

Validation of Cognitive-based Mindfulness Program to Reduce Suicidal Ideation in Individuals with Depression

Ainurizan Ridho Rahmatulloh¹, Sofia Retnowati²

^{1,2}Faculty of Psychology, Universitas Gadjah Mada

Submitted 5 January 2021 Accepted 19 March 2021 Published 31 May 2021

Abstract. Suicide is a global epidemic phenomenon that is the third most common cause of death in the world. However, not many studies have focused on developing an intervention that specifically targets symptoms of suicidal ideation. Suicidal ideation is seen as part of a depressed condition. The purpose of this study was to validate a cognitive-based mindfulness program to reduce suicidal ideation in people with depression. The study was conducted through internal validity tests using expert judgment and external validity tests using the small-n AB design method, which involved three participants ($n = 3$). The visual inspection analysis was performed on the mean, trend, and level. Analysis of repeated measurements showed a decrease in suicidal ideation in all participants. This program has the potential to be developed as a companion to conventional interventions and can be an alternate activity to fill the waiting time for individuals to get the main intervention.

Keywords: cognitive therapy; mindfulness; suicidal ideation

Suicide is a global epidemic phenomenon which is the third leading cause of death in the world (World Health Organization [WHO], 2018). According to data from WHO, around 800,000 people lost their lives due to suicide; which means that every 40 seconds there is someone who conducts suicide. Based on the WHO's estimation, in 2020, the rate of global suicide would be up to 2.4 per 100,000 people (WHO, 2016). The emergence of suicidal ideation often happens to individuals with depression. It happens because the thought pattern of an individual with depression tends to be biased. According to Haaga and Beck (1995), an individual with depression displays two information processing patterns: selective abstraction and overgeneralization. A study by Kingsley and Amisah (2014) found a mutual and cyclical relationship between depression and cognitive distortion; which means that depression can predict cognitive distortion while reversely, cognitive distortion can cause depression.

Lau et al. (2004) also explained that suicidal ideation is a thought pattern that can be formed at the initial depression episode. The thought pattern will be more active when the person is facing a stressful situation. Suicidal ideation is a symptom that tends to persist compared to other depression symptoms such as difficulty to fall asleep, fatigue, and loss of appetite (Williams et al., 2006). The ideation can appear in all depression episodes, not only the severe ones. An individual might look normal despite having suicidal ideation (Williams et al., 2006).

An intervention that can be used to deal with suicidal ideation is cognitive behavioral therapy (CBT), which aims to provide understanding about maladaptive thoughts and teach

coping strategies (Alavi et al., 2013); dialectical behavior therapy (DBT), which provides psychoeducation and develop social skills involving family (Mehlum et al., 2014). There is an attention-based family therapy, which is an intervention that focuses on strengthening the relationship between a child and parents when suicidal ideation occurs (Diamond et al., 2010). Lastly, there is also mindfulness-based stress reduction (MBSR) which trains an individual to lead a mindful life by focusing on the now and accepting thoughts without judgment (Serpa et al. 2014).

The forms of interventions that involve other people like family members are great because they consider social support. However, in certain situations, the presence of others is not easily obtained. It is true, particularly among people who live far from their family or have limited social circles. Thus, the approach that suits such conditions is the combination of the cognitive approach and mindfulness. The cognitive approach is useful to develop an understanding of thought mechanisms. Meanwhile, mindfulness is utilized to provide individual training so that the person can live mindfully and experience thoughts non-judgmentally.

An intervention that combines a cognitive approach and mindfulness is mindfulness-based cognitive therapy (MBCT). MBCT is shortly a combination of cognitive elements and mindfulness meditation exercises. Kabat-Zinn (1994) described mindfulness as a set of steps to centralize attention on each moment without judgment. The cognitive element of MBCT consists of education about the symptoms, the role of negative thoughts, and strategies to overcome maladaptive thoughts.

Studies on MBCT intervention on individuals with depression who have suicidal ideation showed that MBCT can reduce the symptoms of depression (Clarke et al., 2015; Crane et al., 2008; Kenny & Williams, 2007; MacKenzie et al., 2018). The finding is aligned with findings from Barnhofer et al. (2015) and Hargus et al. (2010) in individuals with a history of suicide attempts, which showed that MBCT can weaken the relationship between depression and the reappearance of suicidal ideation. The exercise of the mental processing system in MBCT can help the person to get out of the maladaptive pattern in that cognitive reaction.

