



Development of Health E-Booklets in HIV/ AIDS Prevention for Padang State University Students

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Abstract: Human Immunodeficiency Virus (HIV) is an infectious disease, if we pay attention to the various characteristics of disease transmission, then the form of transmission from the agent is a very important form because the nature of this disease is more often endemic and spreads more easily in society. In Indonesia, the spread of HIV/AIDS occurs evenly in almost all provinces. The prevalence of HIV cases in the population aged 15 - 49 years has increased. This research aims to produce E-Booklet. This type of research is development research using a 4-D model. The development stage of this model starts from the define stage, design stage and develop stage. The instruments used in this development research were student, lecturer questionnaires and validation sheets E-Booklet by experts, as well as a practicality assessment sheet E-Booklet filled by students and lecturers. The research results show that E-Booklet very valid with an average score of 86.01%. The practicality assessment of students in the field trial (group evaluation size) was with a score of 95.00% with very practical criteria, and the practicality assessment by the lecturer obtained a score of 93.00% with very practical criteria. Can be concluded that E-Booklet that has been developed is included in the very valid and very practical category.

Keywords: Development; E-Booklet; HIV/AIDS

Introduction

Human Immunodeficiency Virus (HIV) is an infectious disease, if we pay attention to the various characteristics of disease transmission, then the form of transmission from the agent is a very important form because the nature of this disease is more often endemic and spreads more easily in society. HIV disease is transmitted through sexual intercourse with multiple partners, mother and baby, blood and blood products contaminated with HIV/AIDS, use of unsterilized medical equipment, tools for cutting the skin and sharing injection needles (Epstein et al., 2011; Harmita et al., 2022; Watorasak et al., 2017).

According to the United Nations Acquired Immunodeficiency Syndrome (UNAIDS), globally, in 2013 there were 12.9 million cases, in 2014 there were 15.0 million cases and in 2015 there were 17.0 million

cases (Leumi et al., 2020; LeVasseur et al., 2014). Indonesia is in third place after India and China. There were 2.3 million new cases of HIV infection and at the same time the number of deaths due to AIDS was stated to be 1.6 million in 2015. HIV and AIDS in Indonesia have entered a very worrying stage, according to the data obtained for the number of HIV/AIDS sufferers. AIDS in Indonesia in the last three years, namely in 2013 there were 29,037 million cases, in 2014 there were 32.711 million cases and in 2015 it decreased to 30.935 million cases (Indonesian Ministry of Health, 2013, 2014, 2015; UNAIDS, 2011).

In Indonesia, the spread of HIV/AIDS occurs evenly in almost all provinces. The prevalence of HIV cases in the population aged 15 - 49 years has increased (Febriyanti, 2021). At the beginning of 2009, the prevalence of HIV cases in the population aged 15 - 49 years was only 0.16%, then increased to 0.30% in 2011,

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increased again to 0.32% in 2012 and continued to increase to 0.43% in 2013. The highest cumulative percentage of AIDS cases based on age was in the 20 - 29 year age group (35.2%), and the highest percentage was in teenagers and approaching adulthood. The highest risk factors for transmission are through heterosexual intercourse (58.7%), injecting narcotics users (17.9%), followed by perinatal transmission (2.7%) and homosexuality at 2.3% (Indonesian Ministry of Health, 2015).

Prevention of HIV/AIDS is carried out using a three-level prevention approach, namely primary prevention, secondary prevention and tertiary prevention. Primary prevention focuses on preventing risk factors before the disease process begins (Kassa, 2017). Types of activities that can be carried out are providing health education about HIV/AIDS, how to transmit it and how to prevent it, increasing public awareness about the importance of healthier behavior by avoiding drugs, being loyal to your partner and avoiding premature sexual relations (Faridah, 2020; Wulandari et al., 2020).

Prevention and control are the government's focus in dealing with HIV/AIDS. Educational targets for students are very important considering that the productive age dominates and contributes to the increasing number of new HIV positive cases. One way is to increase students' confidence that they are susceptible to contracting this disease if they do not avoid risky behaviors such as having free sex, and changing sexual partners, which are behaviors that can cause high transmission and spread of HIV/AIDS among students (Hendra et al., 2017; Watorasak et al., 2017).

