



Sakera Application as an Effort to Assess Mental Health and Self-Potential in Adolescents

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Abstract

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Mental health problems can be an obstacle to achieving psychological well-being. Mental health problems are susceptible to being experienced by anyone, including teenagers. Teenagers tend to be unable to understand their mental health condition and potential. The aim of this research is to find out: the creation and development of the SAKERA (Self-care, Knowing Excellent Potential and Realizing Dreams) application, teenagers' response (interest) in the Sakera application, and use of the Sakera application to help identify mental health problems and personal potential in adolescents. This research is research and development (R&D). The subjects in the research were 17 students at MA Al-Djufri Pamekasan. The results of this research and development show that, *first*, the Sakera application is "very suitable" to be used as an alternative application to determine mental health problems and the personal potential of teenagers. *Second*, teenagers' response (interest) in the Sakera application is in positive or high criteria. *Third*, the Sakera application can help to identify mental health problems and personal potential in teenagers. This research contributes to the use of mental health applications that can be used as an alternative in detecting early indications of mental health problems and identifying one's potential.

INTRODUCTION

Mental health refers to a state of well-being, both physically and psychologically. Mental health is characterized by self-awareness of one's potential, the ability to effectively cope with problems faced, the capacity to work or learn productively, and the ability to contribute positively to one's environment (Fakhriyani, 2019). Effective problem-solving is a portrayal of an individual's mental health. Additionally, mental

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health can also be illustrated by the ability to recognize one's potential as well as to make a positive contribution to the surrounding environment.

In fact, according to a WHO (World Health Organization) report in 2022, mental health issues have sharply increased (WHO, 2022). Globally, one in seven people experiences mental health problems, with adolescents and adults being particularly vulnerable (Ashari, 2023). Adolescence is a transition from childhood to adulthood. This unique phase is marked by various changes, both physically, emotionally, and socially, with issues such as poverty, abuse, or violence contributing to stress, such as pressure to fit in with peers, making adolescents vulnerable to mental health issues (WHO, 2021). This stage is also characterized as identity vs. identity confusion or the search for identity (Hurlock, 1980).

Mental health problems manifest through several indicators, including a sense of unhappiness in life and social relationships, feelings of insecurity, excessive fear and anxiety, lack of self-confidence, emotional immaturity, lack of understanding of one's personality, and lack of self-awareness (Fakhriyani, 2019). These indicators can negatively impact the quality of life, influencing individual behavior and responses when facing certain events or situations. Therefore, it is crucial to raise awareness about the importance of mental health. There is increasing awareness of mental health, yet strong stigma in society persists (Khansa, 2022). One alternative approach to address this issue is through online counseling or cybercounseling. Cybercounseling is professional counseling conducted in virtual spaces (Aini & Mudjiran, 2020), including through mental health applications. Currently, mental health apps are gaining popularity, including in Indonesia. These mental health applications are seen as capable of contributing to addressing mental health issues (Allifiandi K., 2023).

Based on a study by Syakarofath (2021), the mental health issues among adolescents in Pamekasan are quite serious, particularly in terms of conduct problems and peer problems. Similarly, a pre-study conducted by researchers at MA Al-Djufri found that several adolescents faced challenges in areas such as access to mental health information, recognizing various psychological pressures, understanding factors or risks of mental health disorders, limited knowledge of self-help, finding appropriate psychological assistance, and limited awareness of their potential. These challenges can be addressed through various methods, including online psychological interventions.

In recent years, many mental health applications have emerged as an alternative way to address mental health issues online (Cho et al., 2022; Guracho et al., 2024). In fact, mental health applications have been shown to reduce symptoms of depression (Luo et al., 2025). Additionally, there are domestic applications in Indonesia, such as Riliv, which facilitate users consulting personal issues or having counseling online (Saphira, 2022). Other prior research examined the design of mobile-based mental health applications using design thinking methods. The Blubox Health Kit app creates an innovative mental health application that individuals can use, allowing them to communicate without feeling judged (Theophillia & Chandra, 2023). However, some of these mental health applications focus solely on mental health conditions and

interventions, not on identifying individual potential.