A randomized controlled trial (RCT) study by Forkman et al. (2014) found that MBCT can reduce suicidal ideation. The finding showed that the reduction of suicidal ideation is strongly associated with worry, which can trigger dysfunctional mindsets such as suicidal ideation. Other studies also revealed that MBCT can reduce the prevalence of symptoms in patients with depression compared to a group that was given other forms of intervention (TAU) (Coelho et al., 2007; Kuyken et al., 2008; Teasdale et al., 2000; Segal et al., 2013). Studies in several countries showed that MBCT is effective across varied cultural backgrounds (Kirmayer, 2015; Zamestani & Fazeli, 2019). The finding is in line with a study by Tickell et al. (2020) which found consistent results; MBCT can reduce the severity of depression, help with the recovery process, and lower the risk of relapse. Thus, MBCT can be concluded to be effective in reducing suicidal ideation in varied socio-demographic profiles.

The aim of this study was to validate a cognitive-based mindfulness program to reduce suicidal ideation in individuals with depression. The program was expected to be able to reduce suicidal ideation through a cognitive approach and meditation exercises. The program's validity needs to undergo a series of internal and external validity tests (Azwar, 2018). Internal validity is done to see the program's suitability with the objective of the intervention. Meanwhile, external validity is necessary to see the change in an individual before and after given the intervention (Azwar, 2018). The hypothesis proposed in this study was that a cognitive-based mindfulness program can reduce suicidal ideation in individuals with depression.

Method

Procedure

The study underwent two main procedures, namely internal validity and external validity. Internal validity was done through expert judgment by 7 experts with psychology backgrounds (licensed psychologists and lecturers). The experts were asked to give scores ranging from 1 to 5 for the following aspects: a) the activity design for each session, b) the compatibility between activities and intervention's objective, c) the allocated time, d) the tasks given to participants, e) suitability to ethical code and f) the module's presentation. The scoring results from experts were then analyzed using Aiken's V method.

The external validity of the study was done using a single-case, small-n experiment model with AB design. Participants in this study were three people. The participants went through three phases: a) baseline phase (A), b) intervention phase, and c) follow-up phase. In each phase, the participants were observed and measured repeatedly. A single case design puts more focus onto each individual, thus from the detailed observation, the outcome will be more specific. The distinctive features of single-case design make it very usable in studies within clinical settings and it plays an important role in the history of psychotherapy development (Kazdin, 1982).

Participants

There were three participants in this study who had the following characteristics: university students, aged between 18 and 25 years old, had suicidal thoughts in the past three weeks, could perform daily activities as usual, and were not under medical or psychological treatment during the study period. The sampling technique used in the study was purposive sampling. Researchers used non-random sampling to select participants who fully fulfilled the research criteria. The high level of suicidal ideation in participants referred to the Suicidal Ideation Attributes Scale (SIDAS) and the criteria of depression used PHQ-9.

Research instruments

Cognitive-based Mindfulness Program Module

The program was developed according to the principles of experiential learning. Kolb and Kolb (2005) explained that experiential learning involves using direct experience in the learning process and feedback mechanism given to participants after practicing the materials. The principles were applied by having sharing and feedback session after every mindfulness meditation training session. Additionally, the experiential learning principle implemented is that learning is a holistic adaptation process in which elements cannot be separated. Thus, it is not only a result of the cognitive process, but also the integration of all individual functions namely cognition, behavior, and emotion. The principle is applied by developing a program that incorporates cognitive function through psychoeducation, behavioral function through exercise activities, and emotional function through sharing feelings. The program's components were derived from Mindfulness-based Cognitive Therapy (Teasdale et al., 2014) as shown in Table 1.

Table 1.

Components of MBCT Program

Components of MBCT Program (Teasdale et al., 2014)	Implication
Mindful eating (focusing on meal activity)	Developing awareness to defy the autopilot mode during meal activity
Body scan (focusing on each body part)	Exercising to experience physical sensations directly and experience the body condition just as it is
Mindful breathing (using breathing to focus)	Settling at the current situation and train oneself to see the appearing thought just as it is
Mindful walking (paying attention to the body while moving)	Exercising to realize the appearance of body sensation, pleasant or not
Mindfulness of sound, thought and feelings	Exercising to see thought patterns and feelings that arise
Psychoeducation about the relationship between thoughts and feelings	Providing understanding that thoughts can affect feelings
Psychoeducation about autopilot.	Providing understanding about automatic pilot mode that can cause thoughts to not be evaluated well

The components of MBCT by Teasdale et al. (2014) were compiled for people with depression. Therefore, to develop an intervention program that specifically targets the reduction of suicidal ideation, some components should be modified. Rudd (2012) described that several effective therapies to reduce suicidal ideation share common characteristics: a) focusing specifically on suicidal ideation and not only the effect of the symptom, b) using a clear theoretical framework, 3) focusing on teaching skills, d) providing access to

information during a critical period, e) emphasizing on individual’s responsibility, and 6) participant’s adherence towards the process of therapy.

