Online Regulative Coping Strategies to Alleviate Loneliness

Ria Wardani[1], Ira Adelina[1], Henndy Ginting[2], Lili Garliah[3]

{ria.wardani@psy.maranatha.edu}

Universitas Kristen Maranatha, Bandung, Indonesia[1], Institut Teknologi Bandung, Bandung, Indonesia[2], Universitas Jendral Ahmad Yani, Cimahi, Indonesia[3]

Abstract. The Covid-19 pandemic that spread at the end of 2019 resulted in the emergence of social restrictions and the obligation to carry out health protocols for all citizens. One of the affected factors is the individual's mental health, including the emergence of the psychological condition of loneliness. Loneliness occurs when a person perceives a gap between expected and actual social relations. Based on previous research, an online friendship enrichment program (oFEP) with regulative coping strategies can alleviate loneliness. This study uses an experimental pretest-posttest control group design with 42 students as participants. They are randomly divided into an experimental group and a control group. De Jong Gierveld Loneliness Scale short version is a measurement instrument given to participants from the two groups studied to obtain pretest data. Furthermore, the experimental group received treatment in the form of an online regulatory coping strategy to reduce loneliness levels for 5 (five) weeks with five different subject matter. Meanwhile, the control group do not receive any treatment. After the treatment, the two research groups again underwent post-test measurements with the same instrument. The research findings indicate a difference between the pretest and post-test in the experimental group that the average post-test score is significantly lower than the pretest. In conclusion, online regulaive coping strategies can reduce lonerliness.

Keywords: Experimental group, Control group, Loneliness, Regulatory coping online.

1 Introduction

The outbreak of COVID-19 pandemic in the last month of 2019 has led to global public policies campaigning for efforts to limit the spread of the virus, one of which is physical or social distancing [1]. All school and work activities are carried out online from home, and the house becomes the center of activities for all family members. COVID-19 pandemic is very significantly related to the level of psychological distress [2]. This kind of public health emergency can affect health, safety, and well-being in the form of emotional isolation [3].

As psychological reactions to the pandemic, maladaptive behavior may appear due to emotional distress, such as anxiety, fear, frustration, loneliness, boredom, anger, depression, stress,

PICEI 2022, September 15, Gorontalo, Indonesia

DOI 10.4108/eai.15-9-2022.2335910

and avoidance behavior [4]. Even though the stay-at-home policy is an important way to protect physical health [5], it can also interfere with social and economic life [6]–[8].

The negative economic and social impacts due to stay-at-home regulations and the COVID-19 pandemic have resulted in adverse psychological outcomes, such as increased loneliness, reduced social support, depression, and anxiety [7], [9]. The sudden appearance of COVID-19 has not been supported by adequate research on this virus. However, several studies in China at the start of the COVID-19 outbreak showed an association between COVID-19 and increased anxiety, depression, and stress [10]–[12]. Overall, the negative impact of COVID-19 pandemic on economic conditions, daily life, social activities, and work activities is associated with serious psychological difficulties [10], [12]. Although research on the psychological impact of COVID-19 is still limited, these limited findings align with previous research on the psychological impact of the pandemic [13].

The relationship between loneliness, physical health, and mental health shows that loneliness affects almost all aspects of human life. Loneliness is not just a painful feeling of isolation, disconnected, and feeling of belonging [14], but is a risk factor for disrupting physical health conditions, such as increased vascular resistance in young adults [15], [16]. Compared to individuals who are not lonely, lonely people show decreased thinking [17]. Loneliness interferes with thinking functions because it triggers excessive awareness of social threats [18].

Recent research shows that loneliness is not an irreversible trait but can be exacerbated or improved through social interaction [19]. In one study, hypnosis has succeeded in inducing participants to have feelings of loneliness with high and low levels [20]. Increased feelings of loneliness will reduce social skills, optimism, self-esteem, and social support [20]. Internet-based has been developed to overcome various diagnoses of psychological problems such as loneliness, insomnia, and stress [21]. Internet-based psychological interventions can be used to provide clues about how a person can perform tasks in real life. Therefore, the loneliness situation in real life can be overcome virtually with training that facilitates activities in daily life. The same intervention has been carried out to address the problem of social fear [22].

