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Correlation of Virtual Classroom Intervention with Help Seeking Behavior in Adolescents with Anxiety and Depression in Ketapang Regency

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Abstract: There were 9,162,886 cases of depression with a prevalence of 3.7 percent among Indonesian adolescents. However, there is no specific intervention to prevent and overcome this problem, especially in the field of mental health promotion. This study aims to determine the effect of health education through virtual classes on anxiety and depression on the knowledge and attitudes of adolescents in Ketapang Regency. The method used was quasi experimental pre and post with control and intervention groups. The population in this study were high school/equivalent adolescents in Ketapang Regency with a total sample of 80 divided into 40 control groups and 40 intervention groups. The variable used is help-seeking behavior. The intervention used is a Virtual Class involving 2 professional experts in the field of adolescent mental health. The intervention was carried out 2 times in a duration of 14 days. Before the intervention, a pretest test was conducted. The media used are cellphones, laptops or gadgets that can operate Zoom Meeting. Analysis of results using univariate, bivariate and multivariate tests with the help of the SPSS version 25.0 application. The results of the analysis showed that there were differences in behavior in respondents before and after the intervention in the intervention group. The behavior variable of the intervention group before and after the intervention has a significance value of 0.000 with the Wilcoxon test, which means that there is a difference in value after the intervention. There was an improvement in behavior. Overall, the behavior of the intervention group has increased compared to the control group which tends to stagnate. After the Spearmann correlation analysis test was carried out, the results of the behavior variable were found to be 0.008 with a correlation coefficient of 0.416. These results indicate that in the behavior variable there is a fairly good relationship. Virtual classes for high school teenagers in Ketapang improve behavior and have a fairly close relationship.

Keywords: Adolascent; Anxiety; Depression; Virtual classes

Introduction

Mental health is everyone's human right, according to the World Health Organization (WHO) to achieve well-being in life, one must be free from mental problems. About 1 billion people worldwide experience mental health disorders, and every 40 seconds 1 person dies by suicide (Fitri et al., 2019). Mental emotional disorders are states of individuals who experience emotional changes and under certain circumstances occur over a long period of time can develop and become pathological states. The inability to resolve mental and emotional health disorders properly will have a negative impact on the development of adolescents in the future,

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especially on the formation of their character which can trigger mental emotional development disorders (Fitri et al., 2019; Sutrisminah et al., 2025).

WHO states that many of the most common mental health problems occur in childhood and early adolescence. Recent studies have shown that mental health problems, especially depression, are the leading cause of adolescent disease burden. Special treatment from all directions is needed for the recovery of adolescent depression because it is not only a serious behavioral disorder that affects the emotions and attitudes of adolescents. The process starts with stress and can progress to depression. Depression is a mental disorder that most often begins with symptoms such as loss of interest or pleasure, decreased energy, low self-esteem or guilt, anorexia or sleep problems, fatigue, and difficulty concentrating. It can be long-lasting or recurrent (Kessler et al., 2009).

Worldwide, ten percent of children and adolescents experience mental disorders and most do not seek help or receive treatment. According to the School-Based Health Survey in Indonesia, 20.6% of adolescents have been bullied and 5.2% of adolescents have suicidal thoughts. The results of research by the Faculty of Health, University of Indonesia stated that they had experienced symptoms of anxiety, and 88% had experienced symptoms of depression in dealing with problems during this age. In addition, of all respondents, 96.4% stated that they did not understand how to deal with stress due to the problems they often experienced (Kaligis et al., 2021). Then other sources also show an increase, with 52 million cases of women experiencing anxiety disorders in 2020 and more than 35 million cases in the previous year experiencing major depression (Kessler et al., 2009).

In its development, emotions in adolescents often become unstable. Adolescents often find it difficult to control their emotions due to the major changes experienced during this transitional period. The crisis of adolescent development leads to the formation of a sense of identity (Byers et al., 2022; Widyasih, 2023). Identity formation in adolescents is influenced by peer groups that will make adolescents feel accepted and provide status for them (Lorimy et al., 2021; Mawaddah & Prastya, 2023). During this period, adolescents will be faced with various problems that will affect their ability to achieve their developmental tasks. The inability of adolescents to overcome obstacles properly can have an impact on the onset of mental emotional health problems (Rowe et al., 2014; Sutrisminah et al., 2025).

Family, peers, school, society, and social media are some of the factors that can cause mental emotional problems in adolescents (Lorimy et al., 2021; Widyasih, 2023). Nearly half of all mental health disorders including anxiety, depression, and aggressive behavior are projected to emerge by the age of 14 worldwide, with prevalence rates around 10-20%, unfortunately, most of those experiencing these conditions do not receive sufficient treatment and help (Kessler et al., 2009).

There are several factors that facilitate or hinder help-seeking behavior: a preference for informal sources, such as friends and family; fear of how others will react to their story; and lack of knowledge about where to seek help (Rowe et al., 2014). Only 2.6% of adolescents with mental health problems accessed mental health facilities or counseling to help address emotional and behavioral problems (Gautam et al., 2024).

Another study found barriers associated with help-seeking behavior included lack of information, cost, embarrassment, time, and distance distrust of health professionals (Rasyida, 2019). Psychologically, in this phase of adolescence, what they face can be challenging for adolescents, but they may face difficulties as they develop that affect their mental health and well-being. The demands of living independently and adjusting to the many changes in life, such as living on their own, managing their own expenses, and adapting to a new school or workplace can be a precipitating factor for mental health problems at this time. New relationships, friendships or intimate relationships, are also formed (Mawaddah & Prastya, 2023; Paulich et al., 2021).

Research conducted by Ryemi Do et al. shows that only one in four adolescents with depression or one in three adolescents with mental illness seek help, otherwise adolescents who do not seek help will be at risk of drug abuse, risky behavior, decreased quality of life, and decreased life expectancy (Do et al., 2019; Rowe et al., 2014).