Based on that finding, the researchers arranged a cognitive-based mindfulness program by adding the components of cognitive therapy for suicidal patients (Wenzel et al., 2009). Table 2 describes the components of the therapy.

Table 2.
Components of Cognitive Therapy for Suicidal Patients

Components of Cognitive Therapy for Suicidal Patients (Wenzel et al., 2009)	Implication
Sharing (initial assessment)	Knowing the background of each participant and their experience in dealing with suicidal ideation.
Safety – Planning	Developing plan to face crisis as a personal responsibility which encompasses warning signs, means to distract oneself from suicidal thoughts, and information about professional service.
Psychoeducation about the appearance of suicidal ideation	Providing knowledge about the formation of suicide thought through a theoretical framework.
Making Coping Card	Training participants to motivate themselves and find strategies to deal with crisis.
Making Hope Kit	Activities for relapse prevention by compiling valuable items and summary of therapy process.

Those components were then combined into a program according to the module development principle by Russell and Johanningsmeier (1981). The program starts with an initial assessment to see the participants’ characteristics, the instruction is designed according to the principle of concrete instruction to the more abstract one, then the design of partial activities towards integrated activities.

Measuring instruments

The measurements used for external validity were: a) *Patient Health Questionnaire (PHQ-9)* which has Cronbach’s alpha = 0.863 (Blackwell & McDermott, 2014). The PHQ-9 was used to screen the depression in each participant. b) *Suicidal Ideation Attributes Scale (SIDAS)* which was developed by Spijker et al. (2014) with Cronbach’s alpha value = 0.867. The unidimensional scale consists of 5 items with options ranging from 1 to 10. The aspects of SIDAS are frequency, controllability, closeness to attempt, level of distress, and impact of daily function. c) *the manipulation check* using the Kentucky Inventory of Mindfulness Skills (KIMS) that had been modified by Astuti (2017) with Cronbach’s alpha coefficient = 0.815.

The emotion monitoring was done to the aspect of negative emotions that has a strong association with suicidal ideation, including disappointment (Connor et al., 2010), feeling of failure (Beur et al., 2019; Littlewood et al., 2017; O’Connor & Kirtley, 2018), hopelessness (Abramason et al., 2002; Klonsky & May, 2015; Valentina & Helmi, 2016), loneliness (Chang et al., 2017) and sadness (Zhang et al., 2019).

Study design

External validation implemented in the present study used a single-case, small-N experiment model with AB design which involved three participants. The participants underwent three phases: a) baseline phase (three days before the intervention), b) intervention phase (for four days), and follow up (seven days after intervention). For each phase, the participants were observed and measured repeatedly. The analysis was done using visual inspection. The components examined by visual inspection are the change in the mean score, level, and trend (Lobo et al., 2017; Sunanto et al., 2005). The change of components was observed in each phase done by participants then compared with their own data (Lobo et al., 2017).

Results

Internal validity

Based on an assessment by seven experts, the lowest Aiken’s V coefficient obtained was 0.71 and the highest was 1.00. The average Aiken’s V score for activities in the module was 0.84, the average score for module’s tasks was 0.83, and the overall score for the module was 0.80. The detailed Aiken’s V scores can be seen in table 3 to table 5.

Table 3.
The Assessment on Activities-Objectives Suitability

Session	Activity	Aiken’s V Coefficient
1	Opening and greetings	1.00
	Program introduction	0.82
	“Kamu tidak sendiri” (Sharing)	0.71
	Safety - Planning	0.86
	Introduction to Automatic Pilot Mode	0.82
	Body Scan Practice	0.79
	Sharing Body Scan experience	0.82
	Tasks	0.86
2	Opening	1.00
	Sharing about the experience of exercising at home	0.93
	Introduction to relationship between thoughts and	0.79