Education about how AIDS is transmitted and prevented is the main weapon against HIV/AIDS because there is no treatment or vaccine that can prevent the spread of HIV/AIDS (Olorukooba et al., 2023). Education or health education can use media such as providing alternative media such as pocket books or e-booklets. E-Booklets have limited coverage, the delivery is simple and only focuses on one goal, making it easier for readers to understand the information presented (Dewi et al., 2020; Festiawan et al., 2020; French, 2013; Notoatmodjo, 2005; Sugiarto et al., 2018).

Research related to the development of HIV/AIDS prevention health E-Booklets is still underdeveloped. HIV/AIDS prevention education is still limited to lecture material in certain study programs. No one has yet developed educational media in the form of e-booklets. So it is necessary to develop HIV/AIDS health e-booklets as educational media for Padang State University students.

Method

This type of research includes development research (research and development). This research aims to produce a product in the form of a Health E-Booklet valid and practical. E-Booklet development will be carried out using the 4-D development model by Thiagarajan 1974 which consists of 4 stages, namely define, design, develop and disseminate. However, this research was limited to the develop stage (Yuberti, 2014).

The stages in preparing the E-Booklet are the define stage. The define stage consists of preliminary final analysis, student analysis and concept analysis. The initial final analysis aims to find out existing problems. At the student analysis stage, students were given a questionnaire regarding the use of teaching materials. The concept analysis carried out was analyzing the learning design. Design stage, at this stage the format selection and initial design are carried out. The format is chosen to suit existing learning resources. In the initial design stage, what is carried out is creating a content framework and preparing the application that will be used to compile the E-Booklet. Develop stage, at this stage product validation tests are carried out and product revisions are carried out. Product validation tests are carried out to assess product design. The validation test in this research was carried out by media, language and material experts by Padang State University lecturers. Product revisions aim to correct existing deficiencies in the E-Booklet that has been created.

The type of data collected in this research is primary data. The type of primary data is data obtained directly through research instruments, namely qualitative and quantitative data. Qualitative data, namely in the form of validator opinions from validation data as well as students' opinions about the practicality of the E-Booklet being developed. Meanwhile, quantitative data was collected through validation assessment sheets from experts, students' practicality in using E-Booklets (Sanchia et al., 2019).

Results and Discussion

E-booklet development was carried out using the 4-D procedure recommended by Thiagarajan which consists of 4 stages, namely define, design, develop and disseminate. However, in this research the preparation of E-booklets was only limited to the development stage. The following are the stages in preparing an E-Booklet:

Definition Stage (Define)

The definition stage is carried out to collect information that is used as a basis for product

preparation. The define stage in this research consists of three steps, namely initial final analysis, student analysis, and concept analysis. Preliminary and final analysis. Preliminary and final analysis was carried out by conducting irregular interviews with lecturers at Padang State University. Based on the results of these interviews, the results showed that learning resources for preventing HIV/AIDS using e-booklets were not yet available.

Student analysis was carried out by distributing questionnaires to students at Padang State University. Based on the results of distributing questionnaires, it was found that the learning resources that were often used were online books. The learning resources used are also less interesting for students to read. Then there are no learning resources in the form of e-booklets. Therefore, learning resources have been prepared and created that are more colorful and equipped with pictures and short explanations so that they can attract students' interest in learning. These learning resources are packaged in a product in the form of an E-Booklet. Concept analysis is carried out by analyzing the learning design. Based on the concept analysis, the results showed that there was one sub-material that needed additional teaching materials (Na'imah et al., 2022).

Design Stage

The next stage is the design stage. The design stage is the stage of designing the E-Booklet in accordance with the information obtained at the define stage. The design stage consists of two steps, namely format selection and initial design. The E-Booklet format that is prepared is that the E-Booklet is made as concise as possible and is equipped with pictures so that it can attract students to read. The initial design of the E-Booklet consisted of several parts consisting of cover, foreword, table of contents, contents section, and bibliography (Tsani et al., 2023).