Based on 2023 data from the West Kalimantan Provincial Health Office, the prevalence of emotional mental health disorders was reported at 10.83%. The prevalence of depression in individuals aged 15 years and over reached 10.3%. Meanwhile, based on data from the Ketapang Regency Health Office from January to April 2024 for the prevalence of emotional mental health disorders in adolescents in Ketapang Regency, it was reported that cases of anxiety disorders were the fourth ranked health problem after schizophrenia, acute psychotic disorders and child development disorders with a number of 72 cases or 9.3%, 2 suicide attempts, 16 depressive disorders or 2%.

One of the main problems found in the West Kalimantan region is the difficulty of access to Mental Hospital (RSJ) facilities located in Singkawang City with a distance of 151 km / 3 hours by road from the capital city of Pontianak, and for the distance from Ketapang Regency to Singkawang city, which is 710 KM with a

travel time of 12-15 hours by land transportation, around 8-9 hours by water transportation, and 40 minutes by air transportation with varied costs and tends to be expensive. In addition, another problem found is the limited human resources of mental experts/skilled such as mental specialists and psychologists or counselors.

In order to prevent adolescent mental emotional problems or disorders such as stress and depression, interventions can be provided through learning and providing health promotion about mental emotional health (Nisa et al., 2023). Through health promotion, it is expected to reduce the occurrence of anxiety, depression and other emotional problems with increased knowledge of adolescents about mental health. Health promotion activities that will be carried out must of course be supported by the use of appropriate methods and media so that health information is effectively conveyed to the target (Maurer & Smith, 2012).

Generation Z children, who were born in an age that is sophisticated in technology so that the learning styles and media used in learning are very general and visual, of course, making Health education techniques must be adjusted, to be more relevant to current conditions (Sandiwarno, 2016). In addition, the average value of learning independence using virtual media can increase understanding by 65.28% (Putrawangsa & Hasanah, 2018). In addition, it is mentioned that the use of learning media with virtual class-based e-learning using Google Classroom makes it easy for users to get a lot of material from the internet. Virtual-based learning makes activities take place interactively between speakers and participants (Ernawati, 2022; Sultania et al., 2019).

The use of audiovisual media is effective and recommended as a medium in health promotion activities as an effort to increase one's knowledge and attitudes (Monica & Fitriawati, 2020). Likewise, other studies say that health education through audiovisuals is effective in increasing knowledge about PHBS in health cadres (Nuramalia, 2022; Yulinda, 2018).

The use of methods combined with various media can make it easier for targets to receive the material presented (Liasari et al., 2023). Based on the condition of limited human resources in the Ketapang Regency area and from the results of a preliminary study conducted with 15 adolescents in Ketapang Regency, one of the efforts to increase adolescent knowledge can be carried out health education activities on anxiety and depression through virtual classes, so that together with competent resource persons it is hoped that adolescents can be exposed to mental emotional health knowledge optimally and with virtual implementation adolescents at the sub-district level also get the opportunity to gain knowledge with appropriate resource persons.

Increasing adolescents' knowledge about mental emotional health can be done through health education which is expected to increase adolescents' knowledge and attitudes in an adaptive direction. This health promotion model illustrates the multidimensional nature of humans to increase their ability to apply behavioral transformation to benefit themselves (Saharoh et al., 2022). Good self-utilization will provide positive results for their health. Adolescents are finally able to change positive attitudes to improve their health to become more adaptive and mentally healthy (Pebrianti et al., 2024).

Health education to adolescents about mental emotional health based on virtual classes is used as one of the variations in the implementation of health promotion. This study aims to analyze the relationship between the provision of virtual class interventions and help-seeking behavior about emotional mental health in adolescents who experience anxiety and depression in Ketapang Regency.

Method

This study used quantitative research with a pre and post-test quasi-experimental research design and involved a control group and an intervention group. The research was conducted in Ketapang Regency from September 2024 to February 2025.

The population in this study were high school adolescents in Ketapang Regency according to existing secondary data, with SDQ (Strengths and Difficulties Questionnaire Test) results in the Borderline or Abnormal category of 530 people (from 24 Puskesmas).

Sampling in this study used several sampling techniques, starting with a sample quota from data at 24 Puskesmas, then continued with simple random sampling or cluster sampling techniques until a sample of 80 people was found to be formed into 2 groups, namely 40 people as an intervention group, and 40 people as a control group.

Prior to the study, a needs analysis was conducted to implement the appropriate intervention. The needs analysis was conducted in Ketapang Regency using interview techniques to determine the needs of the expected health education model according to the conditions in the Ketapang area. Furthermore, a pretest was conducted first in both groups (intervention and control groups) using a questionnaire to measure respondents' help-seeking behavior before treatment. Then the intervention group was given health education through virtual classes with a psychologist using PPT media, question and answer discussions and instruction books. The virtual class activities were carried out twice with a duration of 90 minutes per meeting, the span of

the first and second meetings was 14 days. The activity begins with the delivery of material by a psychologist resource person for 30 minutes, followed by discussion and questions and answers for 60 minutes. To facilitate the delivery of information on the formation of virtual classes, a WA Group was formed as well as useful for providing materials, counseling manuals and virtual class invitations. In addition, the WA Group formed is useful for conveying information related to anxiety and depression management such as educational videos, mental emergency aid flow, relaxation techniques. Completion of the pre-test questionnaire was carried out the day before the virtual class in the intervention group and control group. The post-test questionnaire was completed after the zoom meeting and the second post test was conducted after 12 weeks after the virtual class activities were carried out.

The control group was not given an intervention in the form of health education through virtual classes, but respondents were only given the same counseling manual as the intervention group and PPT material on adolescent mental emotional health (anxiety and depression) through WA Group.

The instruments in this study are questionnaires, cellphones, stationery, pocket books to recognize anxiety and find solutions, material from experts delivered by power point and software. The questionnaire consists of 8 statements of help-seeking behavior in adolescents with anxiety and depression that have passed the validity and reliability tests.

Instrument testing was conducted on 30 adolescents in Pontianak who had similar conditions to the respondents. The initial statement items were 14 items. After the validation test, there were 6 invalid items with a p-value> 0.05, so they were removed from the list. Furthermore, the reliability test was carried out with the provisions of reliability if the value was more than 0.6. As a result, 8 items passed the test.

