RESEWA: A Digital Solution for Supporting Adolescent Mental Health through Early Detection and Education

Khamida Khamida [1*], Fifi Khoirul Fitriyah[2], Andikawati Fitriasari[3], Iskandar[4]

[1,3,4]Faculty of Nursing and Midwifery, Universitas Nahdlatul Ulama Surabaya, Indonesia
[2]Faculty of Teacher Training and Education Universitas Nahdlatul Ulama Surabaya, Indonesia
[*]Corresponding author: khamida@unusa.ac.id

ABSTRACT

The dynamic interplay of social, technological, and psychological pressures has significantly contributed to the rising prevalence of mental health issues among adolescents, including depression, anxiety, eating disorders, and social media addiction. This study aimed to design and assess the RESEWA (Remaja Sehat Jiwa) app as a supportive tool for enhancing mental health among adolescents. A Research and Development (R&D) design was employed, involving 185 adolescents under the care of Pandawa Nusantara. The study followed a five-phase process: (1) conducting a descriptive exploratory survey, (2) designing the RESEWA app, (3) app testing, (4) training on app usage, and (5) conducting validity and reliability assessments. Findings indicated that the RESEWA app was highly accessible and user-friendly, with usability tests showing strengths in simplicity, efficiency, memorability, low error rates, and overall user satisfaction. Adolescents found RESEWA beneficial for early mental health assessments and accessing educational and consultation resources, all contributing to improved mental health outcomes.

Keyword: Adolescent, Mental Health, Digital Health App, Early Detection, RESEWA

1.   INTRODUCTION

Adolescence is a unique and formative time. Physical, emotional and social changes, including exposure to poverty, abuse or violence can make adolescents vulnerable to mental health problems (Susanti et al., 2023). Adolescence is an important period for developing social and emotional habits that are important for mental well-being. In the current millennial era, there are various mental health problems experienced by adolescents. Complex social, technological and pressure changes have led to an increase in mental health problems in adolescents, including depression, anxiety, eating disorders and excessive use of social media. The rate of depression and anxiety in adolescents has increased along with the development of technology and social media (Twenge, 2020). According to a study published in the journal Child and Adolescent Psychiatry and Mental Health in 2019, high academic pressure, unrealistic expectations and constant social comparison through social media can contribute to the development of mental health problems in adolescents (Run Zhi Zhu, 2015).

The prevalence of mental health disorders in adolescents in the world today is estimated at around 10-20%, with anxiety disorders, depressive disorders, and behavioral disorders being the most common disorders found (WHO, 2024). In Indonesia, the results of the 2018 Riskesdas survey showed that the prevalence of mental health disorders in adolescents aged 10-18 years was 9.8%. Among them, the prevalence of depression was 5.2%, anxiety disorders 4.6%, and other mental health disorders 2.5%. (Kementerian Kesehatan RI Badan Penelitian dan Pengembangan, 2018). Meanwhile, the results of the 2019 Community Mental Health survey conducted by the East Java Provincial Mental Health Center showed the prevalence of mental health disorders in adolescents aged 13-18 years was 14.5%, with a prevalence of depression of 9.4% and a prevalence of anxiety

disorders of 6.2% (Pusat Data dan Informasi, 2020).

Mental health disorders in adolescents are influenced by several factors, including: genetic, environmental, psychological, social, and biological (Ermis et al., 2022). Environmental factors that can influence the occurrence of mental health disorders in adolescents include: trauma, stress, experiences of violence, experiences of rejection or discrimination, and poor economic conditions. Psychological factors that can influence the occurrence of mental health disorders in adolescents include: low self-esteem, lack of self-confidence, difficulty in dealing with stress, and difficulty in controlling emotions. Social factors that can influence the occurrence of mental health disorders in adolescents include: social isolation, poor social relationships, and lack of social support from family and friends. Biological factors that can influence the occurrence of mental health disorders in adolescents include: work accidents, chronic diseases, and dependence on psychoactive substances (Kemenkes, 2020).

