



WEBSITE-BASED ADOLESCENT MENTAL HEALTH DISORDERS SCREENING APPLICATION DESIGN

Irpan Ali Rahman^{1*}, Adi Nurapandi¹, Alis Sundewi¹, Henri Setiawan¹, Rita Rahayu²

¹Nursing Study Program, STIKes Muhammadiyah Ciamis, Jl. K.H. Ahmad Dahlan No.20, Ciamis, West Java 46216, Indonesia.

²STIKes Sukabumi, Jl. Karamat No.36, Sukabumi, West Java 43122, Indonesia

*van.vinnot@gmail.com

ABSTRACT

Mental health is a fundamental human right for individual, community, and socio-economic development. There are external and internal factors that can cause a person to experience mental problems. There are various factors contributing to the decline in the mental health of children and adolescents, such as economic problems, education, and the health crisis. The system used to help improve mental health is currently conventional, namely face-to-face between medical personnel and patients. This research aims to develop a "Design of a Website-Based Adolescent Mental Health Disorder Screening Application". Therefore, a web-based adolescent mental health screening application will be developed using the Self Reporting Questionnaire 29 (SRQ 29) method. This application was designed using the PHP programming language, MySQL database, and a decision-making system using the Self Reporting Questionnaire 29 (SRQ 29) method. The research method is development research. The research sampling was accidental sampling, The population and sample in this study consisted of 5 research subjects including: (1) Information systems media expert (2) Nursing subject matter expert (Nursing specialist) (3) Public health center (4) Headmaster (5) UKS supervisor/coordinator. Namely taking samples based on what was found by the researcher. This type of data collection uses primary data which is processed using interview observation techniques to obtain results related to adolescent mental health. Modeling using various existing modeling tools is the next step, if the modeling has been declared complete and by what you want to achieve, then proceed to planning until the main target is implementation. The assessment results from material experts obtained an average score of 4.8 in the "Very feasible" category and Media experts received an average score of 5 in the "very appropriate" category. Conclusion: The design of the Website-Based Adolescent Mental Health Disorder Screening Application that was developed has gone through a process of assessment, revision, and improvement from experts and has been declared suitable to be used as an application that helps simplify the process of screening for Adolescent Mental Health Disorders.

Keywords: adolescent mental disorders; application design; health screening; website

First Received 22 March 2024	Revised 28 April 2024	Accepted 30 April 2024
Final Proof Received 20 June 2024	Published 01 October 2024	
How to cite (in APA style) Rahman, I. A., Nurapandi, A., Sundewi, A., Setiawan, H., & Rahayu, R. (2024). Website-Based Adolescent Mental Health Disorders Screening Application Design. Indonesian Journal of Global Health Research, 6(5), 2799-2810. https://doi.org/10.37287/ijghr.v6i5.3661 .		

INTRODUCTION

Mental health is an important condition for individuals, including teenagers. In adolescence, a person experiences a crucial phase of identity search and self-exploration (Leuwol et al., 2023). Therefore, having good mental health is an important basis for behavior and thinking. As Hurlock explains in his book "A Life Span Approach," adolescence is a time when people search for their identity. They are trying to discover who they are, what their role is in society, and whether they are still in the childhood stage or have become adults and there are still many questions that arise in a teenager's mind. (Gore et al., 2011)

Mental health is a fundamental human right and it is essential for individual, community and socio-economic development (WHO, 2022). There are external and internal factors that can cause a person to experience mental problems (Setyantoro & Hanggara, 2023). People with mental problems are people who have physical, mental, social, growth and development or quality of life problems so they are at risk of experiencing mental disorders (Sarmini et al., 2023). Currently, everyone, both children and teenagers, has the potential to experience mental health problems, this is due to the low interest of teenagers in seeking information about mental illness, a culture of shame, and the still taboo of consulting psychologists the main problems in detecting and treating people sufferers of mental illness (Siamben et al., 2021).