Data analysis using SPSS version 25.0 includes univariate and bivariate analysis. Univariate analysis was used to describe the characteristics of respondents and differences in each variable in the control and intervention groups. While bivariate analysis was used to analyze the relationship between virtual classes and measured variables. The formula used was the comparison of two sample proportions, this formula was chosen because this study was conducted to compare between two groups, namely the intervention group and the control group. Before analysis, normality test was conducted first. It is known that in this study, all data are not normally distributed so that quantitative analysis uses Chi-Square, Mann-Whtney and Wilcoxon tests.

This research has passed the ethical test through the Ethics Commission of the Faculty of Public Health Sciences, Diponegoro University Semarang with No. 375/EA/KEPK-FKM/2024.

Result and Discussion

Results of Needs Analysis

Based on the results of interviews related to the analysis of adolescent mental health needs including material, methods and presenters, the results of the material needed are about definitions, signs and symptoms, prevention, prevention, and how to seek professional help. The material expected by informants is material that has many pictures and videos. Regarding the material provided, informants need media that can be stored and re-read in the form of pocket books or leaflets.

The pocket book uses the Pocket Book Recognize Anxiety and Depression Find Solutions adapted from the Ministry of Health. The pocket book media was tested to several experts regarding benefits, feasibility, function, maintenance and ease of access. Experts involved for the assessment were Clinical Psychologist UPT Disability Services and Assessment Center Pontianak City and Psychologist Tesla Therapy Center Pontianak City for a team of experts from mental health, especially in children. Experts for health print media design involved the Health Promotion and Community Empowerment Section of the Public Health Division of the Ketapang District Health Office. While the Information Technology (IT) expert involved the Head of the Public Communication Division of the Ketapang District Communication and Information Office.

The method used is a virtual or online class using the zoom meeting application with a Forum Group Discussion model with the hope of active discussion. To manage the information to be provided to make it simpler, the author formed a WhatsApp Group containing resource persons or presenters, writers and respondents. The implementation time will be carried out for 2 meetings with each meeting of 90 minutes consisting of material delivery and active question and answer discussions.

The presenters or resource persons are Clinical Psychologists at the Pontianak City Disability Service and Assessment Center UPT, Pontianak City Tesla Therapy Center Psychologists and Online Clinical Psychologists on the Halodoc Application in accordance with expert recommendations. Several related studies support the results of this needs analysis. Previous researchers stated that providing education based on websites, digital platforms, applications and similar software has proven effective in providing online education, especially in adolescence. This is because adolescents easily adapt to the times so that digital

platforms are the best choice for implementing interventions (Arjadi et al., 2018).

Another study in India also mentioned that the Adolescent Mental Health Intervention (POD Adventures) is a feasible application to be delivered with guidance from lay counselors in Indian schools. The intervention was acceptable to participants and associated with large improvements in problem severity and mental health symptom severity (Gonsalves et al., 2021).

Table 1. Results of Expert Validation of Child Mental Health Materials

Material Validator	Value	(%)	Average (%)	p-value	Approx Sig.
Expert 1	33	91.6	93	0.182	0.571
Expert 2	34	94.4			

Based on table 1, it is known that the average value of the material expert is 93. The results of the material expert test using the Kappa test show a significance value of 0.182 which means there is a low agreement. In addition, the significant value is 0.571 which shows that there is a difference in value between material experts 1 and 2.

Table 2. Results of the Health and IT Media Expert Validation

Validator Material	Value	(%)	Average (%)	p-value	Approx Sig.
Expert 1	34	94.4	95.8	0.609	0.047
Expert 2	35	97.2			

Based on Table 2, it is known that the average value of the material expert is 95.8. The results of the material expert test using the Kappa test show a significance value of 0.609 which means there is a good agreement. In addition, the significance value is 0.047 which shows that there is no difference in value between health media and IT Kominfo experts.

After the needs analysis stage is carried out and the results of the analysis are obtained, a meeting is held with the resource person for a briefieng before the implementation of the virtual class. The meeting was to coordinate the results of the needs analysis to provide an overview of the material and methods as expected by respondents based on the results of the interview. Meanwhile, coordination with respondents was carried out via WhatsApp Group.

The implementation of virtual class activities was carried out twice with a duration of 90 minutes per meeting, the span of the first and second meetings was 14 days. The activity begins with the delivery of material by a psychologist resource person for 30 minutes, followed by discussion and questions and answers for 60 minutes. To facilitate the delivery of information on the formation of virtual classes, a WA Group was formed as well as useful for providing materials, counseling manuals and virtual class invitations. In addition, the WA Group formed is useful for conveying information related to anxiety and depression management such as educational videos, mental emergency help flow, relaxation techniques. Completion of the pre-test questionnaire was carried out the day before the virtual class in the intervention group and control group. For filling out the post test questionnaire, it was carried out after the zoom meeting activity and the second post test was carried out after 12 weeks after the virtual class activity was carried out.

The control group was not given an intervention in the form of health education through virtual classes, but respondents were only given the same counseling manual as the intervention group and PPT material on adolescent emotional mental health (anxiety and depression) through WA Group.

Characteristics of Respondents

Based on Table 3, it is known that there is no difference in the age of respondents in the intervention group and control respondents. The p-value of 0.894 is greater than 0.05, so there is no significant difference. The minimum age of adolescent respondents is 15 years and the maximum is 19 years. There is no difference in the gender of intervention respondents and control respondents. The p-value of 0.294 is greater than 0.05, so there is no significant difference. The gender of intervention and control respondents is male and female. There is no difference in parental education of intervention respondents and control respondents. The p-value of 0.621 is greater than 0.05, so there is no significant difference.