Development Stage (Develop)

The final stage in this research is the development stage (Develop). The prototype development stage is the stage of creating the E-Booklet valid and practical. Validity aims to evaluate the E-Booklet that has been developed. This test is carried out by checking the suitability of grammar, presentation, appearance and scientific approach (Widjajanti et al., 2008).

The developed e-booklet can help students discover material concepts effectively independent. In line with Fitriani et al. (2017) statement that one of the requirements for the didactic aspect is to emphasize more in the process of discovering material concepts. Results of needs analysis for E-Booklets, 78.50% of respondents stated the need to use E-Booklets.

The e-Booklet is designed according to the results of student analysis. The resulting E-Booklet design is tailored to your needs and the conditions of students in learning. Student worksheet design created interesting, equipped with pictures and variations in the E-Booklet so that it is not It seems monotonous so it can attract students to study it. The development of E-Booklets is an alternative media that can be used as an HIV/AIDS prevention campaign in the student environment, considering that E-Booklets are very informative and simple media with more attractive images, making it easier to understand the HIV/AIDS material presented.

This research is in line with Muzdalifah et al. (2019) who say that there are several things that can influence knowledge, including level of education, information sources, experience and social culture. A high level of education means that someone has undergone a learning process towards better development and change. Then extensive sources of information will also add more information received by someone and contribute to their level of knowledge. Social culture can also influence the level of knowledge, namely social giving a person the opportunity to receive information from other people around him and culture giving a person the opportunity to accept or reject information. The last one is experience, seen from the experience a person has previously had.

This is supported by research by Saghu (2011), it was found that there was a relationship between knowledge about HIV/AIDS and free sexual behavior among teenagers at Tri Guna Bhakti Middle School in Surabaya with a significance of $p = 0.001$. From this it can be seen that having good knowledge supported by reliable sources of information will also form good behavior in preventing disease or about anything related to health. Good environmental support factors will shape the behavior that is embedded in the student or learner.

E-Booklets are a source of learning materials that utilize IT advances in the education sector and are expected to be able to increase student understanding. The E-Booklet that has been developed can be seen in Figure 1.

At the E-Booklet product development stage, there is a validity trial of the E-Booklet carried out by a team of experts (Expert review). E-Booklet Development designed to help students in the learning process. For this reason, the validation stage is carried out by a team of experts or experts (Expert review). The validation results of the expert team (Expert review) can be seen in Table 1.



Figure 1. E-Booklet cover display

Table 1. E-Booklet Validity Test Results

Assessment Aspects	Mark (%)	Category
Content Aspect	85.70	Very Valid
Graphic Aspects	82.50	Valid
Language Aspects	90.10	Very Valid
Average Validity	86.01	Very Valid

Based on the results obtained from the validity test, an average value of 86.01% was obtained in the very valid category. This is supported by the opinion of Arikunto (2013) who states that if data obtained from an average assessment of a product being developed is valid then it can be said that the product has been able to provide an impact in the form of a general picture, appropriate development goals and is true to the facts, and circumstances. The validation aspect carried out at the development stage is seen from 3 aspects, namely: content aspect, graphic aspect and language aspect. For more details, each of these aspects is described as follows.

Content Aspect

Aspects of the contents of the E-Booklet are declared valid by the validator. The validity value for the content aspect is 85.70% with a very valid category. Based on the content aspect criteria, it is known that E-Booklet what has been developed is appropriate and can make students independent, active and focused in learning.

Graphic Aspects

The graphical aspects of the E-Booklet are declared valid by the validator. The validity value in this aspect is 82.50% in the valid category. Based on the criteria in the graphic aspect, it can be stated that the E-Booklet developed uses a type and size of letters that can be read clearly and uses appropriate punctuation. Furthermore, the image presentation in the E-Booklet already has an explanation, size, and is in accordance with the material presented. In accordance with the opinion of Prastowo (2015) who states that the presentation of images is needed to support and clarify the content of the material, as well as to increase reader interest (Sholichin et al., 2022). In the graphic section, it can be concluded that the E-Booklet developed has an attractive appearance.