World Health Organization (WHO) reporting on world mental health in *Transforming Mental Health For All* (2022) estimates that globally there are almost 1 billion people, which means 1 in 8 people live with mental disorders. In the Southeast Asia Region, approximately 13.2% of the population, meaning 1 in 7 (approximately 260 million people), lives with a mental health condition. Based on the results of the 2018 Basic Health Research (Riskesdas) in Indonesia, the prevalence of mental-emotional disorders in people aged 15 years and over is 9.8% of the total population of Indonesia, while West Java province ranks ninth after NTB and South Sulawesi with a total of 130,528 cases. or equivalent to 12.1% of the population (Riskesdas, 2018). Adolescents with mental disorders experience disturbances or difficulties in carrying out their daily lives due to the symptoms of their mental disorders (I-NAMHS, 2022).

Adolescence is a transition period from childhood to adulthood which experiences significant physical and cognitive changes, as well as increased independence in social relationships and the formation of self-identity (Hardoni et al., 2019). During adolescence, many biological, psychological, and social changes occur. There are various factors contributing to the decline in the mental health of children and adolescents, such as economic problems, education, and the health crisis. Adolescent behavior is very unstable and vulnerable to environmental influences, especially those closest to adolescents. One of the most difficult parts of adolescent development is adjusting to the social environment. Sometimes, if adolescents cannot choose, the majority of their social environment is negative. If teenagers cannot deal with the various stresses that exist, various negative conditions can arise such as anxiety, and depression, and can even trigger the emergence of psychotic disorders. The impact that can occur on teenagers in conditions like this is the emergence of various complex problems, both physical, emotional, and social, including educational. It is important to maintain comprehensive support for the mental health of children and adolescents so that they have several positive characteristics, such as being able to adapt to various situations, maintaining good relationships, being able to deal with stress, and being able to recover from difficult situations (Sutanto et al., 2022).

The system used to help improve mental health is currently still conventional, namely face-to-face between medical personnel and patients, this is what makes teenagers who have problems with their mental health have various reasons for not visiting a psychiatrist, including children not getting enough information and education about the problem. mental health, lazy to go to a psychiatrist because he is afraid that someone he knows will see him while waiting in line, does not dare to talk to his parents to ask for a consultation with a psychiatrist because he is afraid that the family's treatment will change towards the child, considers the problems he faces as easy things, the child unable to accept if the results from a psychiatrist will fall into the abnormal category, embarrassed to consult with a psychologist or

psychiatrist, for fear of getting various negative stigmas and discrimination by many parties (Sutanto et al., 2022).

One of the characteristics of the industrial era 4.0 is the speed of information that can be accessed using multiplatform equipment, both Windows, Linux, macOS, and Android. Of the platforms currently available, browsers include the various Operating System platforms, so Browser is the most familiar to use because all you have to do is call a certain URL or address, and the browser will answer it to find the destination address. Information systems and decision support systems are currently widely used in all fields, including the medical field (Sutanto et al., 2022). In this research, we will try to implement the implementation of an Information System using PHP programming so that it can be accessed by Browser from any monitoring system related to adolescent mental health, the method for drawing conclusions using a decision support system and the Self Reporting Questionnaire 29 (SRQ 29) method (Arini & Syarli, 2020). The results of a literature study conducted by (Sarfika et al., 2023) shows that the Self Reporting Questionnaire 29 (SRQ 29) can be used in mental health screening as an effort to early detect mental health problems in adolescents.

The novelty of this research is a web-based adolescent mental health screening application using the Self Reporting Questionnaire 29 (SRQ 29) method. This application was designed using the PHP programming language, MySQL database, and a decision-making system using the Self Reporting Questionnaire 29 (SRQ 29) method. The web-based youth mental health screening application was designed and built to help teenagers find out about their mental health independently and provide information and education about mental health disorders. Later, users who use this application will be given a questionnaire and when they have finished filling it out, results will come out whether their mental health is healthy or not. This application is intended for teenagers. Based on the above, this research aims to develop a "Design of a Website-Based Adolescent Mental Health Disorder Screening Application"

METHOD

In this research, the type of research used is qualitative research using research methods (Research & Development) up to stage five of 10 stages and at level one, namely four levels (Sugiyono, 2017) that is, to obtain an assessment of the feasibility of the application design from experts through the assessment questionnaire provided. The population and sample in this study consisted of 5 research subjects including: (1) Information systems media expert (2) Nursing subject matter expert (community mental health nursing specialist) (3) Public health center (4) Headmaster (5) UKS supervisor/coordinator .