The impact of adolescent mental disorders includes academic, psychosocial, physical, emotional and economic impacts (WHO, 2024). Adolescents who experience mental health disorders will have difficulty learning and achieving academic achievement, causing difficulties in pursuing a career, which will affect the quality of life in the future. Social relationships and social problems such as social isolation, difficulty in making and maintaining relationships with friends, stigma and discrimination are the psychosocial impacts of adolescents who experience mental health disorders. Physical, emotional and economic impacts such as experiencing sleep problems, difficulty eating, anxiety, sadness, anger, despair can also be experienced by adolescents with mental health disorders, for this reason efforts to prevent mental health disorders in adolescents are very necessary, one of which is early detection of adolescent mental health disorders (Dzil et al., 2023).

Early detection of mental health disorders is one of the efforts to prevent mental health disorders in adolescents. In this millennial era, early detection of mental health in adolescents is very important. This is due to complex social, technological, and pressure changes that can have a negative impact on adolescent mental health. Understanding and early detection of mental health problems in adolescents can help prevent more serious complications later on. The importance of early detection of mental health in adolescents can be seen from various recent studies. According to research conducted by the United States Department of Health and Human Services, the number of adolescents experiencing mental health disorders such as depression, anxiety, and eating disorders continues to increase. Adolescents who do not get proper treatment for their mental health problems tend to experience more serious problems in adulthood (U.S. Department of Health and Human Services, 2019). Excessive use of social media can have a negative impact on adolescent mental health. Research by the Royal Society for Public Health in the UK found that social media can increase levels of anxiety, depression, and feelings of loneliness in adolescents.

The RESEWA application is designed as an innovative solution to provide the support and understanding needed by teenagers, with the RESEWA application teenagers can easily do early detection related to mental health conditions in themselves. Through proper early detection, teenagers get the treatment and support needed to overcome their mental health problems early on. This will help teenagers develop healthy coping skills and prevent more serious complications from occurring in the future. This study aimed to design and assess the RESEWA (Remaja Sehat Jiwa) app as a supportive tool for enhancing mental health among adolescents.

2. METHOD

The research design used Research and Development (R&D), The study recruited 185 adolescents fostered by Pandawa Nusantara, aged between 13-18 years, with all participants providing informed consent. The stages of the research carried out consisted of five stages:
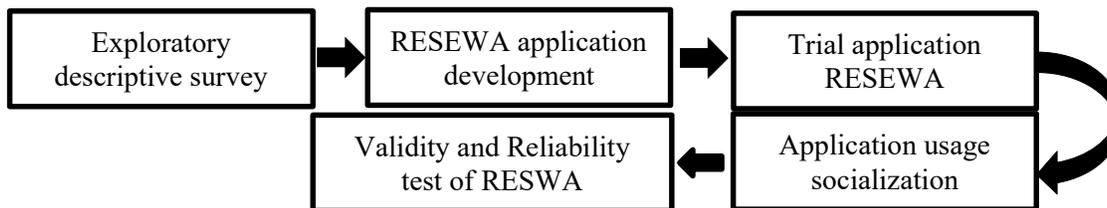
Figure 1. Stage of Research

1.   Exploratory descriptive survey

A descriptive exploratory survey is a step to conduct a program study and a preliminary study on the level of knowledge of adolescents regarding mental health by providing questionnaires to respondents. The results of filling out the questionnaire become the initial data used by researchers in determining strategic issues for the next research stage.

2.   RESEWA application development

This step is a research step that begins with the presentation of strategic issues obtained from the exploratory descriptive survey and then discussed with experts including mental health nurses and the IT team.

3.   Trial application RESEWA

After developing the application, the researcher conducted a trial on the RESEWA application.