The minimum parental education of adolescent respondents is elementary school/equivalent and the highest education is high school/equivalent. The researcher added the option "other" on the questionnaire but no one filled it in so the option was not displayed in the results. There is no difference in living together between intervention respondents and control respondents. The p-value of 0.345 is greater than 0.05, so there is no significant difference. Most of the intervention and control respondents lived with their parents. While the least lived with siblings or relatives or lived alone. There was no difference in parental income between intervention and control respondents. The p-value of 0.869 is greater than 0.05, so there is no significant difference. The highest parental income of intervention and control respondents was Rp4,999,999 while the lowest was less than Rp1,000,000.

Table 3. Frequency Distribution of Respondents' Age

Parameters	Intervention		Control		p-value	Information
	N	%	n	%		
Age (years)						
15	8	20	10	25	0.894	No difference
16	10	25	8	20		
17	16	40	10	25		
18	5	12.5	9	22.5		
19	1	2.5	3	7.5		
Gender					0.294	No difference
Male	2	5	13	32.5		
Female	38	95	27	67.5		
Parental Education					0.621	No difference
Elementary school/equivalent	15	37.5	19	47.5		
Junior high school/equivalent	17	42.5	11	27.5		
High school/equivalent	8	20	10	25		
Living together					0.345	No difference
Parents	33	82.5	29	72.5		
Grandparents	4	10	6	15		
Siblings/Relatives	1	2.5	3	7.5		
Live Alone	2	5	2	5		
Parents' Income					0.869	No difference
< 1.000.000	2	5	21	52.5		
1,000,000 – 2,999,999	20	50	16	40		
3,000,000 – 4,999,999	18	45	3	7.5		

Table 4. Initial Conditions of Knowledge, Attitudes and Help-Seeking Behavior of High School Adolescents with Anxiety and Depression Mann-Whitney Test

Group	Pretest Treatment					
	n	Min	Max	Mean	Std. Deviation	p-value
Treatment	40	0	5	1.40	1.150	0.028
Control	40	0	5	1.83	0.874	

Initial Conditions of Help-Seeking Behavior of High School Adolescents with Anxiety and Depression

Based on Table 4 above, it is obtained that the initial condition of the help-seeking behavior variable has a significance value of 0.028, which means that there is a difference in the initial condition. We can see that in the intervention and control groups, the minimum value of behavior is 0. The maximum value of the intervention and control groups is 5. While the average value of the intervention group is 1.40 and the control group is 1.83. Although the values are similar, the significance value obtained is 0.028, which means that there is a difference in the initial condition.

Adolescents with mental disorders are mostly unrecognized and untreated. Community resources, including school systems and teachers, are important elements in actions aimed at promoting adolescent mental health and preventing and treating mental disorders, especially in low- and middle-income countries.

Previous researchers developed a web-based program to educate elementary school teachers about childhood mental disorders and conducted a cluster randomized controlled trial to test the effectiveness of a web-based program intervention compared to the same program based only on text and video materials and for a waitlist control group. Nine schools from one city in the state of San Paulo, Brazil, were randomized into three groups, and teachers completed a 3-week educational program.

Data were analyzed according to complete case and intention-to-treat approaches. In terms of knowledge gain about mental disorders, the web-based program intervention was superior to the text-and-video intervention and the waitlist control group. In terms of beliefs and attitudes about mental disorders, the web-based program intervention group presented less stigmatized concepts than the text-and-video group and more non-stigmatized concepts than the waitlist group (Pereira et al., 2015).

Other studies have stated that in today's global era, all respondents have mobile phones, and the majority have smartphones that are used for text messaging, email, accessing the internet, and downloading applications. Participants recommended the use of smartphones to improve healthcare providers' access to continuing education and to improve patients' knowledge about health. Physicians had better access to

mHealth resources compared to nurses. Credible, evidence-based, and affordable mobile applications are needed to provide a platform for continuing health education to healthcare professionals and patients in India and other resource-limited settings (Garner et al., 2018).

Table 5. Descriptive Statistics of Help-Seeking Behavior of High School Adolescents Related to Anxiety and Depression in the Intervention Group Before and After Intervention Wilcoxon test

Treatment	n	Min	Max	Mean	Std.Deviation	p-value
Pretest	40	0	5	1.40	1.150	0.000
Posttest	40	1	8	3.75	1.565	

Help-Seeking Behavior of High School Adolescents Related to Anxiety and Depression in the Intervention Group Before and After Intervention

Descriptive data information was obtained on the Help-Seeking Behavior of High School Adolescents related to Anxiety and Depression in the Intervention Group Before and After Receiving Intervention, the average value before the intervention was 1.40 and increased after the intervention to 3.75. The minimum value of help-seeking behavior before and after the intervention also increased from 0 to 1 and the maximum value increased from 5 to 8. Based on these data, it is known that the values of the help-seeking behavior variables increased after the intervention. This data is supported by the Wilcoxon test significance value of 0.000 which means that there is a difference in knowledge scores before and after the intervention. The increase in the value of the help-seeking behavior variable per item in detail is as follows:

Table 6. Frequency Distribution of Help-Seeking Behavior in the Intervention Group

Questions	Pretest		Posttest	
	N	Percentage %	N	Percentage %
When I am anxious, do I see a professional/counselor at the health center?	2	2.5	27	67.5
When I am anxious, do I see a psychologist?	2	2.5	12	30.0
When I am anxious, do I see a religious teacher/preacher/pastor?	2	2.5	11	27.5
When I am anxious, do I seek help from my closest friends?	4	10.0	24	60.0
When I am anxious, do I see a psychiatrist?	20	50.0	25	62.5
I will seek help every time I feel anxious/depressed from my closest relatives?	21	52.5	31	77.5
When I am anxious, do I tell my parents about my feelings?	3	7.5	10	25.0
Do I try to meet friends or family when I am anxious?	2	2.5	10	25.0

Based on Table 6, it is known that the answers of the intervention group respondents on the variable of help-seeking behavior increased from before to after the intervention. This shows that the intervention given increased the help-seeking behavior of respondents.

The most prominent increase was in items 1, 4 and 6. In these statement items, there was an increase in the behavior of seeking help from experts or counselors at the Health Center (from 2.5% to 67.5%), to closest friends (from 10% to 60%), to meet closest relatives (from 52.5% to 77.5%). Based on these data, the initial condition of adolescents tends not to seek help when feeling anxious and depressed. However, after taking the virtual class, adolescents began to seek help from those closest to them and even counselors or experts.

