 cell count in adolescents after disclosure status.
Denison <i>et al.</i> , (2015) Afrika	Exploring ARV treatment adherence from the perspective of the experiences of adolescents and their caregivers	Qualitative:In-depth Interview (IDI)	N : 32 teens, 23 caregivers	Deep interview (IDI).	The reasons adolescents and caregivers who do not comply with taking ARV do not comply are fear of unwanted disclosure, spiritual beliefs, adolescents do not know their HIV status, side effects of drugs. ARV adherence advocates: Family support, desire to live longer, healthier life, peer support and transition in HIV self-management.

Cluver <i>et al.</i> , (2015) South Africa	Knowing the experience of adolescents on the relevance of compliance with disclosure status	<i>Mix Methode</i> Quantitative: Cross-sectional Qualitative: <i>Grounded theory</i> : FGD	Kuantitatif: N 684 teenagers N: 64 (adolescents, caregivers, health workers)	Standard questionnaires and clinical notes from focused medical records Focus Group Discussion (FGD)	There is a relationship between knowing HIV status, travel time to the clinic and adherence The results of the FGD concluded that Disclosure strongly influences adherence in perinatally infected HIV-infected adolescents.
Kariuki <i>et al.</i> , al (2016). Kenya	Determining the determinants of ARV adherence in HIV-infected adolescents	Quantitative: Descriptive Survey Qualitative: In-depth interview (IDI)	Quantitative: N:187 teenagers Qualitative: N: 25 people (caregiver officer)	Interview using a questionnaire made by the researcher	Quantitative results: There is a relationship between adherence counseling before starting medication with ARV treatment adherence The themes obtained are adherence to drugs, the main challenges faced by adolescents in adherence, health knowledge.
Ashaba <i>et al.</i> , (2019) Uganda	understand the difficulties faced by youth with HIV and their impact on mental health	Qualitative: FGD and Indept interview	N = IDI: 10 youth, 30 Caregivers FGD (15 remaja, 25 pengasuh)	Focus Group Discussion (FGD) and in-depth interviews	There were 12 themes, namely: assumption of premature death, assault on perceptions, HIV stigma, internalized stigma, loss of parents due to HIV and AIDS, Poverty, counseling/counseling, family support, effective disclosure of HIV status, religious beliefs, symptoms of depression and non-compliance against ARV
Okawa <i>et al.</i> , (2018) Zambia	Exploring symptoms of depression and adherence to ART	<i>Mix Methode</i> Qualitative: Deep interview Quantitative: Survey	Qualitative N: 10 teenagers Quantitative: N: 190 teenagers	Data collection: In-depth interviews, CES-D questionnaire survey, Self-reported for three days.	The qualitative data identified challenges to ART adherence: drug management, physical reactions to drugs, and psychosocial stress. Factors associated with non-adherence to ARV's: loss of mother and lack of basic knowledge about HIV

Firdu <i>et al.</i> , (2017) Ethiopia	Knowing the predictors of ARV adherence among adolescents	Quantitative: a cross-sectional	N: 273 teenagers	Interviews using a structured questionnaire adopted the AIDS Clinical Trials Group (ACTG)	Most (79.1%) adolescents adhere to ARV treatment. There is a significant relationship between optimal ARV adherence with Cotrimoxazole Prophylactic Therapy (CPT) and adolescents with widowed parents. The themes obtained are beliefs that make people survive, the character of internalized survival skills, fun social behavior
Woollett, <i>et al.</i> (2016) South Africa	Identify elements of resilience in a perinatally infected group of HIV-positive adolescents attending an HIV clinic	Qualitative In-depth interviews	N: 25 teenagers	In-depth interviews using a semi-structured interview guide	The results show that: adequate economy and distance to health clinics affect adolescent adherence to ARV regimens.
Bermudez <i>et al.</i> , (2016) Uganda	Examining whether the outcomes of ARV adherence among HIV adolescents in Uganda differ in relation to socioeconomic	Quantitative: <i>longitudinal randomized control trial</i>	N = 702 teenagers	Questionnaire with question guidelines developed by researchers.	
DeSilva <i>et al.</i> , (2018) China	Explore issues related to medication adherence, understanding of HIV, and disclosure of HIV status in adolescents	Qualitative study: Phenomenology In-depth interviews (IDI) and Focus Group Discussions (FGD)	N: 19 teen couple and caregiver	Interviews used a semi-structured interview guide. IDI with caregiver FGD with doctors and caregivers	The IDI and FGD analysis revealed themes including: disclosure as a process, fear of stigma, concerns about children's reactions on the part of caregivers and doctors, and inadequate readiness and skills of caregivers to make full disclosures. The importance of status disclosure (disclosure) in ARV treatment adherence
Galea <i>et al.</i> , (2018) Peru	Investigate barriers and facilitators to initiating adherence among Peruvian youth living with HIV.	Qualitative: Phenomenology Deep interview	N: 15 teenagers	In-depth individual interviews using a semi-structured interview guide	Emerging themes: Individual level barriers, Family/caregiver level barriers, Individual level facilitator Family / Caregiver Level Facilitator Other compliance facilitators such as Hospital staff support.