[23]conducted a study in the form of online Friendship Enrichment Program (oFEP) training to alleviate loneliness. This program presents the regulative coping strategy that consists of adapting personal standards and reducing the importance of the discrepancy. In adapting personal standards, individuals are encouraged to re-evaluate what they want and do not want from the friendship they develop. Meanwhile, in reducing the discrepancy, individuals are focused on accepting the current situation as an irreversible state and therefore diverting attention to being able to enjoy their time [23].

Based on the explanation above, this study will test the following hypotheses:

a. There are differences in pretest and post-test loneliness in the experimental group before and after undergoing online regulatory coping treatment.
b. There are differences in post-test loneliness in the experimental group and the control group after online regulatory coping training.

2 Method

This research will be carried out using a two-groups experimental design, a pretest-posttest design, randomly assigning participants to the experimental and control groups. The experimental group will be given an intervention, but the control group will not receive any treatment.

2.1 Research Participants

Participants in this study are students who, at least in the past year, had undergone online learning. Before being involved as a participant, they will be asked if they are willing to fill out an online informed consent form. The total number of participants is 42 people, who will be randomly assigned to the experimental group and control group.

2.2 Research Variable

a. The independent variables (antecedent conditions) are deliberately manipulated by the researcher. In this study, the independent variable is a regulatory coping strategy.
b. The dependent variable is a variable that changes proportionally due to manipulation (intervention). In this study, it is loneliness.

2.3 Research Instruments

a. De Jong Gierveld Loneliness Scale short version [24] questionnaire consists of 6 (six) statements, which includes 3 (three) short emotional subscale items and 3 (three) short social subscale items. For each item, there are 4 (four) answer choices: Never (TP), Rarely (J), Sometimes (KK), and Often (S). A scale of reliability is 0,80.
b. Online Friendship Enrichment Program (oFEP) [23], which is modified according to the developmental stage of the participants in this study, is emerging adulthood [25]. The oFEP strategy chosen in this study consisted of the standard adapting strategy and reducing the importance of the discrepancy; both are part of a regulative coping strategy.

2.4 Research Procedure

Randomly place 42 participants who are all active students into two groups: the experimental group and the control group. Then, the researcher gave the De Jong Gierveld Loneliness Scale short version as pretest data. The following procedure will be given to the experimental group participants, which begins with providing access to take part in the online friendship enrichment

program (oFEP) after logging in first. The treatment program will last for 5 (five) weeks, and participants can access all subject matter via e-mail. Each week, participants will receive a new lesson from one of the following 5 (five) subject topics: (1) making new contacts, (2) maintaining friendships, (3) spending time alone, (4) being a good friend, and (5) expectations in friendship.

Participants can re-access each lesson that has been completed every week. To make this regulative coping strategy effective in alleviating loneliness, each lesson in the program will be equipped with several methods: reading informative texts, answering questions related to the topic, doing exercises during the lesson taking place, watching animated videos, and conducting assignments. Conducting assignments is believed to help participants achieve learning goals and stimulate them to involve themselves in real situations and not just read informative texts.

Examples of tasks are asking participants to greet strangers, contact someone they have not seen in a long time, and spend a pleasant evening alone. The purpose of this assignment is to alleviate loneliness. After studying a particular topic (e.g., making a new friendly contact), participants will be given an informative text, followed by questions to stimulate reflection on the topic studied, and watch an animated video illustrating the topic.

Most questions and examples will be followed by exercises that ask participants to imagine a particular situation and think about how the participant would react in that particular situation. For example, participants are asked to imagine how they would rekindle a relationship with someone they had not spoken to in a long time and then write down what they would say to that person. Another example, taken from maintaining friendships and improving existing relationships topic, is that participants are asked to report a person's name they have not communicated with for a long time. Combined with other elements, such as watching animated videos, this step-by-step approach will invite participants to gradually approach the given task. For example: "After thinking about whom to contact and how to contact them, try contacting that person next week."