These findings are in line with findings conducted in Mexico on adolescents to reduce the risk of HIV/AIDS transmission through deviant sexual behavior. In this study, a virtual meeting intervention (Connect) was conducted which proved a significant relationship to reduce the risk of sexually transmitted HIV/AIDS by 61% in adolescents with a significance value of 0.019. Based on the study, social support in adolescents is a factor that influences adolescent sexual behavior with an effectiveness of 575 and a significance value of 0.034 (Castillo-Arcos et al., 2016).

The social support referred to above can come from people closest to them such as parents, family, closest relatives and peers. Other studies state that adolescents have closer relationships with their peers than with parents or other relatives. Because peer support has a close relationship with adolescent emotions (Abraham & Rahardjo, 2015; Korda & Itani, 2013).

Other studies are also in line with the above study. A pre and post quasi-experimental study was conducted with an internet-based intervention for depression in the control and intervention groups for 6 months. A total of 313 participants were registered and randomly assigned, 159 to the control group and 154 to the online psychoeducation group. At 10 weeks, PHQ-9 scores were significantly lower in the control group than in the online psychoeducation group (mean difference -1 26 points [95% CI -2 29 to -0 23]; p=0 017), and participants in the control group had a 50% higher chance of remission at 10 weeks (relative risk 1 50 [95% CI 1 19 to 1 88]; p<0 0001). The effect size of 0 24 for the control

group compared with the control group at 10 weeks was maintained over time (effect size 0 24 at 3 months, and 0 27 at 6 months). No adverse events were reported in either group. In conclusion, in an internet-based intervention for depression in low- or middle-income countries, online behavioral activation with lay counselors effectively supports reducing depressive symptoms, and may help bridge the mental health gap in low- and middle-income countries (Arjadi et al., 2018).

Differences in Control Group Behavior Before and After Intervention

Based on table 7, it is known that in the variables of knowledge, attitude and behavior of seeking help in the control group before and after the intervention there is no difference. This is proven by the significant value > 0.05. The significant value of knowledge is 0.465, attitude 0.905 and behavior of seeking help 0.952.

Table 7. Differences in Control Group Help-Seeking Behavior Before and After Intervention

Variable	Pretest Mean	Posttest mean	p-value
Help Seeking Behavior	1.83	1.85	0.952

The difference in the knowledge score in the control group is 0.13 with a decrease in the score in the posttest. This is also in accordance with the p-value on the knowledge variable which proves that there is no significant change in the control group before or after the intervention is carried out.

Differences in Behavior of the Intervention and Control Groups

Based on Table 8, it is known that the average value of the intervention group before and after the intervention increased from 1.40 to 3.75. While in the control group it tended to stagnate from 1.83 to 1.85. The significance result before the intervention was 0.028 (<0.05) which indicates that there is a difference in the value of help-seeking behavior from intervention and control respondents. Similarly, the value after the intervention obtained a significance value of 0.000 which indicates that there is a difference between the group that was given the intervention and the group that was not. More details can be seen in Figure 1.

Table 8. Differences in Behavior of Seeking Help in the Intervention and Control Groups

Mean	Groups		P-value
	Treatment	Control	
Pretest	1.40	1.83	0.028
Posttest	3.75	1.85	0.000

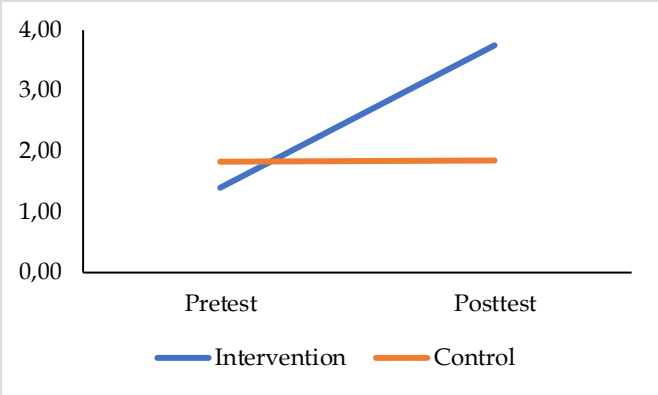

Figure 1. Graph of Differences in help-seeking behavior of the intervention group and the control group

Based on Figure 1, it can be seen that the intervention group experienced an increase while the control group experienced a slight decrease. This shows that there was an increase in the value in the group given the intervention compared to the group that was not given the intervention.

The difference in behavioral scores in the control group was 0.02 while in the intervention group it was 2.35. This is also in accordance with the p-value on the group attitude variable which proves that there was no significant change in the control group before or after the intervention was carried out. While in the intervention group there was a difference.

The results of the study above are supported by several other studies. Several quasi-experimental studies involving control and intervention groups with pre and post, found that there was no difference in the control group in behavioral variables, while in the intervention group there was a difference. The difference in behavior in the intervention group is an improvement in behavioral variables (Ali et al., 2023; Anttila et al., 2019; Dambi et al., 2022).

Relationship Analysis

The results of the correlation test using Spearmann show that the behavioral variable, the significance value is less than 0.05, which is 0.008, so there is a relationship between before and after the intervention on the behavioral variable. In addition, the behavioral variable obtained a Correlation Coefficient figure of 0.146. This figure shows a sufficient correlation and has a positive direction. This direction can be interpreted as the higher the behavioral value before the intervention, the higher the behavioral value after the intervention.