4.   Application usage socialization

Conducting socialization of the use of the RESEWA application to adolescents in increasing knowledge related to adolescent mental health, early detection of adolescent mental health, mental health education and online counseling services. Socialization is carried out to adolescents who will be respondents in this study

5.   Validity and reliability test of the RESEWA

At this stage, respondents are given a RESEWA application assessment questionnaire using a usability test that includes ease, efficiency, ease of remembering, error rate and satisfaction level.

6.   RESULT AND DISCUSSION

1.   Exploratory descriptive survey

Table 1. Result of descriptive survey

Characteristic of respondent	Frequency (n)	Percent (%)
AGE		
Early teen	36	19,5
Middle teen	134	72,4
Late teen	15	8,1
LEVEL OF SCHOOL		
Junior high school	17	9,2
Senior high school	168	90,8
GENDER		
Female	168	90,8
Male	17	9,2
RESULT OF SCREENING		
Mental Emotional Health	57	30,8
Mental Emotional Disorders	128	69,2

The survey revealed that a majority of participants (72.4%) were in middle adolescence, with 69.2% exhibiting mental emotional disorders. High school students (90.8%) and female participants (90.8%) showed the highest prevalence of mental health concerns.

2.   RESEWA application development

Table 2. Strategic Issue

No	Data	Strategic Issue	Expert Consultation Results	Researcher's Opinion
1	The results of the study showed that almost all respondents were in middle adolescence, the cross tabulation results showed that middle adolescence contributed the largest percentage (51.9%) or as many as 96 middle adolescence experienced emotional mental disorders	The middle adolescence phase is the highest in experiencing emotional mental disorders	Support from health workers is needed so that adolescents do not fall into maladaptive behavior	Middle adolescence is an age with an identity crisis or difficulty finding one's identity. Where at this time, an adolescent is very vulnerable to experiencing mental health disorders due to the many pressures and demands faced such as getting the wrong perception from social media. or pressure from the surrounding environment
2	The results of the study showed that almost all (90.8%) of respondents were studying high school/equivalent. The cross-tabulation results showed that the largest percentage of teenagers studying high school (69.2%) experienced emotional mental disorders	High school education had the highest rate of emotional mental disorders	Increasing support from health workers and parental support is important because at this stage the emotional condition of teenagers is easily influenced by their peer environment	Adolescents with high school education have more emotional mental disorders which may have been caused by the lack of early detection of adolescent mental health during junior high school so that many cases were found when they entered high school
3	The results of the study showed that almost all (90.8%) of the respondents were female. The cross-tabulation results showed that the largest percentage of female adolescents (52.9%) experienced emotional mental disorders	Females experienced the highest emotional mental disorders	Health worker support is needed so that adolescents do not fall into maladaptive behavior	Female adolescents are more likely to suffer from emotional mental disorders than males, because the personality types between females and males are different, most females are more expressive in expressing the problems they experience compared to males who mostly act indifferent to the problems they experience.

3.   Trial application RESEWA

RESEWA is an application specifically designed to provide easily accessible and useful solutions for teenagers in dealing with mental health problems. RESEWA application allows teenagers to easily perform early detection related to mental health conditions in themselves. This application can be accessed via https://resewa.com.
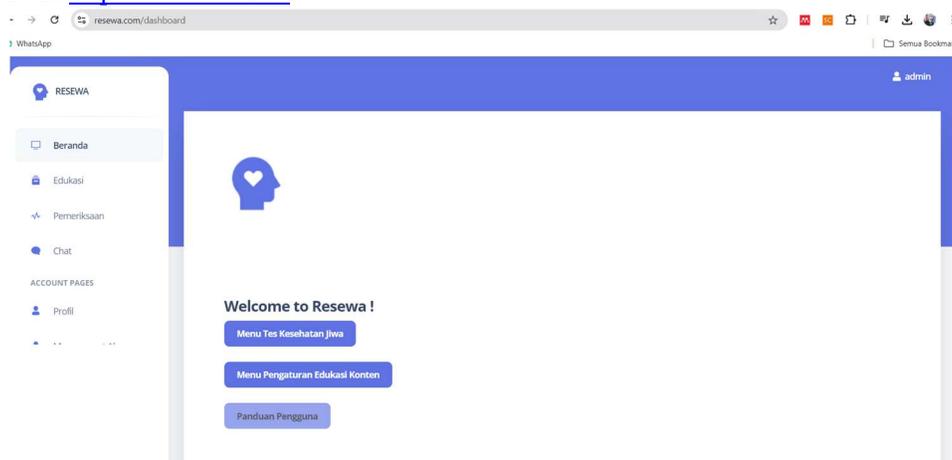