After the 5 (week) lesson is completed, De Jong Gierveld Loneliness Scale short version will be given to the experimental group and the control group three weeks after the experimental group underwent the intervention. This is becoming a post-test data.

2.5 Data analysis Technique

The data will be tested using ANOVA (Analysis of variance) to test the average difference between two or more research groups.

2.6 Research Location

This research is not limited to certain locations, considering that during the COVID-19 pandemic, students generally carry out online learning activities from anywhere. So, participants do the tasks requested in this study at their locations, such as at homes, boarding houses, cafes, restaurants, libraries, and others.

3 Results and Discussion

In the following, the results of experimental research will be presented, utilizing online regulatory coping strategies to reduce loneliness in emerging adulthood [25] student participants. After the presentation of the research results, it will be continued with a discussion.

3.1 Research Result

The results of descriptive data analysis show that the average pretest loneliness score of the experimental group (mean pretest) = 29.8095 (n = 21, SD=3.35588) while the average pretest score of the control group (mean pretest) = 27.8095 (n = 21, SD = 4.62189). The average post-test score of the experimental group (mean post-test) = 25.1905 (n = 21; SD = 4.72884) and the mean post-test score of the control group (mean post-test) = 27.619 (n = 21; SD = 5.79203). Through this descriptive analysis, it can be seen that the mean pretest and post-test of the experimental group shows a decrease, but not so with the control group, where the average pretest and post-test scores shows almost no change.

Table 1. Loneliness Descriptive Analysis

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Pretest Experimental Group	21	29.8095	3.35588	.73231	28.2819	31.3371	22.00	36.00
Post-test Experimental Group	21	25.1905	4.72884	1.03192	23.0379	27.3430	12.00	33.00
Pretest Control Group	21	27.8095	4.62189	1.00858	25.7057	29.9134	21.00	35.00
Post-test Control Group	21	27.6190	5.79203	1.26392	24.9825	30.2555	20.00	38.00

Table 3.1 shows the results of the descriptive analysis of the pretest and post-test data of the experimental group and the control group. Overall, it can be seen that the upper and lower limit intervals of the experimental group's pretest score (28.2819 – 31.3371) are above the post-test score interval (23.0379 – 27.3430). The pattern of the two score intervals shows a decreasing score. Meanwhile, in the control group, the pretest score interval (25.7057 – 29.9134) and the post-test score interval (24.9825 – 30.2555) do not show a pattern of decreasing scores.

The following will show the results of the homogeneity test of the data as a requirement for a one-way ANOVA test: the data must have the same variance (homogeneous).

Table 2. Data Homogeneity Test

Variance Homogeneity Test					
		Levene Statistic	df1	df2	Sig.
Loneliness	Based on Mean	4.283	3	80	.007
	Based on Median	2.500	3	80	.065
	Based on Median and with adjusted df	2.500	3	72.894	.066
	Based on trimmed mean	4.171	3	80	.008

The table of homogeneity test results shows a significance based on a median >.05, which means that the data meet the homogeneous criteria. As the next step, a one-way ANOVA test was carried out to determine the difference in mean.

Table 3. ANOVA Test

ANOVA					
Loneliness					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	225.369	3	75.123	3.394	.022
Within Groups	1770.667	80	22.133		
Total	1996.036	83			

Table 3.3 shows a difference in the mean between the experimental group and the control group (sig .022 <.05). Considering the ANOVA test results showed a difference in the mean between the two groups studied. The next step is to conduct a post-host doc test to ensure that the statistical analysis is carried out. For this reason, it is necessary to revisit the results of the test of homogeneity of variances (Table 4.2). Considering that the test results show the same variance (Table 4.2), the further test chosen is Bonferroni. The sign (*) in the mean difference column indicates that the two data groups tested significantly differ.