The authors suggest a new way to spot mental health problems and the strengths of young people by creating the SAKERA (Self-care, Knowing Excellent Potency, and Realizing Dreams) app. The Sakera application is intended to help determine common mental health issues faced by adolescents, such as mild anxiety, depression, and other general mental health concerns, in light of the stigma surrounding mental health issues. Based on the background presented above, this research and development aims to, first, understand the creation and development of the Sakera application (Self-care, Knowing Excellent Potency, and Realizing Dreams). Second, assess the adolescents' response (interest) toward the Sakera application. Third, evaluate the use of the Sakera application in identifying mental health issues and self-potential in adolescents.

METHOD

This research is a research and development (R&D) study. The research and development (R&D) method is a research approach used to create or develop a product and evaluate the effectiveness of the produced product. In this research and development effort, the researcher conducts both research and the development of an application focused on mental health and self-potential. According to Borg and Gall (Sugiyono, 2017), the steps in research and development (R&D) include several phases listed in Figure 1.

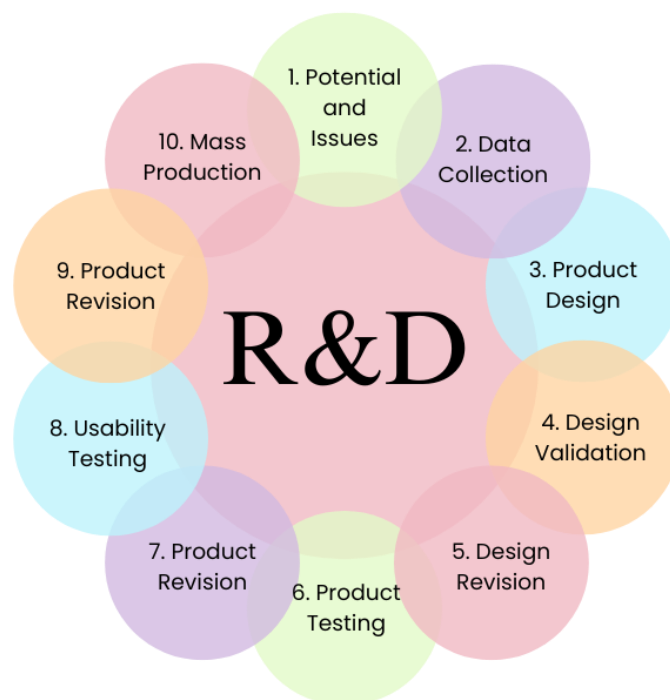


Figure 1. Research and Development (R&D) Steps

The subjects of this research and development study are students at MA Al-Djufri, totaling 17 individuals, selected using a random sampling technique. This technique was

chosen because every member of the population has an equal opportunity to be included as a research sample, leading to results that are representative of the entire population. Data collection methods employed include questionnaires, interviews, and documentation. The data analysis technique involves describing opinions, suggestions, and responses gathered from the data collection. Respondents are instructed to indicate their answers for each indicator by marking a checklist or tick (✓) on a range of numerical responses that reflect their opinions/perceptions, as shown in Table 1.

Table 1. Scoring of Respondents' Choices

Score	Choice/Response
4	Strongly Agree/Very Good
3	Agree/Good
2	Disagree/Not Good
1	Strongly Disagree/Not Good

The results of the questionnaire are then analyzed by calculating the percentage of scores obtained from each indicator, which is the total score for each indicator divided by the maximum score and multiplied by 100%, using the formula presented in eq. (1).

$$P = (f/N) \times 100\% \quad (1)$$

Eq. (1) defines P as the percentage, f as the frequency being sought or the obtained score, and N as the number of cases or the maximum score (Riduwan, 2018). Subsequently, the percentage that has been calculated is referenced against the eligibility scale categories presented in Table 2.

Table 2. Eligibility Scale

Score	Criteria
$0\% \leq X \leq 20\%$	Not Eligible
$20\% < X \leq 40\%$	Less Eligible
$40\% < X \leq 60\%$	Quite Eligible
$60\% < X \leq 80\%$	Eligible
$80\% < X \leq 100\%$	Very Eligible

Source: (Riduwan, 2018)

To determine the category of adolescent responses to the Sakera application and the impact (effectiveness) of the Sakera application in identifying mental health and self-potential, several categories are utilized, which are explained in greater detail in Table 3.