Language Aspects

The language aspects of the E-Booklet are declared valid by the validator. The validity value in the content aspect is 90.10% with a very valid category. The language aspect is an aspect that needs to be considered in preparing teaching materials and the language used should be simple and easy to understand. Based on the material developed, the E-Booklet is stated to have presented clear learning outcomes and material, lessons and evaluations that are in accordance with learning outcomes, have developed correct concepts and are in accordance with existing rules (Widyatmojo et al., 2017).

Three aspects of E-Booklet validation evaluation what has been described is a unified whole and mutually supports each other to develop E-Booklets which is good and according to the rules. This is in line with research by Misbah et al. (2021), that validity is seen from several aspects, namely the language aspect, content aspect and graphic/display aspect contained in the E-Booklet (Gultom et al., 2022).

In the next stage, a one to one evaluation was carried out, namely an assessment carried out with representatives of E-Booklet users, namely 3 students with different levels of ability. At this stage, trials were carried out by students at Padang State University. The results of one-on-one trials can be seen in Table 2.

Table 2. One Two One Evaluation Results

Assessment Aspects	Mark (%)	Category
Component Completeness	85.35	Very good
E-Booklet Material	90.50	Very good
Graphics	81.00	Good

From table 2 it can be seen that all components are good, where the completeness component of the E-Booklet component is at a score of 85.35% in the very good category, for the E-Booklet material component it is at a score of 90.50% in the very good category and the graphics component is at score 81.00% with good

category. So it can be concluded that this E-Booklet is suitable for use according to the one to one results.

Furthermore, students also provide input regarding the E-Booklet products that have been developed. Based on the results of the one to one evaluation validation, information was obtained that the E-Booklet that had been developed received a positive response from students. This can be seen from the analysis results which show that the completeness of the content, graphics and language has been fulfilled and is available properly.

The practicality assessment of the E-Booklet was carried out in stages. The first assessment was carried out by means of small group evaluation (Azizah et al., 2021). Small group evaluation is carried out through a practicality questionnaire instrument given to students which aims to see the practicality of the E-Booklet. The results of the small group evaluation analysis showed that the overall practicality average value was 94.20%.

Assessment Stage

At this assessment stage, an assessment of the E-Booklet is carried out that have been developed, as for the assessments carried out includes practical tests by students and lecturers. At this stage, an E-Booklet assessment is carried out with a larger sample, in this case 168 students were used. The results of the practical test analysis in field tests by students and lecturers can be seen in Table 3.

Table 3. Practicality Test Results E-Booklet

Practicality Test	Mark (%)	Category
Student	95.00	Very Practical
Lecturer	93.00	Very Practical

Based on the practicality results for students, an average score of 95.00% was obtained in the very practical category. 93.00% based on practical test results by Padang State University lecturers. These results show that E-Booklet very practical for use by students and lecturers in carrying out the learning process.

In terms of attractiveness and convenience, all respondents agreed regarding the attractive appearance of the E-Booklet, ease of understanding the language used in E-Booklets, and ease of understanding the material using e-booklets. Matter This is in accordance with Prastowo's statement (2015), that it is an interesting teaching material for students and use language appropriate to the child's developmental level motivate to study hard and study smart. Apart from that, all over Respondents agreed regarding writing, letter fonts, structure sentences, pictures and presentation of writing and pictures in the E-Booklet are appropriate with E-Booklet graphic criteria supported by statements Apertha et al. (2018), that the technical requirements for

an E-Booklet emphasize presentation of the E-Booklet, namely in the form of writing, images and its appearance E-Booklet. E-Booklets that meet technical requirements can motivate students to study the material in the E-Booklet independently (Mujiati et al., 2021).

Based on observations made when carrying out practicality tests, it is clear that students are very happy and enthusiastic about learning using E-Booklets. Plus there are students who think that E-Booklets very interesting and easy to understand.

Conclusion

Based on the development that has been carried out, it is concluded that E-Booklet which has been developed has validity in the very valid category based on validator assessments, and has practicality in the very practical category based on student and lecturer assessments.

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Auhor Contribution

R. N: preparation of original draft, results, discussion, methodology, conclusions; D. A. S, D. S and E. Y: analysis, review, proofreading and editing. R. N, D. A. S, D. S, and E. Y: All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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