The research was carried out in February – April 2024. Located at SMAN 2 Ciamis. Quantitative data collection was obtained from a questionnaire assessing the feasibility of the Website-Based Adolescent Mental Health Disorder Screening design from Community Nursing experts and Information Systems experts/media. Quantitative data was then measured on a scale of 1-5, very feasible with a score of 5, feasible with a score of 4, sufficient with a value of 3, less feasible with a value of 2, and 1 result is very less feasible. Qualitative data obtained from the results of expert assessment questionnaires regarding application design designs obtained an average value from the Material Expert Assessment Results was 4.8 with Point "A" in the "Very Eligible" Category and Media Expert Assessment Results with an average value of 5. Point "A" is in the "Very Feasible" category, so the application design development given the assessment is included in the "Very Feasible" category with Point "A". The points in this assessment are in line with research conducted previously that the assessment categories include: very inadequate, less feasible, quite feasible, feasible, and very

feasible, which are assessed from groups A, B, C, D, E (Rahman et al., 2021). The data processing and analysis carried out is the assessment data of experts and experts regarding the feasibility of designing a website-based adolescent mental health disorder screening application with the results of assessments from Information Systems experts and community nursing experts, then these data using a Likert scale are converted into qualitative data as in following table:

Table 1.
Response and Score

Point	Score	Respon
A	5	Very Worth It
B	4	Worthy
C	3	Decent Enough
D	2	Not Worth It
E	1	Very Inadequate

The Benchmark Reference Approach (PAP) is used to convert the five scales and then calculate them using the average score formula. The average of the assessment scores is then interpreted qualitatively after obtaining the average score to obtain the following feasibility results:

1. It is very feasible if the average score obtained is in the range of 4.21 to 5.00.
2. Eligible if the average score obtained is in the range of 3.41 to 4.20.
3. It is quite feasible if the average score obtained is in the range of 2.61 to 3.40.
4. Not feasible if the average score obtained is in the range of 1.81 to 2.60.
5. Not feasible if the average score obtained is in the range less than or equal to 1.80

This step is carried out after the development of the product draft is complete, in the validity testing stage this is carried out by validators and product users. Validators are carried out by development experts, education experts, material experts, and users. Expert validators assessed the product design of the developed website-based adolescent mental health disorder screening application. For users to assess whether or not the product design meets their expectations and desired standards. This application is not only easy and interesting to use but also has quite high accuracy in detecting potential mental health disorders. To maintain user data security and privacy, it cannot be accessed by other parties. in the design of this application, you cannot see the results of other users. As a follow-up to the screening results that can identify teenagers with potential mental health disorders, there is also the provision of initial information on preventing teenage mental health according to the mental health problems experienced by teenagers.

RESULTS

The characteristics of the respondents in this study are the parties involved in the Adolescent Mental Health Disorder Screening process. Research & Development/ R&D.

Potential and Problems

The teenagers at Ciamis High School all use smartphones, so this has great potential to be able to fill out screening questionnaires for mental health disorders. Today's teenagers are teenagers who can adapt to technology, making the screening process easier. Meanwhile, the problem that exists is that the screening process still uses a lot of manual work, so the filling process takes a long time and after the teenagers have filled it in, they then have to calculate the score from the screening results. The reporting obtained takes a long time and sometimes errors in filling in the scores will result in errors in the final results obtained.