Table 4. Multiple comparisons test

Multiple Comparisons							
Dependent Variable: Loneliness							
			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
	(I) Group	(J) Group				Lower Bound	Upper Bound
Bonferroni	Pre_experiment	Post_experiment	4.61905*	1.45187	.013	.6911	8.5470
		Pre_control	2.00000	1.45187	1.000	-1.9280	5.9280
		Post_control	2.19048	1.45187	.812	-1.7375	6.1184
	Post_experim	Pre_experiment	-4.61905*	1.45187	.013	-8.5470	-.6911

	ent	Pre_control	-2.61905	1.45187	.450	-6.5470	1.3089
		Post_control	-2.42857	1.45187	.590	-6.3565	1.4994
	Pre_control	Pre_experiment	-2.00000	1.45187	1.000	-5.9280	1.9280
		Pre_control	2.61905	1.45187	.450	-1.3089	6.5470
		Post_control	.19048	1.45187	1.000	-3.7375	4.1184
	Post_control	Pre_experiment	-2.19048	1.45187	.812	-6.1184	1.7375
		Post_experiment	2.42857	1.45187	.590	-1.4994	6.3565
		Pre_control	-.19048	1.45187	1.000	-4.1184	3.7375

*. The mean difference is significant at the 0.05 level.

Table 4.4 shows that the Bonferroni test results in a significant difference between loneliness pretest and post-test, which means that regulative coping strategies can significantly alleviate loneliness (mean difference I-J = 4.61905; sig .013).

3.2 Discussion

Loneliness will encourage individuals who experience it to carry out coping strategies. Someone will cope if they judge that there is a pressing situation so that they assess how many resources they have to choose an action to overcome the situation. The findings of this study indicate that loneliness is reduced by implementing online regulatory coping strategies. According to [25], using a regulative coping strategy that focuses on emotions will be effective if the loneliness you face is against an irreversible background, as is the case with the COVID-19 pandemic. Circumstances that cannot be changed will move individuals to adjust to the demands and desires in building relationships with the people around them.

This research is based on the view that online regulative coping strategies can alleviate or relieve loneliness, precisely if participants are given the opportunity to practice various strategies. During this online regulative coping strategy training, participants were given the opportunity to carry out a practical program to adjust to personal standards regarding friendship and friendship. Adapting to personal standards can be achieved by directing attention to trying to be best friends and maintaining hope for friendship. In this exercise program, participants are encouraged to show their expectations about friendship and their behavior as friends and to re-evaluate what they want and do not want from friendship.

The methods used to improve coping styles in this exercise program include reading informational texts, answering questions related to the topic, performing tasks during the study period, watching animated videos, and performing assigned tasks. These methods can stimulate participants to involve themselves in real life, even if only by reading informational texts. Because after reading the informational texts, participants are assigned to greet other previously unknown people, renew relationships with friends they have not seen for a long time, and spend time alone pleasantly at night.

Opportunities to alleviate loneliness through the methods contained in the online regulative coping strategy program are also obtained because participants are given the task of taking real actions: writing down the words that will be said when contacting a friend who has not seen each

other for a long time and communicating by practicing Coping strategies through activities to perform tasks will be more effective than just reading material and watching videos. However, the most important factor to positively influence alleviating loneliness is participants must carry out the exercise properly. If there are reports that participants do not carry out the exercise, then this program will not reduce the loneliness they feel, even the opposite is likely to happen, increased loneliness.

4 Conclusion

The online regulative coping strategy program effectively alleviate loneliness for students affected by COVID-19 pandemic. Considering that COVID-19 pandemic is irreversible, online regulative coping strategies involving several methods are useful in alleviate loneliness. Topics include starting, cultivating, and maintaining friendships, watching animated videos with similar themes, and doing exercises to contact friends who have not seen each other in a long time. If the exercise program is carried out properly, it will effectively alleviate loneliness.