Table 3. Adolescent Response Criteria and Use of the Sakera Application

Score	Criteria
$85\% \leq \text{Response}$	Very Positive (Very High)
$70\% \leq \text{Response} < 85\%$	Positive (High)
$50\% \leq \text{Response} < 70\%$	Less Positive (Less High)
$\text{Response} < 50\%$	Not Positive (Not High)

Source: (Wulandari & Waryanto, 2012)

In addition, data was also collected using open-ended questions, allowing respondents to provide criticism, suggestions, or input for improvement. Descriptive analysis of the results was also used to determine the outcomes of the Sakera application development.

RESULTS AND DISCUSSION

This research and development led to several key results, including the creation of the Sakera application, how interested adolescents are in the Sakera application, and how the Sakera application is used to identify mental health issues and personal potential in adolescents.

Creation and Development of the Sakera Application

Based on the development conducted, the Sakera application was produced as both a web-based and an Android application. Below are the results of the creation and development of the Sakera web-based application and the Android application.

1. Creation and Development of the Web-Based Sakera Application

The Sakera web-based application was developed through Google Sites. This application offers an alternative way to understand mental health issues and self-potential among adolescents. The Sakera web-based application can be accessed via the following link: <https://sites.google.com/iainmadura.ac.id/sakera-iainmadura/home>. The Sakera web-based application consists of several menus, including "16 Personalities," which is based on the MBTI (Myers-Briggs Type Indicator) to identify the characteristics or personalities of each adolescent. This menu directs users to the 16 Personalities website (<https://www.16personalities.com/>), developed by NERIS Analytics Limited, Research and Product Development, Cambridge, UK.

Additionally, there is a "Mental Health" menu to identify indications of mental health issues in adolescents. This menu includes a Mental Health Inventory based on the MHI (Mental Health Inventory) by Veit and Ware and the Self-Reporting Questionnaire 29 (SRQ-29) developed by the World Health Organization (WHO). Furthermore, the "Learning" menu can be used to identify self-potential related to brain dominance, determining whether an individual is more left-brain or right-brain dominant. Left-brain dominance tends to relate to logical and analytical thinking, while right-brain dominance is associated with creativity and artistic traits. A brief overview of the Sakera web-based application interface can be seen in Figure 2.

2. Creation and Development of the Android-Based Sakera Application

In addition to creating and developing the web-based Sakera application, an Android-based Sakera application has also been developed to further facilitate users. The interface of the Android-based Sakera application can be viewed in Figure 3.