Information Collection

The results of interviews conducted by researchers with related parties including Public health center (4) Headmaster (5) UKS supervisor/coordinator are as follows:

Table 2.
Interview Results

UKS Duties and Functions in Schools	Task UKS supervisor/coordinator Function UKS supervisor/coordinator
Adolescent mental health screening process	Knowing the problems and obstacles in the process of reporting screening for adolescent mental health disorders carried out by UKS supervisors
Website-Based Adolescent Mental Health Disorder Screening Application Design	Knowing the potential that exists in school UKS to facilitate the website-based screening process for adolescent mental health disorders

Product Design

The product design created by the researcher was based on the potential and existing problems as well as a study of information sources, so a flowchart and design plan were created as well as an application menu. The design was as follows: 1) Start Test, 2) Fill in Identity, 3) Fill in Questionnaire, 4) Get Information Screening Results, 5) Information on Tips for Maintaining & Maintaining Mental Health.

Expert/Expert Validation

Table 3.
Correction and Validation by Material Experts and Media Experts

Correction results and input
1. Enter tips for maintaining teenagers' mental health
2. Created audio and visuals for filling out the questionnaire

Table 4.
Recapitulation of Scores from Material Expert Assessment Results

Aspect	Score	Average	Category
1. Aspects of Source Relevance	25	5	Very Worth It
2. Aspects of Material Organizing	10	5	Very Worth It
3. Evaluation Aspects / Screening results	5	5	Very Worth It
4. Language Aspects	4	4	Worthy
5. Strategy Effects	5	5	Very Worth It

The calculation results were categorized as 'very feasible' and received an "A" grade. From the five aspects mentioned above, it can be concluded that the material presented in the application design meets all aspects assessed with an overall average score of 4.8, so it can be applied in research.

Table 5.
Recapitulation of Media Expert Assessment Results Scores

Aspect	Score	Average	Category
1. Language Aspect	10	5	Very Worth It
2. Strategy Effects	15	5	Very Worth It
3. Software Engineering	10	5	Very Worth It
4. Visual Display	15	5	Very Worth It

The results of the calculations can be seen that the average score is 5, the application design is

categorized as 'Very Feasible' and received an "A" score.

Revision of Application Design

In accordance with input and evaluation from media experts and material experts, the following are the results of the revision.

Table 6.

Revision Results According to Material Experts

1. Added Tips for Maintaining and Maintaining Teenage Mental Health
 2. Display the questionnaire in audio and visual form to further make the application attractive to teenagers.
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Researchers have made improvements to the content of the Website-Based Adolescent Mental Health Disorder Screening Application Design.

DISCUSSION

Potential and Problems

The results of the research study show that teenagers in high school all use smartphones, so this has great potential to be able to fill out screening questionnaires for mental health disorders. Today's teenagers are teenagers who can adapt to technology, making the screening process easier. Meanwhile, the problem that exists is that the screening process still uses a lot of manual work, so the filling process takes a long time and after the teenagers have filled it in, they then have to calculate the score from the screening results. The reporting obtained takes a long time and sometimes errors in filling in the scores will result in errors in the final results obtained. One of the supports is the plan to develop a website-based design for a screening application for adolescent mental health disorders. Where the students and UKS supervisors are smartphone users and are capable and accustomed to using technology.

This is supported by the fact that the information system in an organization can be said to be a system that provides information to all levels in the organization whenever needed (Vonlihana Putri, 2019). This system stores, retrieves, changes, processes and communicates information received using an information system or other system equipment (Rahman, 2022). In line with Sutanto's research (2022), it is to help teenagers find out about their mental health independently and provide information and education about mental health disorders (Sutanto et al., 2022). In the process of monitoring student health as an effort to support student health education in schools, according to Lestari (2022), the implementation of Information and Communication Technology (ICT) governance has now become a need and demand for every public service provider agency. The role of ICT is increasingly important for efforts to improve the quality of school health services. Health education is a process of activities that provides health services for students in schools through education. Health services provided in schools are carried out by the School Health Unit (UKS) in the TRIAS UKS program, namely Health Education, Health Services and fostering a healthy school environment (Lestari, 2023).