Acknowledgments

Sincere thanks and appreciation to the participants willing to help actualize this research from the beginning to the end. This is an expression of sincere gratitude for the active participation of the entire research team, including the special students who are also involved, Reynerly Wijaya and Tiffany.

References

[1] W. R. Bavel JJV, Baicker K, Boggio PS, Capraro V, Cichocka A, Cikara M, Crockett MJ, Crum AJ, Douglas KM, Druckman JN, Drury J, Dube O, Ellemers N, Finkel EJ, Fowler JH, Gelfand M, Han S, Haslam SA, Jetten J, Kitayama S, Mobbs D, Napper LE, Packer DJ, Pennycook, "Using social and behavioural science to support COVID-19 pandemic response," Nat. Hum. Behav., hal. 1–12, 2020, doi: 10.1038/s41562-020-0884-z.

[2] R. S. Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M., Gill, H., Phan, L., ... & McIntyre, "Impact of COVID-19 pandemic on mental health in the general population: A systematic review," J. Affect. Disord., 2020, doi: https://doi.org/10.1016/j.jad.2020.08.001.

[3] C. S. Pfefferbaum, B., & North, "Mental health and the Covid-19 pandemic," N. Engl. J. Med., 2020, doi: 10.1056/NEJMp2008017.

[4] F. Talevi, D., Socci, V., Carai, M., Carnaghi, G., Faleri, S., Trebbi, E., ... & Pacitti, "Mental health outcomes of the COVID-19 pandemic," vol. 55, no. 3, hal. 137–144, 2020.

[5] Centers for Disease Control and Prevention, "Coronavirus (COVID-19)," 2020, [Daring]. Tersedia pada: www.cdc.gov/coronavirus/2019-ncov/index.html.

[6] H. S. Chen, W. C., Huang, A. S., Chuang, J. H., Chiu, C. C., & Kuo, "Social and economic impact of school closure resulting from pandemic influenza A/H1N1," J. Infect., vol. 62, no. 3, hal. 200–203, 2011, doi: doi.org/10.1016/j.jinf.2011.01.007.

[7] T. Reger, M. A., & Stanley, I. H. y Joiner, "Suicide mortality and coronavirus disease 2019-A perfect storm," JAMA Psychiatry, 2020, doi: 10.1001/jamapsychiatry.2020.1060.

[8] J. Thunström, L, Newbold, SC, Finnoff, SC, Ashworth, M, Shogren, "The benefits and costs of flattening the curve for COVID-19," SSRN Electron. J., hal. 1–17, 2020, doi: doi.org/10.1017/bca.2020.12.

[9] S. Asmundson, G. J., & Taylor, "How health anxiety influences responses to viral outbreaks like COVID-19: What all decision-makers, health authorities, and health care professionals need to know," J. Anxiety Disord., vol. 71,102211, 2020, doi: 10.1016/j.janxdis.2020.102196.

[10] J. Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, "The psychological impact of the COVID-19 epidemic on college students in China," Psychiatry Res., vol. 112934, 2020, doi: https://doi.org/10.1016/j.psychres.2020.112934.

[11] F. Wang, G., Zhang, Y., Zhao, J., Zhang, J., & Jiang, "Mitigate the effects of home confinement on children during the COVID-19 outbreak," Lancet, vol. 395, no. 10228, hal. 945–947, 2020, doi: DOI:https//doi.org/10.1016/S0140-6736(20)30547-X.

[12] W. Zhang Stephen, X., Yifei, W., Andreas, R., & Feng, "Unprecedented disruption of lives and work: Health, distress and life satisfaction of working adults in China one month into the COVID-19 outbreak," 2020, doi: https://doi.org/10.1016/j.psychres.2020.112958.

[13] K. L. Tull, M. T., Edmonds, K. A., Scamaldo, K., Richmond, J. R., Rose, J. P., & Gratz, "Psychological Outcomes Associated with Stay-at-Home Orders and the Perceived Impact of COVID-19 on Daily Life," Psychiatry Res., vol. 113098, 2020, doi: https://doi.org/10.1016/j.psychres.2020.113098.