	feeling	
	Psychoeducation about the appearance of suicidal ideation	0.86
	Mindful Breathing Practice	0.79
	Sharing about the experience of mindful breathing	0.82
	Mindful Eating Practice	0.79
	Sharing about the experience of mindful Eating Tasks	0.79
3	Opening	1.00
	Sharing about the experience of exercising at home	0.89
	Seeing negative thought	0.82
	Making coping card	0.86
	Mindful Walking Practice	0.79
	Sharing about the experience of Mindful Walking	0.82
	“Hope Kit” Task	0.75
	Individual task of mindfulness exercises	0.82
	Opening	0.93
4	Sharing about the experience of exercising at home	0.96
	Seeing thought as thought	0.86
	Mindful Sitting (Body, Breath, Sound and Choiceless Awareness) Practice	0.79
	Sharing about the experience of Mindful Sitting	0.79
	Mastery and Pleasure Activity	0.82
	“Hope” Activity	0.89
	Mindfulness and Mastery / Pleasure Task	0.71
	7-days Task with Mindfulness	0.79
	Wrap up	0.93

Table 4.
Assessment on the Tasks for Participants

Session	Tasks	Aiken’s V Coefficient
1	Individual <i>body scan practice</i>	0.82
2	Recording experience	0.86
3	Individual <i>mindful eating practice</i>	0.82
4	Individual <i>mindful breathing practice</i>	0.82

Table 5.
Overall Assessment of the Module

No.	Aspects	Aiken's V Coefficient
1	Activities are in accordance with ethics code	0.75
2	The activities have clear objectives	0.86
3	The activity plotting is clear	0.79
4	Activities can be done within the planned duration	0.71
5	Describing the roles of facilitator clearly	0.79
6	The worksheet supports the activities	0.89
7	The size of module is suitable for the facilitator	0.82
8	The text is neat and easy to read	0.82

External validity

MR

Suicidal ideation

According to the SIDAS assessment conducted in the baseline phase, MR showed a score stability rate between 80% and 90% from the data (Sunanto et al., 2005), with every score fell within the range of 35.694-43.626. Stable scores during the baseline phase indicate that the participant is ready to receive the intervention. Further information can be seen figure 1 and table 6.

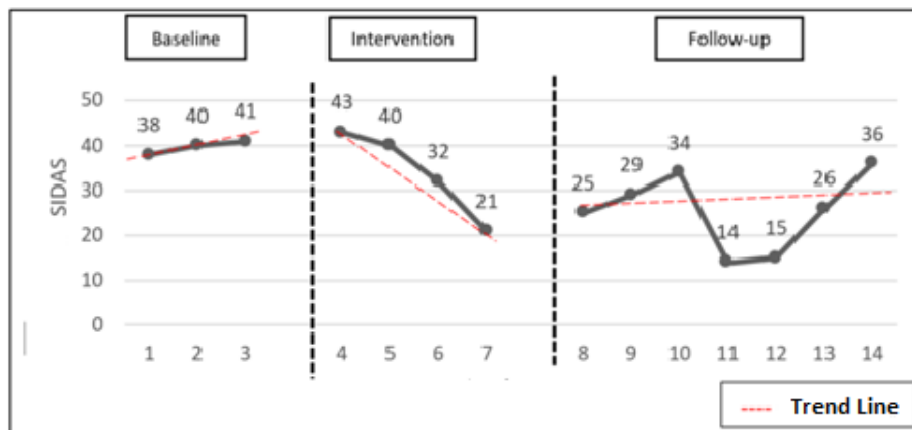


Figure 1. Observation on MR's suicidal ideation

Table 6.

Visual Inspection on MR

Visual Inspection	Baseline	Intervention	Follow-up
Mean	39.66	34	25.57
Trend	Increase	Decrease	Decrease
Stability	Stable (100%)	Unstable (25%)	Unstable (28%)
Level Change in a Phase	41-38 = 3 (Worsened)	43-21 = 22 (Improved)	36-25 = 11 (Worsened)
Level Change between Phases	43-41 = 2 (Worsened)	21-25 = 4 (Worsened)	38-36 = 2 (Improved)

During the intervention phase, it can be seen that the trend line (the intermittent line) comes down. It shows that suicidal ideation was reduced during the intervention phase. In addition to a change of trend, there were also changes of level and mean score in MR. During the baseline phase, MR showed an increase of SIDAS score up to 3 points, while during the intervention there was a reduction of 22 points. The change of SIDAS mean score also happened in measurements conducted between baseline and intervention phases. In the baseline phase, the SIDAS mean score was 39.66 and after entering the intervention phase the mean score changed to 34. After that, during the follow-up phase for seven days, the mean score was down to 25.571.