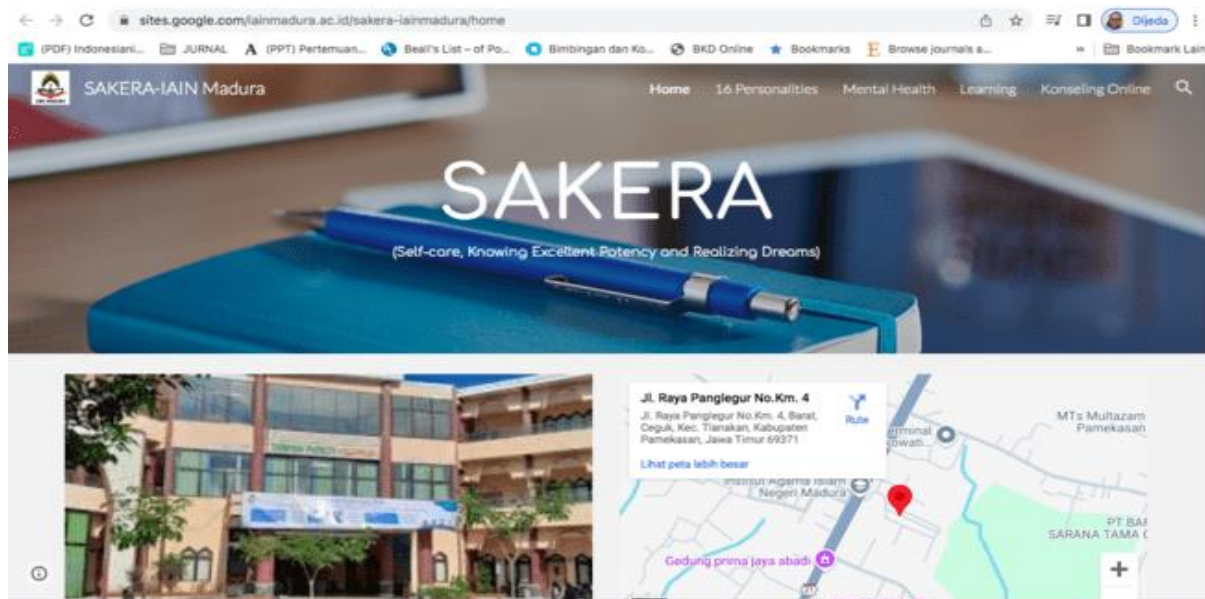


Figure 2. Display of Web-Based Sakera Application

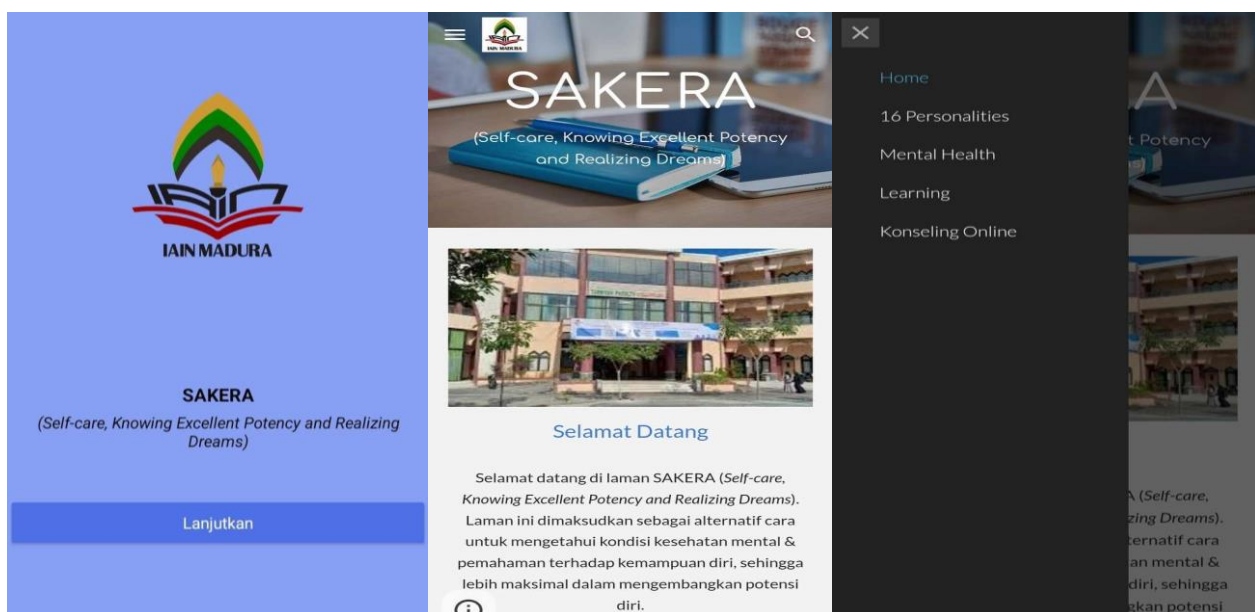


Figure 3. Interface of the Android-Based Sakera Application

After the application was developed, assessments were conducted by media experts and content experts. The results of the Sakera application evaluation by media experts and content experts are presented in Table 4 for the media expert evaluation results and Table 5 for the content expert evaluation results. The assessment by each expert consisted of two individuals providing their professional judgment.

Based on the data in Table 4, it can be concluded that the percentage evaluation by the two media experts, covering aspects of appearance, technical quality, and presentation, is 86.25%, which can be categorized as Highly Feasible for use as an alternative application to identify mental health issues and self-potential among adolescents.