Figure 2. Front view of the application

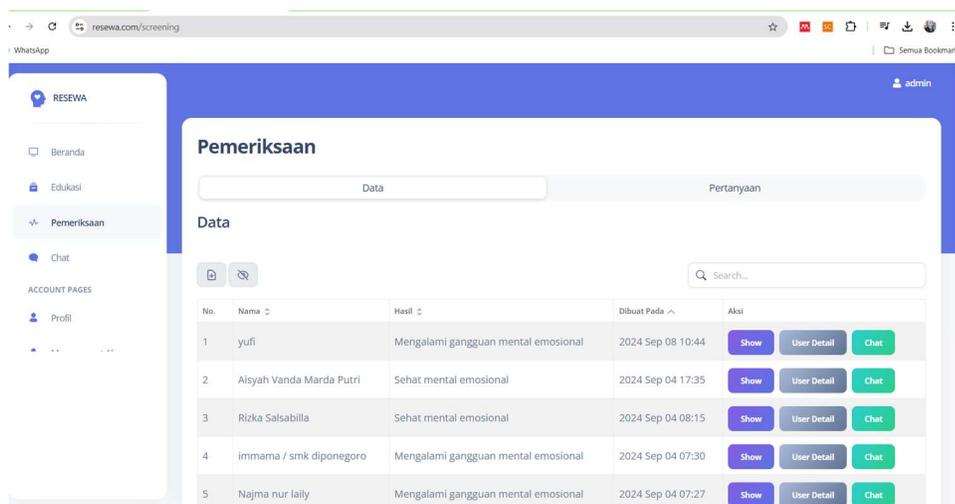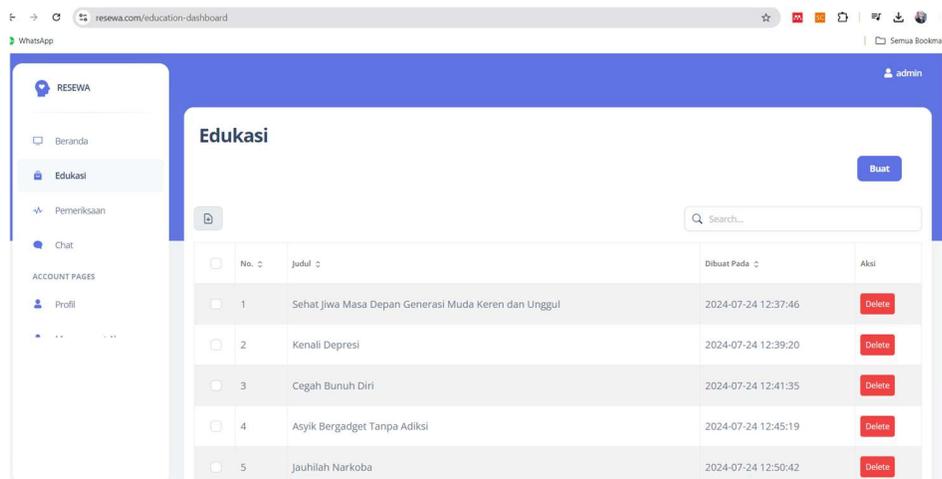
Figure 3. Adolescent mental health screening view

Figure 4. Mental health education display from health workers

4.　　　　Application usage socialization

Before the researcher conducted the socialization of the RESEWA application, the researcher conducted a trial first which was conducted on the Pandawa Nusantara fostered teenagers, then when no errors were found during the trial period, the researcher conducted socialization of the application using a guidebook created by the researcher which was distributed to respondents via WhatsApp groups, the socialization conducted by the researcher contained an explanation of the benefits of conducting screening, creating an account, how to fill in the screening questions and an explanation of each feature available on RESEWA to respondents.