Emotion monitoring

Emotion monitoring was performed to provide additional data. The monitoring was conducted on the intensity of disappointment, feeling of failure, hopelessness, loneliness, and sadness. Monitoring as an additional data collection method was only done during the intervention and follow-up phases. When the intervention was given, there were reductions of all emotional aspects. Meanwhile, during the follow-up phase, the emotional aspects saw an increase. It implies that negative emotions only arose during the first four days of intervention, while after it ended, the trend of emotional change tended to go up (Figure 2).

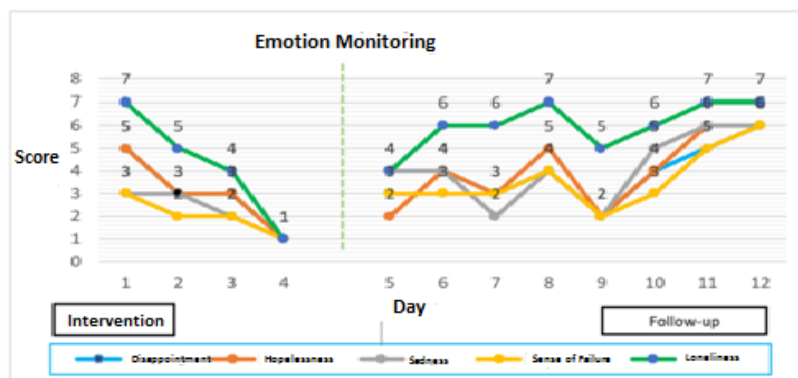


Figure 2. Emotion monitoring on MR

Manipulation check

Based on the score comparison of manipulation checks using KIMS prior and after the intervention, MR experienced a 3-point reduction in KIMS score, from 28 to 25. According to inter-rater observation with three observers, MR showed an average score of 3.5 out of 4. It means that MR had participated in the mindfulness training well, namely: following the facilitator’s instructions, doing proper meditation postures, and showing a relaxed body.

MT

Suicidal ideation

During the baseline phase, MT showed 66% score stability with a range of scores between 27.594 and 33.726. In the visual inspection, it can be seen that the trend line went down during the intervention and follow-up phases. This indicates a decrease in suicidal ideation when MT participated in the intervention, and the decrease still occurred during the follow-up phase. Further information can be seen in figure 3 and table 7.

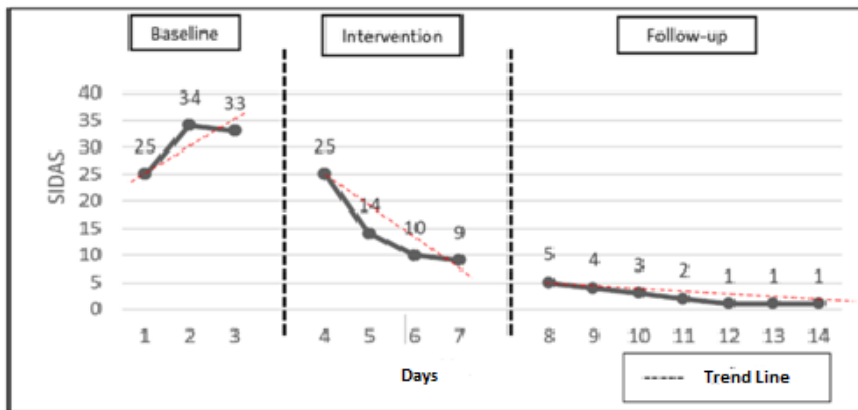


Figure 3. Visual inspection on MT's suicidal ideation

Table 7.

Visual Inspection on MT

Visual Inspection	Baseline	Intervention	Follow-up
Mean	30.66	14.5	2.42
Trend	Increase	Decrease	Decrease
Stability	Unstable (66%)	Unstable (25%)	Unstable (14%)
Level Change in a Phase	33-25 = +8 (Worsened)	9-25 = -16 (Improved)	1-5 = -4 (Improved)
Level Change between Phases	33-25 = +8 (Worsened)	5-9 = -4 (Worsened)	1-25 = -24 (Improved)

In the visual inspection, changes in level and mean scores were also visible. During the baseline phase, MT showed an increase in SIDAS score up to 8 points. Meanwhile, during

the intervention, there was a 16-point decrease in the score. The shift of mean score also occurred during measurements performed between baseline and intervention phases. During the baseline, the SIDAS mean score was 30.66 but when entering the intervention phase the score became 14.5. Monitoring during the follow-up phase showed a depleting trend line and the mean score change became 2.42. It implies that the effect of intervention could last for seven days after the intervention.