Many studies have shown that gadgets are very useful in helping to improve adolescent behavior. The virtual meeting intervention (Connect) proved a significant relationship to reduce the risk of sexually transmitted HIV/AIDS by 61% in adolescents with a significance value of 0.019. Based on this study, social

support in adolescents is a factor that influences adolescent sexual behavior with an effectiveness of 575 and a significance value of 0.034. Due to the accessibility of the Internet in schools and public libraries, Internet-based health interventions are an increasingly viable strategy to reduce gaps in intervention delivery and access (Castillo-Arcos et al., 2016). Similar studies have also shown that digital technology is effective in improving the ability of non-specialists in mental health management. Incorporating digital technology into non-specialist mental health interventions tends to increase non-specialist competence and knowledge in providing interventions, and has a positive effect on the severity of mental health problems, utilization of mental health care, and psychosocial functioning outcomes of related services, especially in primary care delivery models (Mudiyanselage et al., 2022). Digital technologies are predominantly used in task-shifting care interventions, with a focus on primary care delivery approaches, for purposes such as training, supervising, and supporting non-specialists in treatment-delivery and delivery of care components with non-specialist involvement. Treatment interventions that combine non-specialists and digital technologies primarily focus on people with non-severe mental health or symptoms (Phoeun et al., 2019).

This review found that each Digital Training improved non-specialist competency and knowledge with small to medium effect sizes ($d \leq 0.8$). Furthermore, interventions delivered by non-specialists using digital technology as a further support for Service Delivery and Non-specialist supervision worked to improve mental health outcomes in service recipients with medium to large effect sizes overall ($D \geq 0.2$).

Similarly, interventions delivered digitally with additional Non-specialist involvement improved mental health outcomes in service recipients with mostly medium effect sizes ($d = 0.2–0.8$). However, the overall certainty of the available evidence was assessed as low (Mudiyanselage et al., 2024).

Anxiety and depression experienced by adolescents have several factors, one of which is appropriate help-seeking behavior. This help can be obtained from various sources including experts and counselors. Further research on the role of counselors has been conducted previously. The results of the study stated that a significant decrease was found between the average anxiety and depression scores of both groups (p value = 0.000). Counseling by trained community counselors at least reduces the level of anxiety and/or depression in women from their own community. So counselors play a very important role in dealing with anxiety and depression (Ali et al., 2023).

However, the obstacle is that experts or counselors in Indonesia are limited. Ketapang Regency itself does not yet have a registered psychologist or psychiatrist. So web-based consultation is an alternative solution. Little effort has been made to investigate the potential of web programs aimed at supporting adolescent mental well-being in school settings in middle-income countries. A quasi-experimental feasibility study was conducted in Thailand with adolescents (N = 180) in three sampled secondary schools and with teachers (N = 12) acting as program tutors.

The web program was used in small groups, independently, or not used at all. No statistically significant changes were found between groups regarding depression, stress, or satisfaction. Differences between program users (n = 61) and non-users (n = 48) were not significant. Acceptability was higher among adolescents who used the program independently (n = 40, 73% vs. n = 21, 39%; p = 0.001). Usability feedback did not differ between groups. Support should be provided for the program to be potentially used. More information is needed regarding factors associated with web program use (Anttila et al., 2019). Other research also supports that digital health interventions offer promise in the treatment of mental health conditions. In the context of the COVID-19 pandemic, digital health interventions provide a safer alternative to face-to-face treatment. However, further research on the application of digital interventions in understudied mental health conditions is needed. In addition, evidence is needed on the effectiveness and appropriateness of digital health tools for marginalized patients who may not have access to digital health interventions (Dambi et al., 2022; Halaji et al., 2021; Philippe et al., 2022; Wahyudi, 2021).

Conclusion

The results of the needs analysis concluded that the need for intervention to overcome anxiety and depression in high school adolescents is a Virtual Class for Health Education for Anxiety and Depression using the Zoom Meeting application with the assistance of 2 adolescent mental health professionals and with presentation media and the pocket book Get to Know Anxiety and Find the Solution. The characteristics of the respondents in this study included the age of the adolescents, parental education, living together and parental income. It is known that there is no difference in characteristics between the intervention group and the control group. There is a significant difference between the average scores in the intervention group and the control group after the intervention, namely in the intervention group, the difference in behavioral scores in the intervention group was 2.35 and in the

control group 0.02. Providing health education using virtual classes with presentation media and the Get to Know Anxiety and Find the Solution Pocket Book is known to be related to improving the behavior of seeking help for high school adolescents in Ketapang, so that the media can be applied to adolescents.

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References

Abraham, J., & Rahardjo, W. (2015). Psychopathy, sexual values dimensions, and premarital sexual behaviour among urban unmarried adolescents. *Procedia-Social and Behavioral Sciences*, *165*, 2–11. https://doi.org/10.1016/j.sbspro.2014.12.598

Ali, B. S., Rahbar, M. H., Naeem, S., Gul, A., Mubeen, S., & Iqbal, A. (2023). The Effectiveness of Counseling on Anxiety and Depression by Minimally Trained Counselors: A Randomized Controlled Trial. *American Journal of Psychotherapy*, *57*(3), 324–336. https://doi.org/10.1176/appi.psychotherapy.2003.57.3.324

Anttila, M., Sittichai, R., Katajisto, J., & Välimäki, M. (2019). Impact of a Web Program to Support the Mental Wellbeing of High School Students: A Quasi Experimental Feasibility Study. *International Journal of Environmental Research and Public Health*, *16*(14), 2473. https://doi.org/10.3390/ijerph16142473

Arjadi, R., Nauta, M. H., Scholte, W. F., Hollon, S. D., Chowdhary, N., Suryani, A. O., Uiterwaal, C. S. P. M., & Bockting, C. L. H. (2018). Internet-based behavioural activation with lay counsellor support versus online minimal psychoeducation without support for treatment of depression: a randomised controlled trial in Indonesia. *The Lancet Psychiatry*, *5*(9), 707–716. https://doi.org/10.1016/S2215-0366(18)30223-2

Byers, T., Newton, K., Whitman, T., & Jones, C. W. (2022). Prevalence of and Relationship Between Caregiver Adversity Scores and Child Client Eco-systemic Structural Family Therapy (ESFT) Outcome: Implications for Family Based Mental Health Services (FBMHS. *Community Mental Health Journal*, *58*(5), 895–906. https://doi.org/10.1007/s10597-021-00897-4