Table 4. Results of Media Expert Evaluation

Criteria	Media Expert 1	Media Expert 2
Item 1	4	4
Item 2	3	3
Item 3	2	3
Item 4	3	3
Item 5	4	4
Item 6	4	4
Item 7	4	4
Item 8	2	3
Item 9	3	4
Item 10	4	4

Table 5. Results of Content Expert Evaluation

Criteria	Content Expert 1	Content Expert 2
Item 1	4	4
Item 2	3	3
Item 3	3	2
Item 4	4	3
Item 5	4	4
Item 6	4	4
Item 7	3	4
Item 8	3	3
Item 9	4	4
Item 10	4	4

Based on the data in Table 5, it can be observed that the percentage evaluation by the two content experts, covering aspects of content suitability, outcomes, and evaluation, is 88.75%, which can be categorized as Highly Feasible for use as an alternative application to identify mental health issues and self-potential among adolescents.

The Sakera application has undergone a validation process by experts in their respective fields, namely media experts and content experts. According to the data obtained from the validation process of the Sakera application by these experts, it is known that each expert states that the Sakera application is Highly Feasible for use as an alternative to identify mental health issues and self-potential among adolescents. This feasibility can be seen from several aspects evaluated by the experts according to the criteria/indicators.

Mental health applications can serve as an alternative to identify psychological issues faced (Kamilah, 2021). In a different application format, mental health applications can also be used as a form of mental health first aid and as a medium for mental health education (Ross et al., 2021). Mental health education can be used as a preventive measure against the emergence of mental health issues by increasing knowledge about mental health, which can also be carried out using application media (Indriani, 2024). Furthermore, the Sakera application includes several instruments that can be used to

identify mental health issues. These instruments include mental health instruments adapted from the Mental Health Inventory (MHI) by Veit and Ware (1983) (Rivera-Riquelme et al., 2019). Previous research states that the MHI can be used as a measure of mental health (Aziz & Zamroni, 2019). Additionally, the SRQ-29 present in the Sakera application can also be used as an alternative means to identify psychological issues (Safitri & Widodo, 2024). The series of questions presented in the SRQ-29 can be used for early detection and screening of mental health problems in adolescents (Sarfika et al., 2023).

In the Sakera application, in addition to identifying mental health problems, there is also a feature to identify self-potential, which relates to how adolescents understand their own characteristics. To determine personality characteristics and self-potential, the 16 Personalities or MBTI (Myers-Briggs Type Indicator) is used. This instrument can serve as an alternative to identify personality traits and self-potential, acting as a medium for self-development among adolescents (Laksono & Astuti, 2020). Self-development through understanding self-potential can also involve identifying brain dominance in adolescents. Therefore, the Sakera application also includes an instrument to determine adolescents' brain dominance. This is also supported by research showing that the use of the left and right brain can influence academic achievement (Wahyuningsih & Sunni, 2020) and students' problem-solving abilities (Fitra, 2022).

Based on the research data, the evaluation by media experts covering aspects of appearance, technical quality, and presentation is 86.25%, which can be categorized as Highly Feasible for use as an alternative application to identify mental health and self-potential among adolescents. Similarly, in the evaluation by content experts, the Sakera application is categorized as Highly Feasible for use as an alternative application to identify mental health and self-potential among adolescents, with a percentage of 88.75%. This evaluation includes aspects of content suitability, outcomes, and evaluation. Thus, from several aspects evaluated by media and content experts, it can be concluded that the Sakera application is Highly Feasible for use.

Responses (Interest) of Adolescents Towards the Sakera Application

This study also utilized an interest questionnaire to determine the responses/interests of adolescents towards the Sakera application. Adolescents, in this case, the students, were instructed to fill out a previously designed questionnaire, which consisted of aspects of feelings of happiness, interest, and attention. The completed interest questionnaire was then analyzed to determine the results. The data from the interest questionnaire is presented in Table 6 as tabular data and in Figure 4 as a diagram.

Based on Table 6 and Figure 4, it can be seen that the analysis results of adolescent responses/interest in each aspect yielded 87.94% in the aspect of feelings of happiness. The feelings of happiness aspect includes enthusiasm while working, comfort during the task, and completing the task happily and voluntarily. Next, the interest aspect obtained a percentage of 88.97%. This aspect of interest includes the desire to use the application, curiosity about the results, and the willingness to provide genuine answers. In the attention aspect, a score of 81.25% was achieved, with indicators focused on following

the provided instructions, attention during the task, and concentration while working. The criteria for these three aspects are classified as very positive, positive, and positive, respectively. This indicates that adolescents' interest in the Sakera application falls within the very positive criteria.

Table 6. Results of the Adolescent Interest Questionnaire

No.	Aspect	Percentage	Criteria
1	Feelings of Pleasure	87,94%	Very Positive
2	Interest	88,97%	Very Positive
3	Attention	81,25%	Positive

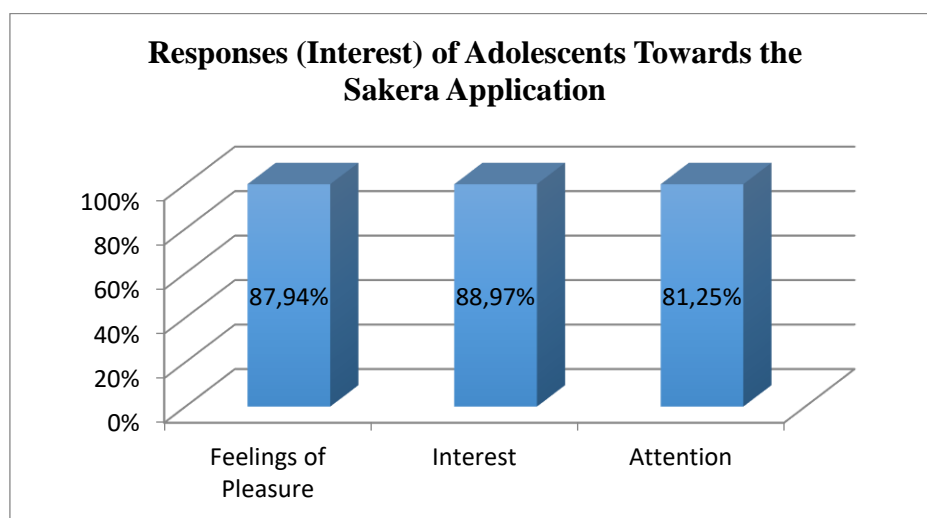


Figure 4. Adolescent Responses (Interest) Towards the Sakera Application

Similarly, previous research has shown that mental health applications attract users' interest in utilizing them (Kamilah, 2021). There is interest in using mental health applications (Bautista & Schueller, 2023). The need to seek psychological assistance through mental health applications is also positively correlated with the use of mental health applications (Borghouts et al., 2021). In other words, the interest in using mental health applications is demonstrated through their usage for seeking psychological help, identifying mental health issues, or even for mental health education.

Based on the discussion above, it can be concluded that the results of this research, supported by previous studies, indicate that adolescents exhibit interest in the Sakera application. The Sakera application can serve as a complement and support to existing mental health applications. Mental health applications are popular not only for their practicality but also to minimize the stigma associated with mental health issues, which includes negative labels or discriminatory attitudes towards individuals experiencing mental health problems.

Usage of the Sakera Application in Identifying Mental Health Issues and Self-Potential Among Adolescents

In addition to the interest questionnaire, a questionnaire on the usage of the Sakera application was conducted, which consisted of aspects of appearance, presentation, and

the application's ability to identify mental health, characteristics, and self-potential. The results of the questionnaire can be seen in Table 7 and Figure 5.

Table 7. Results of the Sakera Application Usage Questionnaire

No.	Aspect	Percentage	Criteria
1	Application Interface	86,27%	Very Positive
2	Presentation of Instruments	85,29%	Very Positive
3	Ability to Identify Mental Health Issues	88,60%	Very Positive
4	Ability to Identify Characteristics and Self-Potential	88,82%	Very Positive

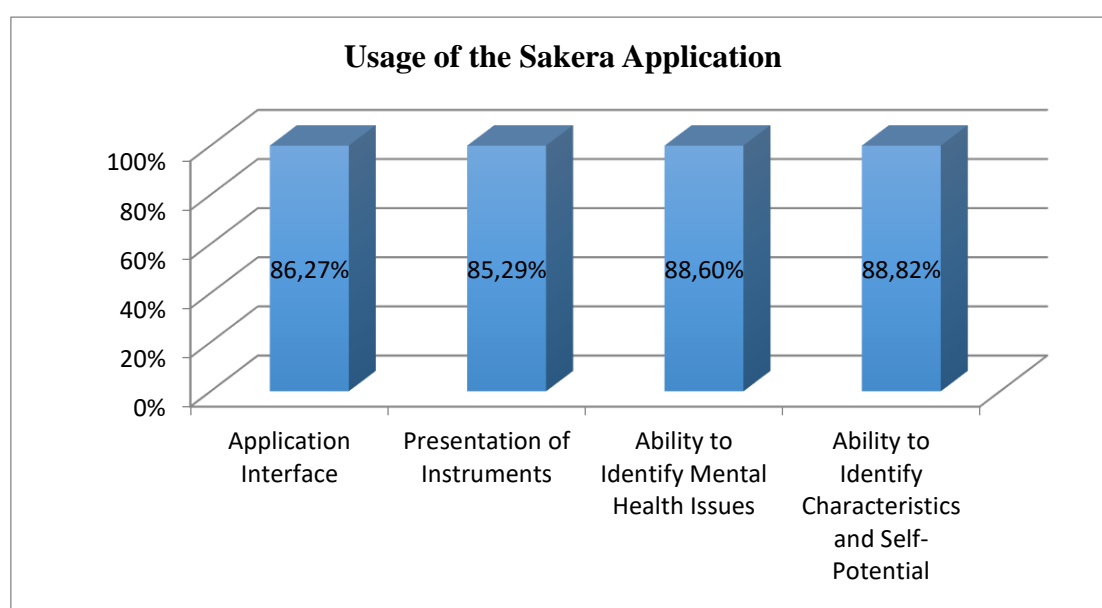


Figure 5. Usage of the Sakera Application

Based on Table 7 and Figure 5, the analysis of the Sakera application usage questionnaire indicates a percentage of 86.27% for the application appearance aspect, with the indicator reflecting an appealing and attractive application interface. In the aspect of instrument presentation, which includes statements and questions that are easy to understand, a percentage of 85.29% was obtained. These percentage results fall within the very positive criteria. For the aspects of the ability to identify mental health issues and characteristics/personality as well as self-potential, the percentages were 88.60% and 88.82%, respectively, both of which also fall under the very positive criteria.

Overall, all four aspects of the Sakera application usage questionnaire show a very positive criterion, indicating that the application performs very well. Additionally, based on interview results supporting the research, it is evident that the Sakera application can help in identifying mental health and self-potential among adolescents. This demonstrates that the Sakera application is capable of identifying mental health issues and self-potential in adolescents.

This is further emphasized by previous research indicating that mental health applications are used for various psychological disorders, functioning to enhance

awareness, social support, and address symptoms of mental health issues (Kamilah, 2021). Moreover, other studies have shown that perceived stress and the search for psychological assistance correlate positively with the use of mental health applications (Borghouts et al., 2021). Mental health applications can be utilized by individuals seeking psychological help or coping with stress they are experiencing.

Several mental health applications have demonstrated their effectiveness in diagnosing mental health conditions, improving symptoms, mood, or self-management (Larsen et al., 2019). However, there are also studies indicating that evidence for the effectiveness of mental health applications is still lacking, as many do not provide proof that they can effectively address psychological issues (Marshall et al., 2019).

The explanations from previous studies and this research reinforce that mental health applications are effective for identifying mental health issues. Furthermore, there are also mental health applications that can assist in addressing mental health problems, although some have yet to show evidence of effectiveness.

This research and development exhibit advantages over previous studies related to the development of mental health applications; the Sakera application is not only capable of identifying mental health issues but also serves as an alternative web-based application to understand characteristics/personality and self-potential, especially among adolescents.

CONCLUSION

First, the Sakera web-based application is categorized as "highly feasible" to be used as an alternative tool to help identify mental health issues and self-potential among adolescents. Second, the overall response (interest) of adolescents toward the Sakera application indicates a positive or high response criterion. Third, the usage of the Sakera application by adolescents shows very positive results, falling within the very high criteria. Therefore, it can be concluded that the Sakera application can assist in identifying mental health problems and self-potential among adolescents.

The results of this research and development are expected to contribute to the body of knowledge related to mental health and self-potential. Additionally, the creation and development of the Sakera application are anticipated to serve as an alternative means to identify mental health issues and understand self-potential, particularly for adolescents who are in the stage of Identity vs. Identity Confusion. However, there are several limitations in this research and development, so constructive suggestions and feedback are welcomed to achieve even better results.

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