Emotion monitoring

Monitoring was performed on the intensity of disappointment, feeling of failure, hopelessness, loneliness, and sadness. The monitoring was only done during the intervention and follow-up phases to see the participant’s emotional condition without the support of the facilitator. During the intervention, there was a trend of depleting intensity in all aspects of emotion. It also happened during monitoring in a follow-up phase that showed continuously decreasing emotion intensity. The monitoring result is described in figure 4.

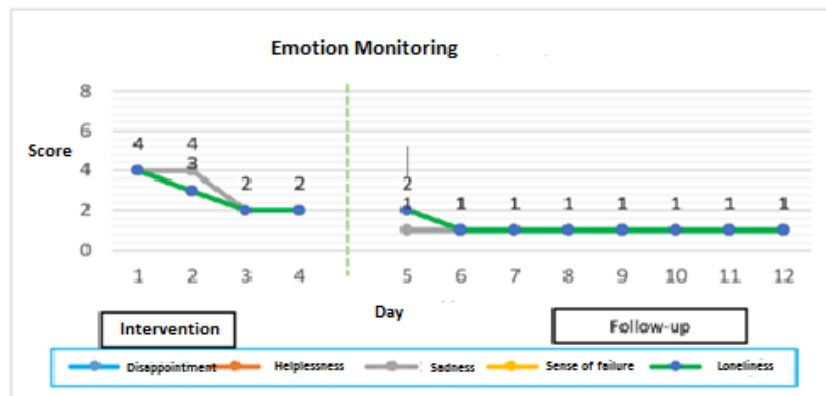


Figure 4. MT's emotion monitoring

After the intervention phase, the decrease became stable for all aspects of emotion. It showed that in seven days without the intervention, MT only experienced a very low level of disappointment, hopelessness, sadness, feeling of failure, and loneliness.

Manipulation check

Based on the comparison of manipulation check scores using KIMS before and after the intervention; MT experienced a 16-point increase in the score, from 43 to 59. The result was aligned with the inter-rater observation by three observers. MT got an average score of 3.6 out of 4 which means that MT participated in the mindfulness training well during the intervention phase. MT could follow the instructor, showed appropriate mediation posture, and showed a relaxed body. In addition, during the intervention phase, MT could participate in the discussion well. She was able to tell her experiences and write tasks given by the facilitator.

KJ

Suicidal ideation

In the baseline phase, KJ showed a score stability, with the stability criterion between 80% and 90% of the data. It means that all scores were within the range of 19.494-23.826. Visual inspection on the trend lines showed decreases in the intervention and follow-up phases. This indicates that there was a decrease in suicidal ideation in KJ during the two phases. Further information can be seen figure 5 and table 8.

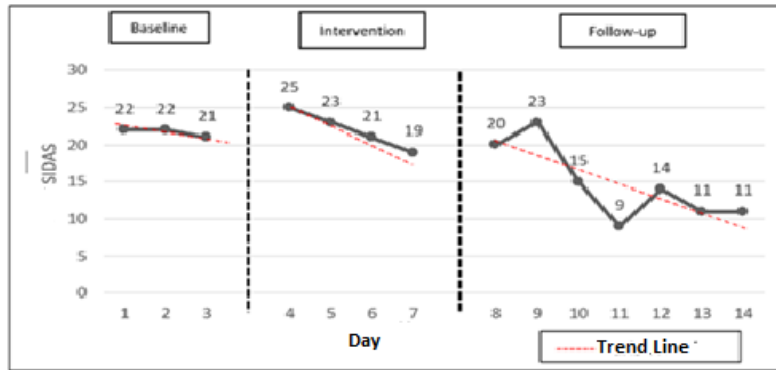


Figure 5. Visual inspection on KJ's suicidal ideation

Table 8.

Visual Inspection on KJ

Visual Inspection	Baseline	Intervention	Follow-up
Mean	21.66	22	14.71
Trend	Decrease	Decrease	Decrease
Stability	Stable (100%)	Unstable (50%)	Unstable (28%)
Level Change in a Phase	21-22 = -1 (Improved)	19-25 = -6 (Improved)	11-20 = -9 (Improved)
Level Change between Phases	25-21 = +4 (Worsened)	20-19 = +1 (Worsened)	11-22 = -11 (Improved)

Visual inspection of the graphic also showed changes in level and mean score in KJ. The level shift during the baseline phase showed an increase in SIDAS score up to 1 point (worsened). Meanwhile, after the intervention, there was a 6-point score reduction (improved). The change of mean score also occurred between baseline and intervention. During the baseline, KJ's SIDAS mean score was 21.66 and then the mean became 22 after entering the intervention phase, showing an increase of 0.34. However, during the follow-up period (without intervention), the score of suicidal ideation decreased to 14.71.