Castillo-Arcos, L. D. C., Benavides-Torres, R. A., López-Rosales, F., Onofre-Rodríguez, D. J., Valdez-Montero, C., & Maas-Góngora, L. (2016). The effect of an Internet-based intervention designed to reduce HIV/AIDS sexual risk among Mexican adolescents. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV*, *28*(2), 191–196. https://doi.org/10.1080/09540121.2015.1073663

Dambi, J., Norman, C., Doukani, A., Potgieter, S., Turner, J., Musesengwa, R., Verhey, R., & Chibanda, D. (2022). A Digital Mental Health Intervention (Inuka) for Common Mental Health Disorders in Zimbabwean Adults in Response to the COVID-19 Pandemic: Feasibility and Acceptability Pilot Study. *JMIR Mental Health*, *9*(10), 37968. https://doi.org/10.2196/37968

Do, R., Park, J.-R., Lee, S.-Y., Cho, M.-J., Kim, J.-S., & Shin, M.-S. (2019). Adolescents' Attitudes and Intentions toward Help-Seeking and Computer-Based Treatment for Depression. *Psychiatry Investigation*, *16*(10), 728–736. https://doi.org/10.30773/pi.2019.07.17.4

Ernawati, A. (2022). Media Promosi Kesehatan Untuk Meningkatkan Pengetahuan Ibu Tentang Stunting. *Jurnal Litbang: Media Informasi Penelitian, Pengembangan Dan IPTEK*, *18*(2), 139–152. https://doi.org/10.33658/jl.v18i2.324

Fitri, A., Neherta, M., & Sasmita, H. (2019). Faktor-Faktor Yang Memengaruhi Masalah Mental Emosional Remaja di Sekolah Menengah Kejuruan (SMK) Swasta Se Kota Padang Panjang Tahun 2018. *Jurnal Keperawatan Abdurrab*, *2*(2), 68–72. https://doi.org/10.36341/jka.v2i2.626

Garner, S. L., Sudia, T., & Rachaprolu, S. (2018). Smart phone accessibility and mHealth use in a limited resource setting. *International Journal of Nursing Practice*, *24*(1). https://doi.org/10.1111/ijn.12609

Gautam, S., Jain, A., Chaudhary, J., Gautam, M., Gaur, M., & Grover, S. (2024). Concept of mental health and mental well-being, it's determinants and coping strategies. *Indian Journal of Psychiatry*, *66*(2), 231–244. https://doi.org/10.4103/indianjpsychiatry.indianjpsychiatry_707_23

Gonsalves, P. P., Hodgson, E. S., Bhat, B., Sharma, R., Jambhale, A., Michelson, D., & Patel, V. (2021). App-based guided problem-solving intervention for adolescent mental health: a pilot cohort study

in Indian schools. *Evidence Based Mental Health*, *24*(1), 11–18. https://doi.org/10.1136/ebmental-2020-300194

Halaji, M., Heiat, M., Faraji, N., & Ranjbar, R. (2021). Epidemiology of COVID-19: An updated review. *Journal of Research in Medical Sciences*, *26*(1). https://doi.org/10.4103/jrms.JRMS_506_20

Kaligis, F., Ismail, R. I., Wiguna, T., Prasetyo, S., Indriatmi, W., Gunardi, H., Pandia, V., & Magdalena, C. C. (2021). Mental Health Problems and Needs among Transitional-Age Youth in Indonesia. *International Journal of Environmental Research and Public Health*, *18*(8), 4046. https://doi.org/10.3390/ijerph18084046

Kessler, R. C., Aguilar-Gaxiola, S., Alonso, J., Chatterji, S., Lee, S., & Ustün, T. B. (2009). The WHO World Mental Health (WMH) Surveys. *Die Psychiatrie*, *6*(1), 5–9. https://doi.org/10.1055/s-0038-1671923

Korda, H., & Itani, Z. (2013). Harnessing social media for health promotion and behavior change. *PybMed.Gov*, *1*(14), 15–23. https://doi.org/10.1177/1524839911405850

Liasari, I., Priyambodo, R. A., Utari, N., & Nur Aida, W. (2023). Peningkatan Pengetahuan Kesehatan Gigi pada Siswa Sekolah Dasar Melalui Penggunaan Media Busy Book: Pendekatan Menarik dalam Pendidikan Kesehatan Gigi. *Media Kesehatan Gigi: Politeknik Kesehatan Makassar*, *22*(1), 1–7. https://doi.org/10.32382/mkg.v22i1.23

Lorimy, L., Cosquer, M., Barron, E., & Jousselme, C. (2021). Santé mentale des adolescents selon leur attirance sexuelle : enquête en milieu scolaire. *L'Encéphale*, *47*(1), 15–20. https://doi.org/10.1016/j.encep.2020.02.009

Maurer, F., & Smith, C. (2012). *Community/Public Health Nursing Practice: Health for Families and Populations* (5th ed.). Elsevier Health Sciences.

Mawaddah, N., & Prastya, A. (2023). Upaya Peningkatan Kesehatan Mental Remaja Melalui Stimulasi Perkembangan Psikososial Pada Remaja. *Dedikasi Saintek Jurnal Pengabdian Masyarakat*, *2*(2), 115–125. https://doi.org/10.58545/djpm.v2i2.180

Monica, J., & Fitriawati, D. (2020). Efektivitas Penggunaan Aplikasi Zoom Sebagai Media Pembelajaran Online Pada Mahasiswa Saat Pandemi Covid-19. *Jurnal Communio : Jurnal Jurusan Ilmu Komunikasi*, *9*(2), 1630–1640. https://doi.org/10.35508/jikom.v9i2.2416

Mudiyanselage, K. W., Bastiaansen, J. A., Stewart, R., Wardenaar, K. J., Penninx, B. W. J. H., Schoevers, R. A., Hemert, A. M., & Jörg, F. (2022). Identifying mismatch and match between clinical needs and mental healthcare use trajectories in people with anxiety and depression: Results of a longitudinal study. *Journal of Affective Disorders*, *297*, 657–670. https://doi.org/10.1016/j.jad.2021.09.054

Mudiyanselage, K. W. W., Santis, K. K., Jörg, F., Saleem, M., Stewart, R., Zeeb, H., & Busse, H. (2024). The effectiveness of mental health interventions involving non-specialists and digital technology in low-and middle-income countries – a systematic review. *BMC Public Health*, *24*(1). https://doi.org/10.1186/s12889-023-17417-6

Nisa, H., Aidina, W., Rahmita, N. R., Manita, E., & Auliani, F. (2023). Promosi Kesehatan Mental Remaja Melalui Virtual Boothcamp Untuk Meningkatkan Peer-Support. *Transformatif : Jurnal Pengabdian Masyarakat*, *4*(2), 125–138. https://doi.org/10.22515/tranformatif.v4i2.7361

Nuramalia, N. (2022). Efektivitas Intervensi Media Audio Visual Aku Bangga Aku Tahu Dalam Pencegahan Penularan HIV-AIDS Pada Remaja. *HEALTHY : Jurnal Inovasi Riset Ilmu Kesehatan*, *1*(3), 158–165. https://doi.org/10.51878/healthy.v1i3.1515

Paulich, K. N., Ross, J. M., Lessem, J. M., & Hewitt, J. K. (2021). Screen time and early adolescent mental health, academic, and social outcomes in 9- and 10-year old children: Utilizing the Adolescent Brain Cognitive Development SM (ABCD) Study. *PloS One*, *16*(9), 256591. https://doi.org/10.1371/journal.pone.0256591

Pebrianti, S., Shalahuddin, I., Eriyani, T., & Nugraha, B. A. (2024). Intervensi Keperawatan "Ekofol" pada Pasien Post PCI dalam Meningkatkan Kepatuhan Pengobatan. *MAHESA : Malahayati Health Student Journal*, *4*(4), 1577–1597. https://doi.org/10.33024/mahesa.v4i4.14292

Pereira, C. A., Wen, C. L., Miguel, E. C., & Polanczyk, G. V. (2015). A randomised controlled trial of a web-based educational program in child mental health for schoolteachers. *European Child & Adolescent Psychiatry*, *24*(8), 931–940. https://doi.org/10.1007/s00787-014-0642-8

Philippe, T. J., Sikder, N., Jackson, A., Koblanski, M. E., Liow, E., Pilarinos, A., & Vasarhelyi, K. (2022). Digital Health Interventions for Delivery of Mental Health Care: Systematic and Comprehensive Meta-Review. *JMIR Mental Health*, *9*(5), 35159. https://doi.org/10.2196/35159

Phoeun, B., Nguyen, A. J., Dang, M. H., Tran, N. T., & Weiss, B. (2019). Assessing the Effectiveness of Teachers' Mental Health Literacy Training in Cambodia: A Randomized Controlled Trial. *VNU Journal of Science: Education Research*, *35*(3). https://doi.org/10.25073/2588-1159/vnuer.4279

Putrawangsa, S., & Hasanah, U. (2018). Integrasi Teknologi Digital Dalam Pembelajaran Di Era

Industri 4.0. *Jurnal Tatsqif: Jurnal Pemikiran Dan Penelitian Pendidikan*, *16*(1), 42–54. https://doi.org/10.20414/jtq.v16i1.203

Rasyida, A. (2019). Faktor yang menjadi hambatan untuk mencari bantuan psikologis formal di kalangan mahasiswa. *Persona:Jurnal Psikologi Indonesia*, *8*(2), 193–207. https://doi.org/10.30996/persona.v8i2.2586

Rowe, S. L., French, R. S., Henderson, C., Ougrin, D., Slade, M., & Moran, P. (2014). Help-seeking behaviour and adolescent self-harm: A systematic review. *Australian & New Zealand Journal of Psychiatry*, *48*(12), 1083–1095. https://doi.org/10.1177/0004867414555718

Saharoh, S. L., Anzani, Y. A., & Chusni, M. M. (2022). Efektifitas Zoom Meetings sebagai Media Pembelajaran Online. *Jurnal Penelitian Sains Dan Pendidikan (JPSP)*, *2*(2), 175–179. https://doi.org/10.23971/jpsp.v2i2.3999

Sandiwarno, S. (2016). Perancangan Model E-Learning Berbasis Collaborative Video Conference Learning Guna Mendapatkan Hasil Pembelajaran Yang Efektif dan Efisien. *Jurnal Ilmiah FIFO*, *8*(2). Retrieved from https://publikasi.mercubuana.ac.id/files/journals/19/articles/1314/submission/copyedit/1314-2950-1-CE.pdf

Sultania, P., Agrawal, N. R., Rani, A., Dharel, D., Charles, R., & Dudani, R. (2019). Breastfeeding Knowledge and Behavior Among Women Visiting a Tertiary Care Center in India: A Cross-Sectional Survey. *Annals of Global Health*, *85*(1). https://doi.org/10.5334/aogh.2093

Sutrisminah, E., Saskia, F. S., & Susiloningtyas, I. (2025). Faktor-faktor yang mempengaruhi terjadinya free sex pada remaja. *Literatur Review. Jurnal Kebidanan Malakbi*, *6*(1), 12. https://doi.org/10.33490/b.v6i1.1349

Wahyudi, D. T. (2021). Peran Media Promosi Kesehatan Terhadap Upaya Pencegahan Covid-19 Pada Mahasiswa Keperawatan. *JIKP Jurnal Ilmiah Kesehatan Pencerah*, *10*(2), 277–281. Retrieved from https://stikesmu-sidrap.e-journal.id/JIKP/article/view/287

Widyasih, H. (2023). Kebutuhan Layanan Kesehatan Mental Bagi Remaja: Suatu Telaah Pustaka. *Prosiding Simposium Kesehatan Nasional*. Retrieved from https://shorturl.asia/QkrxG

Yulinda, A. (2018). Perbedaan Pengetahuan Remaja Tentang Sadari Sebelum Dan Sesudah Penyuluhan Kesehatan di SMKN 5 Surabaya. *Jurnal PROMKES*, *6*(2), 116. https://doi.org/10.20473/jpk.V6.I2.2018.116-128