Results and Discussion

This literature study discusses 12 articles that have been selected to explore information about adolescent adherence to ARVs. Adolescence is a transitional period marked by the development of puberty, the formation of sexual identity and social and cognitive maturation (Mark, et al., 2017). Five studies describe that most of the average age of adolescents with HIV is in the age range of 10-14.4 years (Bermudez, et al., 2016; DeSilva, et al., 2018; Hudelson & Cluver, Lucie, 2015; Montalto, et al., 2017; Xu, et al., 2017). Five studies show that the majority of adolescent girls who are infected with HIV (Bermudez, et al., 2016; Firdu, Enquesselassie, & Jerene, 2017; Montalto, et al., 2017; Okawa, et al., 2018; Xu, Munir, Kanabkaew, & Le Coeur, 2017). HIV/AIDS in adolescents is mostly transmitted from the mother (Cluver, et al., 2015; Yi, et al., 2018). The average age of starting ARVs is in the 8-9 year age range (Firdu, Enquesselassie, & Jerene, 2017; Xu, et al., 2017). Three studies stated that adolescents had received ARVs for an average of 6-8.4 years (Firdu, Enquesselassie, & Jerene, 2017; Okawa, et al., 2018; Yi, et al., 2018). Three studies suggest that most adolescents are on first-line ARV regimens (Firdu, Enquesselassie, & Jerene, 2017; Xu, Munir, Kanabkaew, & Le Coeur, 2017; Yi, et al., 2018). According to a study in Cambodia 76.8% of adolescents experienced a decrease in viral load after antiretroviral therapy (Yi, et al., 2018). Adolescents who adhere to ARV treatment in Thailand are 51.6% (Xu, Munir, Kanabkaew, & Le Coeur, 2017). While research in Ethiopia, adolescent compliance is 79.1% (Firdu, Enquesselassie, & Jerene, 2017).

The problem with adolescents with HIV is knowledge about their own HIV status (Beima-Sofie, et al., 2017). Most adolescents (50.7%) never disclosed their HIV status to anyone (Yi, et al., 2018). The majority of caregivers 68.42% said disclosure requires attention to the stage of development and maturity. The unpreparedness of caregivers, lack of knowledge and skills to disclose the status of their children are obstacles in. Lack of disclosure, delay in disclosing treatment is a challenge for adolescents with HIV (Kariuki, Some, & Kimanthi, 2016). Adolescents have felt depressed due to the stigma of HIV on themselves and their families

(Okawa, et al., 2018). Stigma can occur in the home environment (Ashaba, et al., 2019), school environment and a place to play with peers (Kariuki, Some, & Kimanthi, 2016).

Stigmatization by caregivers and other family members occurs as in the separation of household appliances and similar items (Ramaiya, et al., 2016). In addition, children are treated unfairly and harshly, often being blamed if household chores are not done as expected. This treatment causes adolescents to feel unfairly loved by their parents/caregivers (Ashaba, et al., 2019). The HIV stigma attached to him makes a lot of worries (Xu, et al., 2017). Abusive treatment from peers and adults often causes negative emotions, including feelings of shame and emotional pain. To anticipate the social exclusion and embarrassment associated with their HIV/AIDS status, adolescents often isolate themselves so as not to be hurt by others (Ashaba, et al., 2019). Negative perception about HIV/AIDS is a chronic disease caused by unsafe sexual activity (Kariuki, Some, & Kimanthi, 2016) and people with HIV/AIDS will experience premature death and poor health (Ashaba, et al., 2019). This is in line with research which states that feelings of anxiety occur in people with HIV because there is a perception that people with HIV will die sooner. This is a source of stress and depression (Sosodoro, Ahmad, Prabandari, & Hakimi, 2017).