5.　　　　Validity and reliability test of the RESEWA

The results of measuring the validity and reliability of RESEWA are in the good category, so this application has a good level of ease, efficiency, and satisfaction for teenagers.

Usability testing demonstrated that RESEWA was highly accessible and user-friendly. Adolescents reported ease in navigating the app, which contributed to a high satisfaction rate. Additionally, the app's intuitive interface minimized errors and enhanced memorability.

The study highlights the value of digital interventions like RESEWA in addressing adolescent mental health issues. Digital tools offer scalable, cost-effective solutions for early screening and mental health education, aligning with previous findings on the role of technology in preventive health. The high usability and satisfaction rates support RESEWA's potential as a resource for improving adolescent mental health.

7. CONSCLUSION

The RESEWA app proves to be an effective, accessible tool for early mental health detection in adolescents. By offering screening tools, educational content, and consultation services, RESEWA enables adolescents to seek early support and develop coping mechanisms. The app holds promise for broader applications and may serve as a model for similar digital health interventions.

8. ACKNOWLEDGEMENT

9. REFERENCE

Dzil, Kamalah, A., & Nafiah, H. (2023). Gejala Mental Emosional dan Upaya dalam Meningkatkan

Kesehatan Jiwa Remaja. *Jurnal Keperawatan Berbudaya Sehat*, *1*(2), 2986–8548. http://jurnal.unw.ac.id/index.php/JKBS

Ermis, Suryana, Amrina, Ayu, Alawiya, & Kasinyo. (2022). Perkembangan Remaja Awal, Menengah Dan Implikasinya Terhadap Pendidikan. *Jurnal Ilmiah Mandala Education (JIME)*, *8*(3).

Kemenkes, R. (2020). Buku Pedoman Penyelenggaraan Kesehatan Jiwa di Fasilitas Kesehatan Tingkat Pertama. *Direktorat Promosi Kesehatan Kementerian Kesehatan RI*, 5–23.

Kementerian Kesehatan RI Badan Penelitian dan Pengembangan. (2018). Hasil Utama Riset Kesehatan Dasar. *Kementrian Kesehatan Republik Indonesia*, 1–100.

Pusat Data dan Informasi, K. R. (2020). Indonesian Health Profile 2019. In *Indonesian Ministry of Health Information Center*.

Run Zhi Zhu, X. L. X. (2015). The Influence of Social Media on Sleep Quality: A Study of Undergraduate Students in Chongqing, China. *Journal of Nursing & Care*, *04*(03). https://doi.org/10.4172/2167-1168.1000253

Susanti, Y., Mega Pamela, E., & Haryanti, D. (2023). Gambaran Perkembangan Mental Emosional Pada Remaja Description Of Emotional Mental Development In Adolescent. *Buku Proceeding Unissula Nursing Conference*, *ISBN 978-602-1145-69-2*).

Twenge, J. M. (2020). Increases in depression, self-harm, and suicide among U.S. adolescents after 2012 and links to technology use: Possible mechanisms. *Psychiatric Research and Clinical Practice*, *2*(1), 19–25. https://doi.org/10.1176/appi.prcp.20190015

U.S. Department of Health and Human Services. (2019). *Mental Health and Substance Use Disorders*. https://opa.hhs.gov/adolescent-health?adolescent-development/mental-health-and-substance-use/index.html

WHO. (2024). *Mental health of adolescents*. https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health