This opinion is also supported by research results which state that the School Health Business Database information system is needed to support improving the health status of students. The three main programs or UKS triad include health services, health education, and fostering a healthy school environment. With the importance of the existence of UKS, it also helps community health centers and health services to monitor the growth and development of students, therefore the management of UKS requires designing a school health business system that aims to detect early health problems of students to facilitate the health monitoring process and the actions to be taken. to improve the level of school health (Fery Fadly & Fadilla, 2020).

Information Collection

Collecting information using interview techniques from various parties internally obtains the data that researchers need. Several themes were obtained from the results of the interviews, including: 1) Duties and Functions of UKS in Schools, 2) Obstacles in the data collection process for screening adolescent mental health disorders, 3) Expectations from UKS supervisors regarding the convenience of the screening process which can be done easily and quickly Data collection was carried out on students (SMAN 2 Ciamis, 2024).

The results of observations that researchers have made show that in reality, the tasks of UKS in the UKS Trias are Health Education, Health Services, and fostering a healthy school environment. The results obtained are not yet optimal in the Health Education process carried out, especially in the task of screening adolescent mental health as data collection and Health reports are carried out. In seeing the potential that exists from the research results, we also plan to design an Information System Application for Screening for Mental Health Disorders for Teenagers that can be applied in the school UKS program, which can improve and simplify the task of UKS supervisors and make it easier for students in the process of filling out questionnaires starting from creating an application design. Screening for adolescent mental health disorders, then equipping supporting facilities and infrastructure, so that it can optimize existing human resources so that it becomes an integrated system in the Website-based Information System for Designing Applications for Screening for Adolescent Mental Health Disorders.

Design Draft, Expert Validation and Application Revision

The revisions that have been carried out are aimed at improving the design design, overall revisions from media experts and material experts have been improved, including those from media experts and material experts, namely: Displaying information on tips for maintaining the mental health of teenagers and menus for filling out questionnaires in audio and visual form to make them more interesting for teenagers/students. The revision that has been corrected by the experts (media experts and material experts) is to add educational information on tips for maintaining mental health and also educational information about overcoming various problems with adolescent mental health disorders. Then add a questionnaire not only through visuals but also with audio media that students can click on directly so that each question can be heard and can also be read, thus adding to the appeal and clarifying the questionnaire given. This is in line with Sugiono's opinion in the stages of the Research and Development (R&D) research method (Sugiyono, 2016).

In line with research conducted by Rahman (2023) in the Development of Computer Based Inpatient Service Indicator Calculation at Ciamis Hospital research, it was stated that the research results obtained were a type of qualitative research with a research and development design at the fifth stage and level one. The assessment results from media experts obtained an average score of 4, including the 'feasible' category and material experts received an average score of 4.27 in the 'very feasible' category. The conclusion is that overall the application design can be implemented based on validation and assessment as well as input from experts (Material expert and media expert) (Rahman et al., 2021).

School Health Business is the main channel for health education in schools to improve healthy living abilities and form healthy living behavior, which will produce optimal levels of student health (Ero Haryanto & Mardiansyah Nugraha, 2023). The UKS program is implemented through the TRIAS UKS program, namely health education, health services, and fostering a healthy environment. By the role and function program as well as the TRIAS UKS

program, namely health education, health services, and fostering a healthy environment. That the School Health Business is the main channel for health education in schools to improve healthy living abilities and form healthy living behavior, which will produce optimal levels of student health. In this UKS health education program, all school members are involved, meaning this is not the task of the UKS administrator, but there are other parties involved, such as the education office, the nearest health center, and other parties who have collaborated and can help in this matter so that the TRIAS UKS program can run smoothly. smoothly to produce optimal levels of student health (Miranti, 2023).

CONCLUSION

The design of the Website-Based Adolescent Mental Health Disorders Screening Application that was developed has gone through a process of assessment, revision and improvement from experts and was declared suitable to be used as an application that helps simplify the process of Early Detection of Adolescent Mental Health Disorders.

ACKNOWLEDGEMENTS

We would like to express our gratitude for Risetmu Program Batch VII Majelis Dikti Litbang PP Muhammadiyah for funding this research (No. 0144/I.3/D/2024).

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