Emotion monitoring

Researchers conducted monitoring on the intensity of disappointment, feeling of failure, hopelessness, loneliness, and sadness during the intervention and follow-up phases. In the intervention phase, there was a trend of decrease in all aspects of emotion. The result can be seen in figure 6.

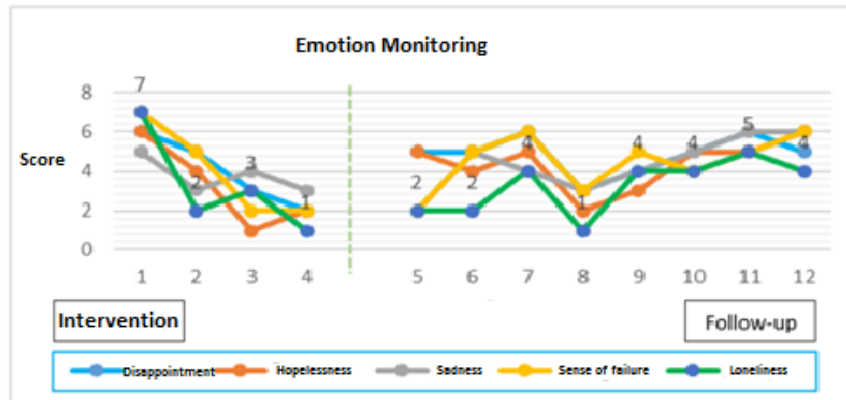


Figure 6. Emotion monitoring on KJ

It showed that while KJ participated in the mindfulness intervention, there was a decrease in the intensity of negative emotion. However, during the follow-up phase, a change of trend in emotion intensity tended to increase. It can be concluded that the decrease of emotion intensity only occurred during the intervention phase. However, in the seven days without intervention, the intensity tends to increase.

Manipulation check

KJ experienced a 1-point increase in KIMS score, from 45 to 46. The increase indicated that there was a slight increase in mindfulness skills in KJ. According to interrater observation, KJ participated well in the mindfulness training during the intervention phase. On average, KJ achieved 3.5 out of 4 points which means that in every session, KJ could follow the instruction, show the proper meditation posture, and have a relaxed body. Moreover, KJ could discuss the session's materials, tell their story, and finish tasks.

Discussion

The study aimed to validate a cognitive-based mindfulness program in its effort to reduce suicidal ideation. Based on internal validity in the form of assessment by seven experts, Aiken's V scores which ranged from 0.71 to 1.00 were obtained. Thus, the program is concluded to have adequately validated activity components. The program components were arranged accordingly; starting from concrete activities like education about thought mechanisms to more abstract activities such as practicing mindfulness. The principle of module development starting from concrete concept to abstract concept makes it easier for someone to learn the materials and increase competence (Russell & Johanningsmeier, 1981).

Based on the repeated measures using SIDAS, it was found that the decrease of suicidal ideation happened after the second meeting. The decrease happened in the three participants and could be seen in the mean score, level, and trend line. Evaluations from the participants revealed that they were capable not to get caught up in the arising thoughts. Participants could develop the here-and-now ability to anchor them from getting swept up by negative thoughts that led to suicide intention. The decrease in suicidal ideation lasted for seven days after the intervention. The finding is aligned with a study conducted by Barnhofer et al. (2015) which found an individual who received mindfulness intervention can see reduced suicidal ideation compared to individuals who receive a conventional intervention. Someone with suicidal ideation has re-occurring thoughts and mindfulness skills could equip the person with an ability to see thoughts without judgment (decentering) and here-and-now.

At the beginning of the intervention, there was a sharing session in a group setting so participants could share their backgrounds and problems. The study found that interactions with people who have similar characteristics and background problems can provide a sense of togetherness. It is aligned with the finding from Whitlock et al. (2014) that togetherness can provide someone with connectedness, a sense of being valued, and feeling close to a helpful resource. On the other hand, loneliness, because there is no connectedness with others, might be a risk factor that causes an individual to develop suicidal ideation (Czyz et al, 2018; Joiner, 2005; O'Connor & Kirtley, 2018).

