

THE EFFECT OF SNAKES AND LADDERS PLAY THERAPY ON ARV MEDICATION COMPLIANCE IN CHILDREN WITH HIV/AIDS AT THE AKAR CINTA KASIH FOUNDATION, BALI

Ni Luh Ulan Pratiwi¹, Ni Luh Putu Yunianti Suntari Cakera²

Poltekkes Kemenkes Denpasar^{1,2}.

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Contact

yuni.suntari@yahoo.com

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ABSTRACT

Introduction

HIV is a virus that attacks the human immune system, while AIDS is an advanced disease that occurs due to the terminal stage of infection. The purpose of this study was to determine the effect of snakes and ladders play therapy on adherence to taking ARV drugs in children with HIV / AIDS at Yayasan Akar Cinta Kasih Bali.

Method(s)

Type of pre-experimental research with one-group pretest-posttest design. The sample in the study was 29 people. The sampling technique is non-probability sampling with purposive sampling technique. This study uses a measuring instrument in the form of a Morisky Medication Adherence Scale (MMAS-8) questionnaire by answering using a Guttman scale. Univariate analysis is variable characteristics and bivariate analysis using the Wilcoxon Sign Rank Test.

Result(s)

Respondents in this study were mostly aged 13-19 years as many as 20 people (69%), female as many as 16 people (55.2%) and elementary school education level totaling 13 people (44.8%). Before being given play therapy, the level of compliance was low as many as 20 people (69%) and after therapy the level of compliance was high as many as 22 people (75.9%). The test results showed a p-value = 0.000 < alpha (0.05), meaning that there is an effect of snakes and ladders play therapy on adherence to taking medication in children with HIV / AIDS.

Conclusion(s)

Suggestions for the Foundation, making play therapy as a supporting method in an effort to increase understanding of the importance of taking medication.

INTRODUCTION

Human Immunodeficiency Virus (HIV) is a virus that attacks the human immune system, reducing its ability to fight foreign substances and causing infection. Infection that progresses to the terminal stage can lead to Acquired Immunodeficiency Syndrome (AIDS) (Kementerian Kesehatan RI, 2022). According to the World Health Organization (WHO), HIV/AIDS remains a major global health problem, as HIV/AIDS transmission continues worldwide and has claimed approximately 42.3 million lives to date. In 2023, approximately 1.3 million people were reported to have contracted HIV, and approximately 630,000 people died from it (WHO, 2024a). Among other infectious diseases, HIV/AIDS data shows that HIV/AIDS ranks fourth in the world (Widiastuti et al., 2024).

According to the Ministry of Health of the Republic of Indonesia, recorded in the first quarter report in 2023, as many as 13,279 people were HIV positive out of the total number of people who had undergone HIV testing, namely 1,230,023 people, while only 10,924 people received ARV treatment. The number of people who had undergone HIV testing from the five provinces with the most cases of people who tested positive for HIV in the period January - March 2023, one of which was Bali Province, which was recorded as having conducted tests of around 23,372 people and who tested positive for HIV, namely 495 people. (Kementerian Kesehatan RI, 2023).

HIV cases increased between 2020 and 2023, but decreased in 2021. In 2020, 863 cases were detected. In 2021, HIV cases decreased to 488 cases, and then increased again to 589 cases in 2022. However, in 2023, they increased again to 1,992 cases. In 2023, HIV/AIDS cases increased significantly compared to the previous year. The regencies/cities with the highest data were Denpasar City and Badung Regency. (BPS Provinsi Bali, 2024).

According to the National Commission on Human Rights (Komnas HAM), HIV cases in children increase annually, with approximately 700-100,000 children. Of these, 14,150 cases are HIV-positive, occurring between the ages of 1 and 14 (Komnas HAM RI, 2024).

The government has implemented various efforts to address HIV, but HIV cases remain high, especially in Bali Province, necessitating promotive and preventive efforts (Surinati et al., 2019). One preventive effort is the provision of antiretroviral (ARV) drugs, which are used to

reduce the death rate from HIV/AIDS (Ministry of Health of the Republic of Indonesia, 2022). Antiretroviral therapy certainly has several side effects. Side effects from taking drugs experienced by someone diagnosed with HIV/AIDS can cause feelings of boredom and fatigue, especially in children. These feelings cause many to be non-compliant in taking ARV drugs, even though ARV drugs are drugs that must be taken for life and should not be missed (Jaemi et al., 2020).

According to the Indonesian Minister of Health Regulation, this means that individuals with HIV/AIDS are instructed to commit to regular, long-term ARV treatment (Ministry of Health of the Republic of Indonesia, 2014). Non-compliance with treatment is one of the causes of (480,000-1 million people) dying from HIV.

Patient consistency, especially in children, in taking medication is a crucial factor in successful therapy. While ARV therapy failure is often due to poor adherence in children. Therefore, appropriate interventions are needed to improve medication adherence. One such intervention is play therapy, which involves playing the snakes and ladders game.

Play-based therapy is an appropriate therapy for children (Zeky et al., 2019). One play therapy that can be used with children because it has simple standard procedures is the snakes and ladders game.

Research conducted by (Yulianti et al., 2022) showed that play therapy can improve medication adherence in hospitalized children with a p-value of $0.031 < (\alpha = 0.05)$. This study's results are supported by (Colin et al., 2020) who stated that there is an effect of snakes and ladders play therapy on the level of cooperation during treatment in preschool children in daycare with a p-value of $0.000 \leq 0.05$.

Based on the results of a preliminary study conducted by researchers at the Akar Cinta Kasih Foundation in Bali, the results recorded from the accumulation of 2012-2024 were 107 children with HIV/AIDS and only 40 children actively visited with an average age range of 8-19 years. All of this background underlies the importance of conducting a study entitled "The Effect of Snakes and Ladders Play Therapy on Compliance with ARV Medication in Children with HIV/AIDS at the Akar Cinta Kasih Foundation in Bali".

METHODS

This study used a pre-experimental approach with a one-group pretest-posttest design. This study was used to measure ARV medication adherence in children with HIV/AIDS. The study was conducted twice: before and after the intervention.

The population in this study were 40 children aged 8-19 years with HIV/AIDS at the Akar Cinta Kasih Foundation in Bali who were actively visiting. Researchers determined respondents according to inclusion and exclusion criteria. The inclusion criteria in this study were: 1) Children with an HIV diagnosis who had undergone Antiretroviral (ARV) therapy for at least 6 months; 2) Children aged between 8-9 years; 3) Children who had never participated in snakes and ladders play therapy; 4) Parents/guardians who had given informed consent for the child to participate in the research activities, while the exclusion criteria were: children with physical or mental disorders that hindered their ability to play snakes and ladders (for example, severe motor disorders or severe intellectual disabilities).

The sample size was calculated using the Slovin formula, which yielded 29 samples. The sampling technique used in this study was non-probability sampling with a purposive sampling technique.

This study uses primary data collected from March 2025 to April 2025. This research was conducted at the Akar Cinta Kasih Bali Foundation, precisely in Mambal Village, Badung Regency, Bali Province.

This study was conducted over a period of one month, with five sessions consisting of one pre-test, three intervention sessions, and one post-test, with treatment duration of approximately 40 minutes per day. Medication adherence data were collected using the MMAS-8 questionnaire. Data were processed using SPSS with the Wilcoxon Sign Rank test.

This study uses the Wilcoxon Sign Rank statistical test because the data is ordinal and the data is not normal, so it is included in the non-parametric category with the criteria for hypothesis testing and decision making if the $\text{Sig. } p \text{ value } \leq 0.05$ which means there is a difference between the two results that have been measured.

Based on the results of statistical tests using the Wilcoxon Sign Rank test, the $p\text{-value } = 0.000 < 0.05$ was obtained, indicating that there was an influence in providing snakes and ladders play therapy on adherence to taking

ARV medication in children with HIV/AIDS at the Akar Cinta Kasih Foundation, Bali in 2025. The results showed that Snakes and Ladders Play Therapy can increase adherence to taking ARV medication in research respondents who are children with HIV/AIDS.

RESULTS

Before further explaining the results of the analysis of the research, the research results will be presented based on the characteristics of the respondents first:

a) Respondent Characteristics by Age

This study used two groups corresponding to the target age groups of respondents: those aged 8-12 (Industry versus Inferiority) and those aged 13-19 (Identity versus Confusion). The characteristics of the study respondents by age are presented in Table 1.

Tabel 1
Distribution of Respondents by Age of
Children with HIV/AIDS

at the Akar Cinta Kasih Foundation in Bali
in 2025

Age (years)	Frequ ensi	Percentag e (%)
8-12	9	31
13-19	20	69
Total	29	100

Based on the interpretation of table 1, it shows that the characteristics of respondents according to age are mostly in the age range of 13-19 years with a total of 20 people (69%).

b) Respondent characteristics based on gender

Respondent characteristics based on gender are presented in Table 2, as follows:

Tabel 2
Distribution of Respondents Based on
Gender Frequency of Children with HIV/AIDS
at the Akar Cinta Kasih Foundation, Bali, in
2025

Gender	Frequensi	Percentage (%)
Male	13	44,8
Female	16	55,2
Total	29	100

Based on table 2, it shows that the gender of the respondents in this study was mostly female with a total of 16 people (55.2%).

c) Respondent characteristics based on education level

The characteristics of research respondents based on education level in this study are presented in Table 3 below:

Tabel 3
Distribution of Respondents by Education Level at the Akar Cinta Kasih Foundation in Bali in 2025

level of education	Frequensi	Percentage (%)
SD	13	44,8
SMP	10	34,5
SMA/K	6	20,7
Uneducated	0	0
Total	29	100

Based on table 3, it shows that the majority of respondents in this study had an education level of elementary school, namely 13 people (44.8%).

Table 4
Hypothesis Test Results: The Effect of Snakes and Ladders Play Therapy on ARV Medication Adherence in Children with HIV/AIDS at the Akar Cinta Kasih Foundation in Bali in 2025

Categ ori compl iance	Before		After		P- value	
	Freq	(%)	Fre q	(%)		
Low	20	69	0	0		
Mid	9	31	7	24,1	0,000	
High	0	0	22	75,9		
Total	29	100	29	100		

Based on table 4, it shows that the results of the Wilcoxon statistical test in this study showed a p -value = 0.000 < alpha (0.05) which means that there is an influence in the implementation of snake and ladder play therapy on adherence to taking ARV medication in children with HIV/AIDS at the Akar Cinta Kasih Foundation, Bali in 2025.

DISCUSSIONS

The results of the study showed that before being given therapy playing with snakes and ladders, the majority had a low level of compliance of 20 people (69%) and 9 people (31%) had moderate compliance.

The use of antiretroviral (ARV) drugs is crucial for the recovery of people living with HIV/AIDS (PLWHA). Therefore, patient compliance with the correct dosage and treatment schedule is essential to prevent drug resistance. However, not all people with HIV/AIDS have good adherence to treatment. This is due to various factors, such as forgetting,

taking medication late, or even not having time to take the medication. If PLWHA are not compliant in taking ARV medication, it can lead to a weakened immune system, the emergence of opportunistic diseases, and can reduce the body's functional systems, making the body less productive (Windiramadhan et al. (2024).

Researchers' analysis revealed that before receiving play therapy using snakes and ladders, some children lacked a clear understanding of the importance of medication adherence, leading many to believe that skipping medication once is no problem. Various reasons for not taking medication, such as forgetting to take medication, forgetting to bring medication with them when traveling, experiencing discomfort when swallowing medication, or a bitter taste, can negatively impact the quality of treatment. Non-adherence to medication can increase the risk of viral replication, leading to complications due to decreased immunity.

After being given play therapy with snakes and ladders, the results of the study showed that after being given play therapy with snakes and ladders media, compliance with taking ARV medication in children with HIV/AIDS experienced an increase with the results that the majority of research respondents had a high level of compliance of 22 people (75.9%) and moderate compliance of 7 people (24.1%).

Researchers' analysis showed that after being given play therapy using snakes and ladders, adherence scores for ARV medication in children with HIV/AIDS increased before and after the play therapy. Through educationally designed games, children can understand the importance of taking their medication regularly in a fun and accessible way that's appropriate for their age. This game not only increases knowledge but also fosters motivation, forms positive habits, and reduces anxiety or resistance to treatment. Furthermore, play therapy supports children's emotional and social development, as they can interact with peers, share experiences, and feel supported. Overall, this approach can create a positive atmosphere that encourages children to be more compliant with their ARV medication schedule, ultimately having a positive impact on their quality of life and long-term health.

CONCLUSIONS

Based on the results of research and discussions that have been carried out at the Akar Cinta Kasih Foundation Bali on March 25 – April 21, 2025, regarding the effect of snakes

and ladders play therapy on adherence to taking ARV medication in children with HIV/AIDS at the Akar Cinta Kasih Foundation Bali in 2025, with a total of 29 respondents, it can be concluded that:

1. The characteristics of respondents in the study on medication adherence in children with HIV/AIDS at the Akar Cinta Kasih Foundation in Bali were predominantly between the ages of 13 and 19 (69%), female (55.2%), and elementary school (44.8%).
2. Prior to snakes and ladders play therapy, ARV adherence in children with HIV/AIDS at the Akar Cinta Kasih Foundation in Bali was low (69%).
3. After snakes and ladders play therapy, ARV adherence in children with HIV/AIDS at the Akar Cinta Kasih Foundation in Bali increased, with most respondents having a high level of adherence (75.9%).
4. Snakes and ladders play therapy significantly impacted ARV adherence in children with HIV/AIDS at the Akar Cinta Kasih Foundation in Bali, as indicated by a p-value of $0.000 < \alpha (0.05)$.

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