[14] J. T. Hawkley, L. C., Browne, M. W., & Cacioppo, "How can I connect with thee? Let me count the ways.," Psychol. Sci., vol. 16, no. 10, hal. 798–804, 2005, doi: https://doi.org/10.1111/j.1467.9280.2005.01617.x.

[15] G. G. Cacioppo, J. T., Hawkley, L. C., Crawford, L. E., Ernst, J. M., Burleson, M. H., Kowalewski, R. B., ... & Berntson, "Loneliness and health: Potential mechanisms," Psychosom. Med., vol. 64, no. 3, hal. 407–417, 2002.

[16] J. T. Hawkley, L. C., Burleson, M. H., Berntson, G. G., & Cacioppo, "Loneliness in everyday life: cardiovascular activity, psychosocial context, and health behaviors," J. Pers. Soc. Psychol., vol. 85, no. 1, hal. 105, 2003, [Daring]. Tersedia pada: https://psycnet.apa.org/doi/10.1037/0022-3514.85.1.105.

[17] T. E. Tilvis, R. S., Kähönen-Väre, M. H., Jolkkonen, J., Valvanne, J., Pitkala, K. H., & Strandberg, "Predictors of cognitive decline and mortality of aged people over a 10-year period," Journals Gerontol. Ser. A Biol. Sci. Med. Sci., vol. 59, no. 3, hal. M268–M274, 2004, doi: https://doi.org/10.1093/gerona/59.3.M268.

[18] N. A. Cacioppo, J. T., Fowler, J. H., & Christakis, "Alone in the crowd: the structure and spread of loneliness in a large social network," J. Pers. Soc. Psychol., vol. 97, no. 6, hal. 977, 2009.

[19] J. T. Masi, C. M., Chen, H. Y., Hawkley, L. C., & Cacioppo, "A meta-analysis of interventions to reduce loneliness," Personal. Soc. Psychol. Rev., vol. 15, no. 3, hal. 219–266, 2011, doi: doi: 10.1177/1088868310377394.

[20] D. Cacioppo, J. T., Hawkley, L. C., Ernst, J. M., Burleson, M., Berntson, G. G., Nouriani, B., & Spiegel, "Loneliness within a nomological net: An evolutionary perspective.," J. Res. Pers., vol. 40, no. 6, hal. 1054–1085, 2006, doi: https://doi.org/10.1016/j.jrp.2005.11.007.

[21] N. Andersson, G., Berg, M., Riper, H., Huppert, J. D., & Titov, "The Possible Role of Internet-Delivered Psychological Interventions in Relation to the COVID-19 Pandemic," Clin. Psychol. Eur., vol. 2, no. 3, hal. 1–4, 2020, doi: https://doi.org/10.32872/cpe.v2i3.3941.

[22] P. Miloff, A., Lindner, P., & Carlbring, “The future of virtual reality therapy for phobias: Beyond simple exposures,” Clin. Psychol. Eur., vol. 2, no. 2, 2020, doi: https://doi.org/10.32872/cpe.v2i2.2913ggih.
[23] N. L. Bouwman, T. E., Aartsen, M. J., van Tilburg, T. G., & Stevens, “Does stimulating various coping strategies alleviate loneliness? Results from an online friendship enrichment program,” J. Soc. Pers. Relat., vol. 34, no. 6, hal. 793–811, 2017, doi: https://doi.org/10.1177/0265407516659158.
[24] T. Jong-Gierveld, J., & Van Tilburg, “A 6-Item Scale for Overall, Emotional, and Social Loneliness: Confirmatory tests on survey data. Research on Aging,” vol. 28, no. 5, hal. 582–598, 2006, doi: https://doi.org/10.1177/0164027506289723.
[25] N. L. Stevens, “Well-Being in widowhood: A question of balance.,” 1989.