Discrimination causes adolescents with HIV/AIDS to believe that they are inferior to their peers and are shunned by their peers at school and the act of social exclusion causes feelings of shame and anger and even thoughts of suicide (Ashaba, et al., 2019). Research in Zambia states that there is a relationship between high scores of depressive symptoms and unsatisfactory relationships with families and health workers and adolescents of whom experience the stigma (Okawa, et al., 2018). Poverty is a challenge for adolescents with HIV where parents with HIV cannot work because of HIV / AIDS so that adolescents feel they are in poor conditions with basic needs that are not met, do not receive education and children are encouraged to work informally to fulfill their needs (Ashaba, et al., 2019). The financial pressure that occurs is a significant burden

in the lives of children with HIV. Insufficient household funds and long-term financial uncertainty negatively impact the ability to control and take ART, leading to barriers to medication adherence (Ramaiya, et al., 2016).

Good knowledge about HIV / AIDS and ARV treatment, including the consequences and resistance due to suboptimal adherence can encourage adolescents to adhere to ARV treatment (Xu, et al., 2017). Adolescent knowledge about HIV status can improve adherence (Cluver, et al., 2015). Adolescents must have the ability to disclose their HIV status to others and face discrimination and seek help in a timely manner (Xu, et al., 2017). Adolescents feel they have values and self-worth when they become leaders in peer support groups (Xu, et al., 2017). Transition is from childhood to adolescence (Kariuki, Some, & Kimanthi, 2016) and participation in worship helps youth with HIV improve their ability to cope with the challenges of living with HIV (Ashaba, et al., 2019). In addition, beliefs that make people survive, internalized character of survival abilities and pleasant social behavior support compliance (Woollett, et al., 2016). Religion and beliefs, whether places of worship, religious leaders or through prayer practices are another identified type of emotional support. (Lypen, et al., 2015). Based on research results (Vyas, et al., (2014), patients who maintain personal autonomy but always maintain their relationship with God in the sense of surrendering to God to overcome their illness will be more compliant with their treatment regimen

The process of disclosure to adolescents living with HIV is not fully understood (DeSilva, et al., 2018). Parents generally do not know how or when to disclose their status to their children (Nalugya, et al., 2018). Uncoordinated disclosure of HIV status during childhood is a major source of confusion and negative feelings about treatment (Xu, Met al., 2017). A small number of caregivers have informed their child's HIV status. The rest of the caregivers plan to disclose when the children are 14 years old or older. Caregivers are worried that if their child's HIV status is revealed, the child will be angry and hate himself and worry about the negative stigma that will be received

by the child and his family. (DeSilva, et al., 2018). Disclosure is very important to facilitate discussion between parents, youth and health workers about the disease and its treatment as well as facilitate access to peer support groups (Cluver, et al., 2015). The benefits of disclosure are that it makes it easier to find support, relieve the emotional burden of secrets, and educate their children about the dangers of HIV (Nalugya, et al., 2018). Several caregivers shared experiences with adolescents who were not told they were born with HIV, complicating efforts to emphasize the importance of adherence to ART (Maccarthy, et al., 2018), so that there is a significant relationship between HIV disclosure and adherence to ARVs and there is an increase in ARV compliance after disclosur. (Montalto, et al., 2017).

Basically, adherence to HIV treatment is almost the same as adherence to pulmonary TB treatment, namely, taking medication on time and not being interrupted. Drug taking supervisors to support medication adherence in patients with pulmonary TB is an important component (Fadila & Riono, Pandu, 2014), as well as in supporting ARV treatment adherence in HIV patients. Family support greatly influences ARV adherence in adolescents (Kariuki, Some, & Kimanthi, 2016) including emotional support and facility support related to taking medication. Emotional support and role models from caregivers can increase adolescents' expectations about the future and reduce self-hatred which ultimately supports medication adherence (Ashaba, et al., 2019). Adolescents who have parents or caregivers who are more economically secure have a higher chance of compliance (Bermudez, et al., 2016).

Providing continuous information in addition to strong support from health workers and parents or guardians can increase adherence among adolescents and become an intervention to reduce patient forgetting to take medication (Ankrah, et al., 2016). Patient satisfaction with health services and adherence to ARVs can be influenced by health facility factors and service provider factors (Leon, Koosed, Philibert, Raposo, & Benzaken, 2019). One of the health services provided is ARV counseling, before starting drugs and after starting ARV drugs

affects adherence to ARV (Kariuki, Some, & Kimanthi, 2016). Routine counseling and the duration of routine counseling are based on individual needs and are carried out face-to-face either individually or in groups (Mark, et al., 2017). Counseling services for those who experience stigma are very useful for adolescents in addition to receiving counseling services in the context of HIV care (Ashaba, et al., 2019). In addition, the role of health workers is very influential because officers often interact so that they have a better understanding of the physical and psychological conditions of patients with HIV (Isni, 2016). The peer group is the main source of psychosocial support. Peer group activities are often described by teenagers as fun, relaxing, and open-minded (Xu, et al., 2017), be an opportunity to make friends, encourage colleagues and help each other to remind each other to take medication and share experiences of being HIV sufferers and undergoing ARV therapy (Kariuki, Some, & Kimanthi, 2016). Counseling is needed to promote good adherence and to reduce the risk of HIV transmission (Ammon, Mason, S., & Corkery, J. M., 2018).

Side effects after taking ARVs such as feeling drunk, drowsy, insomnia, nausea, vomiting and stomach burning make adolescents lazy to take ARVs and lack of understanding of the indications for ARV treatment also contribute to barriers to adherence, such as missed doses of ARVs combined into a single dose (Galea, et al., 2018). In addition, adolescents with HIV/AIDS experience instability in the family, severe comorbidities, death of biological parents, changes in primary caregivers, substance abuse and domestic violence, family financial difficulties (Xu, et al., 2017) and conditions of emotional instability also occur in adolescents. This complicates parents' ability to ensure their child's medication adherence (Galea, et al., 2018). Spiritual beliefs such as belief in healing after being prayed for by religious leaders cause caregivers or parents to stop ARV treatment (Kariuki, Some, & Kimanthi, 2016), and extra-curricular activities or busy school schedules are the most common reasons teenagers and caregivers give for skipping ARV therapy. (Xu, et al., 2017). The results of the study in

Cambodia found that barriers to achieving ARV compliance include finding it difficult to remember taking medication (23.8%), adolescents will stop taking medication when they feel their health condition is getting worse (11.0%) (Chhim, et al., 2018).

Adolescents who have lost one or both parents cause them to lose someone who fulfills their needs (Ashaba, et al., 2019; Nalugya, Russell, Steven, Zalwango, Flavia, & Seeley, Janet, 2018). Study (Okawa, et al., 2018), states that adherence to ARVs is closely related to the loss of a mother; the absence of parents causes adolescents to change caregivers. Poor relationship or communication with caregivers can potentially lead to suboptimal compliance (Galea, et al., 2018), and the attitude of caregivers such as reminding when to take ARV drugs is done excessively (Xu, et al., 2017). Based on research (Kimera, et al., 2020) adolescents with one parent and adolescents living with caregivers also reported neglect, mistreatment, and abuse. Many situations in which they are treated as inferior to other children in the home are usually carried out by stepmothers who belittle and abuse them.

If the health services provided are slow, such as the old public insurance management (Galea, et al., 2018), longer travel time to clinic (Cluver, et al., 2015), difficulties in accessing medicines and health care including supply of medicines, unfriendly health care providers and lack of information about diseases can cause delays in ARV adherence (Kariuki, Some, & Kimanthi, 2016). In addition, individuals who missed doses of medication cited problems finding transportation money to get to health services as the main reason for not being able to maintain the regimen. They can't afford to travel to the clinic before their medicine supplies run out (Ssewamala, et al., 2019).

Adherence to ARV treatment is achieved if the ARV taken reaches 95% of the total drug given every month and can maintain its achievement (Elyanu, et al., 2015; Kim, Gerver, Fidler, & Ward, 2014). The two most common approaches to ensuring adherence in clinical settings are patient self-report and farm self-report and pharmacy-based metrics (Kabore, Muntner, Paul, Chamot, Eric, Zinski, Anne, Burkholder, Greer, & Mugavero, Michael J.,

2015). From the article, it was written that the average adherence of adolescents with HIV who received ARV therapy had different percentages such as in Thailand (51.6%) and in Ethiopia (79.1%). This figure is still far below the UNAIDS target of 90% compliance. (UNAIDS, 2017).

Seven articles that discuss the challenges that often occur in adolescents with HIV are disclosure status, where parents or caregivers feel this is something that is difficult to do because they are worried about the possible consequences. What is often feared due to the disclosure of HIV status in adolescents is that adolescents will be angry with caregivers and negative stigma from society towards adolescents and their families. Caregivers who were not biological parents experienced less difficulty in disclosing their HIV status than their biological parents. This is because biological parents are afraid of being blamed for transmitting HIV to their children (Medin, et al., 2015). In fact, disclosure has an important aspect of self-management, facilitating emotional, psychosocial and economic support from children, other family members and friends (Nalugya, et al., 2018).

Four articles mention that stigma and discrimination in adolescents with HIV are challenges in living their lives. Adolescents are a group of children who are vulnerable to stigma and discrimination. Adolescents living with HIV are less likely to disclose their HIV status to others outside the home, for fear of being stigmatized (Damulira, et al., 2019). Stigma can come from the closest family such as friends and neighbors. Stigma from the family includes discrimination and neglect (Sugiharti, et al., 2019). Many individuals who experience stigma tend to avoid contact with other people resulting in an inability to form friendships and socialize with the surrounding community (Anima-Korang, Gere, & Salimi, 2018). Many youths state that it takes a great deal of courage to take medicine every day at school for fear of being identified as HIV positive and will be discriminated against (Kimera, et al., 2020). Stigma and discrimination can also lead to missed opportunities to change victims' behavior to prevent transmission to others, and access HIV-related services and young people

become more afraid of HIV-related stigma and discrimination than HIV disease itself (Gebremedhin, et al., 2017). The important thing that must be grown in adolescents with HIV in order to face stigma and discrimination is positive self-efficacy. The results showed that positive self-efficacy could mediate the effects of depression and stigma on ARV adherence (Umar, et al., 2019).

There are several factors that support ARV treatment adherence in adolescents, namely individuals, disclosure status (disclosure), family/caregivers, health care providers including peer groups. This shows how important the role and synergy between individuals, families/caregivers and health services and peer groups is. ARV programs need to involve youth and parents/caregivers in an association, especially involving psychosocial and community support so as to increase adolescent adherence to ARVs and encourage adolescents to adhere to control schedules, thereby increasing their access to sustainable ARV services (Graves, et al., 2018). It is also better to disclose HIV status (disclosure) early on because delays in disclosing HIV status have a negative impact on overcoming disease and medication adherence (Medin, et al., 2015). In addition to the self-disclosure process, it is also important to disclose status to other families. Patients whose status is known by their families and who receive support from their families are four times better and have regular treatment compared to patients who do not receive support (Dahoklory, Romeo, & Takaeb, 2019).

Factors that hinder adolescents' adherence to ARV therapy are individuals, caregivers/families and health services. There is a difference between the factors that inhibit adherence in adolescents from their parents, namely that adolescents do not use money as an obstacle to carrying out ARV therapy (Hornschuh, et al., 2017). The lack of psychosocial support is said to be an obstacle in adolescent compliance, especially for those who are in boarding schools and manage ARV themselves (Gebremedhin, et al., 2017) even though support from family or people around is very decisive in increasing the confidence of patients with HIV AIDS to be able to live longer by obediently taking ARV drugs (Dahoklory, Romeo, & Takaeb, 2019).

Conclusion

Based on the results of a literature study from 12 articles, it was found that ARV treatment adherence in adolescents was influenced by supporting and inhibiting factors. The supporting factors that influence compliance are individuals, disclosure status, family/caregivers and health services. While the inhibiting factors that affect compliance are individuals, families/influencers and health care providers. Suggestion: it is important for nurses to identify the supporting and inhibiting factors that exist in adolescents with ARV treatment. This will make it easier for nurses to identify problems that exist in adolescents so that problems can be overcome together and do not become an obstacle in maintaining ARV treatment adherence.

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