The sharing session, which facilitated participants to do self-disclosure at the beginning after baseline, did not immediately reduce the severity of suicidal ideation. It was evident in the SIDAS score that started to decrease in the second session. This occurred because, during the sharing session, participants started to validate their problems and become more open to the repressed issues. An individual with suicidal ideation tends to have a low self-disclosure tendency about the ideation (Horesh & Apter, 2006). The person chooses to remain silent to avoid stigma, protect privacy, maintain well-being, and avoid intervention from other people who they cannot trust yet (Hom et al., 2017). However, by avoiding the self-disclosure process, they might feel even lonelier.

The mindfulness skills taught in this program were strengthened by psychoeducation about the mechanism of thought processing, thus participants could have a more rational understanding that thought is not a fact or truth. An individual with suicidal ideation tends to have a dichotomic and rigid mindset as well as negative self-evaluation (Luoma & Villate, 2012). The person will develop suicidal ideation through the mediating process of entrapment when faced with life problems (Li et al., 2018; O'Connor & Kirtley, 2018; Shelef et al., 2016). The sense of being entrapped arises when the person does not have alternative ways to get out. Mindfulness skills provide alternative methods to deal with life problems, such as observing the occurring thought, so that an individual can distinguish between helpful and disturbing thoughts.

The novelty of the present study is the development of an intervention program that focuses on suicidal ideation, thus not only viewing suicidal ideation as a part of depression.

Different from previous studies, the present study modified the MBCT program by adding a cognitive approach that focuses on suicidal ideation. Therefore, participants received specifically tailored methods to deal with the ideation, such as hope kit and safety planning.

The strength of the present study is repeated measures in each participant, thus providing more data on the dynamic of suicidal ideation and participants' emotional condition every single day. In addition, the study performed data triangulation by inter-rater observers to provide more objective data. This study was conducted for four days without break, thus minimizing the threat of confounding variables between interventions.

The study has several limitations. First, the single-case research model cannot immediately be generalized therefore there is a series of steps to replicate the study. The brief duration of the intervention phase did not only benefit the study but also became its limitation as participants might not have enough time to process the information given. It could also potentially incite fatigue in participants.

Conclusion

The finding showed that the cognitive-based mindfulness program was proven to reduce suicidal ideation in an individual with depression. It is visible from the changes in level, trend, and mean score between the baseline and intervention phases. In addition, the decrease in suicidal ideation could last for seven days after the intervention. Thus, a cognitive-based mindfulness program was substantially and empirically valid in reducing suicidal ideation individually.

Suggestion

The program has the potential to be developed as an accompaniment to conventional intervention and can be an alternative activity to fill the time while a client is waiting for the main intervention.

References

- Abramson, L.Y., Lauren, B., Hogan, Wayne, G. Brandon, E., & Cornete.(2002) The Hopelessness Theory of Suicidality. *In: Suicide Science*. Boston : Springer.
- Alavi, A., Sharifi, B., Ghanizadeh, A., & Dehbozorgi, G. (2013). Effectiveness of cognitive-behavioral therapy in decreasing suicidal ideation and hopelessness of the adolescents with previous suicidal attempts. *Iran J Pediatr*, Vol. 23(4), DOI: 10.1016/j.neurenf.2012.04.266.
- Astuti, N., B. (2017). *Program intervensi berbasis mindfulness untuk meningkatkan kesejahteraan psikologis caregiver pasien kanker anak* (Unpublished master's thesis). Master of Professional Psychology, Universitas Gadjah Mada.
- Azwar, S. (2018). *Metode penelitian psikologi* (2nd Ed.). Pustaka Pelajar

- Barnhofer, T., Crane, C., Brennan, K., Duggan, D. S., Crane, R. S., Eames, C., . . . Williams, J. M. G. (2015). Mindfulness-based cognitive therapy (MBCT) reduces the association between depressive symptoms and suicidal cognitions in patients with a history of suicidal depression. *Journal of Consulting and Clinical Psychology, 83*(6), 1013-1020. <http://dx.doi.org/10.1037/ccp0000027>
- Beck, A. T. & Alford, B. (2009). *Depression cause and treatment* (2nd Ed.). University of Pennsylvania Press.
- Beurs, D., Fried, E., Wetherall, K., Cleare, S., & Connor, R. (2019). Exploring the psychology of suicidal ideation: A theory driven network analysis. *Behaviors Research and Therapy, 120*, 103419. <http://dx.doi.org/10.1016/j.brat.2019.103419>
- Blackwell, T. L., & McDermott, A. N. (2014). