



The effectiveness of using a module on the benefits of moringa leaves to increase knowledge of hiv/aids patients in improving the immune system

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ARTICLE INFO

Article history:

Received Jan 16, 2024

Revised Jan 20 2024

Accepted Jan 29, 2024

Keywords:

HIV/AIDS;
Knowledge;
Module;
Moringa.

ABSTRACT

The increase in HIV cases in West Java is ranked 2nd out of the 5 largest provinces with HIV in Indonesia with 1,224 people and 223 cases in Bekasi Regency in 2021. In the case of HIV sufferers, it is certain that HIV treatment will require a lot of money, so other alternative treatments are needed to overcome this. Moringa leaves (*Moringa oleifera*) are widely used and trusted as a medicine for infections, anti-bacterial, urinary tract infections, external wounds, anti-hypersensitivity, anti-anemic, diabetes, colitis, diarrhea, dysentery and rheumatism. This research used a quantitative research design with a quasi-experimental approach with one group with pre & post test, where the researcher carried out treatment on respondents, namely in the form of measuring knowledge before and after giving a module about the benefits of Moringa leaves in improving the immune system in HIV/AIDS sufferers in the district area. Bekasi. The average pre test score is 7.40, the minimum score is 5 and the maximum score is 9. The average post test score is 8.23, the minimum score is 5 and the maximum score is 10. Of the 30 respondents the average pre test score is 7.40 and The average post test score is 8.2. The results of the statistical test showed a p value of: 0.005 ($p < \alpha: 0.05$), meaning that there was an effect of using the module in increasing the knowledge of HIV/AIDS sufferers about the benefits of Moringa leaves in improving the immune system.

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1. Introduction

The increase in HIV cases in Indonesia until March 2021 was 5,558,618 people. West Java is ranked 2nd out of the 5 largest provinces with HIV in Indonesia, with 1,224 people. (Kemenkes, 2021). Meanwhile, for the Bekasi City area, there were 143 people in 2019. (Ismail, 2022). In the case of HIV sufferers, it is certain that HIV treatment will require a lot of money, so other alternative treatments are needed to overcome this. Everyone who suffers from AIDS must be infected with HIV, but not everyone with HIV infection will suffer from AIDS. AIDS cases reflect long-lasting HIV infection and the presence of various symptoms. This disease will cause disturbances in almost all body systems which occur as a result of a decrease in the immune system (Amal & Niu, 2020).

The HIV virus does not cause death directly in sufferers, but there is a decrease in the body's immunity which makes sufferers susceptible to opportunistic infections .(Hanifah, 2021) HIV disease which was originally acute and deadly has turned into a chronic disease which can be managed.(Lindayani & Maryam, 2017). Various drug research for HIV sufferers has been carried out, including research on drugs from medicinal plants in Indonesia. One of them is the Moringa plant which was researched by Wahyudi Isnan and Nurhaedah in 2017 with the title "various benefits of the Moringa oleifera Lamk plant for society" with the results of the research that the Moringa plant is a type of non-timber forest product that has a variety of good benefits for health, food, beauty and the environment(Primadana et al., 2023). This research shows that the Moringa plant can be beneficial for health. This proves that the contents of the Moringa plant can be beneficial for health.

In 2020, research was also carried out by Julis Novitra in 2020 in the VCT room at Dr. Rubini Mempawah Regional Hospital, West Kalimantan with the title "Effect of dose and duration of administration of moringa oleifera cookies on CD4 levels, albumin, hemoglobin and nutritional status in HIV/AIDS patients The results of this research prove that administering Moringa leaf cookies at a dose of 20 grams with a duration of 60 days is the most effective and is able to increase levels of CD4, hemoglobin, albumin and nutritional status compared to a dose of 10 grams with a duration of 30 days. These results show that there is an influence of Moringa leaves on improving the health status of HIV/AIDS sufferers.(Novitra, 2020),

From the considerations above, the researcher wants to know whether there is a difference in the knowledge of HIV/AIDS sufferers before and after the explanation through the module about the benefits of Moringa leaves in improving the immune system. This research can increase the knowledge of HIV/AIDS sufferers about the benefits of Moringa leaves in improving the body's immune system, so that HIV sufferers / AIDS will gain knowledge about the use of Moringa plants in treating or maintaining life expectancy and quality of life.

2. Methods

This research used a quantitative research design with a quasi-experimental approach with one group with pre & post test, where researchers carried out treatment on respondents, namely measuring their knowledge before and after giving a module to HIV/AIDS sufferers about the benefits of Moringa leaves for improving the immune system. The research location was carried out in the Bekasi district area in collaboration with the Bekasi district AIDS Prevention Commission. Data collection techniques using accidental sampling, using data collection tools are modules and questionnaires containing an assessment of the knowledge of HIV/AIDS sufferers about the benefits of Moringa leaves in improving the immune system, demographic data, namely demographic data (age, gender and education level). Bivariate analysis of research results used chi square and Wilcoxon.

3. Result and Discussion

3.1 Result

Based on research conducted by 30 respondents, the following are the results research respondents based on age can be seen from table 1 below :

Table 1.
Frequency distribution of respondents based on age

Number responden	Minimum age	Maximum age	Mean
30	16	57	33.13

From the table above we can see the age characteristics of the 30 respondents, the minimum age is 16 years and the maximum age is 57 years.

Based on research conducted by 30 respondents, the following are the results research respondents based on gender can be seen from table 2 below :

Table 2.
Frequency distribution of respondents based on gender

Gender	Frequency	Percentage
Male	19	63,3
Female	11	36,7
Total	30	100

From the table above, it can be seen that the gender of the majority of respondents is male, amounting to 63.3%. Based on research conducted by 30 respondents, the following are the results research respondents based on age can be seen from table 3 below :

Table 3.
Frequency distribution of respondents based on level education

Level education	Frequency	Percentage
Elementary	2	6,7
Middle School	7	23,3
Senior high school	17	56,7
Higher Education	4	13,3
Total	30	100

From the table above, it can be seen that the highest education level of respondents was high school, namely 56.7%. Based on research conducted by 30 respondents, the following are the results research respondents based on can be seen from table 4 below :

Table 4.
Effectiveness of Module Use

varibel	N	Mean	Sd	P value
Pre Test	30	7,40	1,51	0,005
Post Test		8,23		

Based on the table above, from 30 respondents the average pre-test score was 7.40 and the average post-test score was 8.23, there was an increase in the average value of knowledge level. The statistical test results obtained a p value of: 0.005 ($p < \alpha: 0.05$), meaning that there was an influence of using the module in increasing the knowledge of HIV/AIDS sufferers about the benefits of Moringa leaves in improving the immune system.

3.2 Discussion

The results of the research show that respondents according to age ranged from 16 to 57 years with an average age of 33.3 years. This is in accordance with the Ministry of Health. The majority of people living with HIV/AIDS in Indonesia are in the 25-49 year age group, namely 69.9% of the total cases. Then the second largest was from the 20-24 year age group at 16.1%. Followed by those aged over 50 years at 7.7% and 15-19 years at 3.4%.(Kemenkes, 2021) Regarding the gender of HIV/AIDS sufferers, 69.9% of the 30 respondents were men. This is in accordance with data from the Ministry of Health which states that men dominate HIV and AIDS cases in the country. The number of HIV cases in men was 31,218 cases or the equivalent of 58.95% of the total HIV cases in the country. On the other hand, the number of female HIV cases was 21,737 cases, and 0 cases of unknown gender.(Mutia, 2023) In accordance with data from the Bekasi District AIDS Control Commission which states that of the total 223 cases of HIV/AIDS sufferers in 2021, the highest transmission occurred in men with 158 cases and women with 65 cases.(Ismail, 2022) Of the 30 respondents, the majority of respondents' education level was high school, namely 56.7%. This allows the absorption of new knowledge to be fast with a secondary level of education.(Notoatmodjo, 2012).

The research results show the level of knowledge of respondents before being given the module as seen from the average pre-test score with an average score of 7.40. Respondents' knowledge

before being given the module was in the average range of 74% to be able to answer questions about the benefits of Moringa leaves in improving the immune system. After being given the module, respondents had an average post-test score of 8.23. This shows that there was an increase in respondents' knowledge after being given the module. From statistical tests it is known that the P value is <0.005 . This value shows that providing the module is effective in increasing the knowledge of HIV/AIDS sufferers about the benefits of Moringa leaves in improving the immune system. (Suriawati & Siti Rahayu Rachmawati, 2023) These results are in accordance with the results of Ahmady and Ashari's research which states that pocket books or similar modules can be effective in stimulating knowledge. (Ahmady & Ashari, 2018) This is also in line with research from Putri, Wijaya and Bestari in 2021 which stated that pocket books are a form of learning media in the form of written books, which can be in the form of text, pictures, photos which enable the process of transmitting information. (M. Putri et al., 2021) The aim of creating a CDIO-based module is to improve the ability to understand and solve problems for students and as a teaching material that can help lecturers in carrying out lectures. (Niu & Wardhani, 2021) The module provided by researchers regarding the benefits of Moringa leaves for improving the immune system is expected to be very beneficial for the health of HIV/AIDS sufferers. With the many health benefits of Moringa leaves, it can enable HIV/AIDS sufferers to improve their health in addition to receiving medical treatment. (Murdiana et al., 2022) Moringa leaves are an effective neuroprotector. Moringa with its antioxidants can reduce reactive oxygen compounds, thereby protecting the brain. Moringa leaves can be used to treat dementia, leaf extract has been shown to reduce acetylcholine esterase activity, thereby improving cholinergic function and memory. Moringa leaves are also prescribed by herbal practitioners for HIV-AIDS patients, Moringa can improve the immune system of HIV-AIDS people. (Satriyani, 2021)

4. Conclusion

Providing the module can increase the knowledge of HIV/AIDS sufferers about the benefits of Moringa leaves in improving the immune system. The module as an effective learning medium is used to convey information to HIV/AIDS sufferers. From the results of this research, the researcher suggests that health workers can provide information related to health problems in the community by using learning media in the form of modules and the like, especially for HIV sufferers, the majority of whom are not willing to meet in person because there is still a strong public stigma towards HIV.

This research has limitations in the number of respondents and methods used. This research only finds out the knowledge of HIV/AIDS sufferers regarding the benefits of Moringa leaves for improving the immune system through module media and has not yet examined the benefits of Moringa leaves on the immune system of HIV/AIDS sufferers directly. For further research, you can conduct research on how to increase knowledge about the benefits of Moringa leaves for improving the immune system in HIV/AIDS sufferers by using other methods or media, such as providing direct training or counseling to HIV/AIDS sufferers with a larger number of samples or respondents. Apart from that, future researchers can also carry out research using quasi-experimental methods on HIV/AIDS sufferers to see whether there is an increase in immunity in these sufferers by consuming various preparations of Moringa leaves. So research will further strengthen that the benefits of Moringa leaves are very effective as an alternative in treating HIV/AIDS.

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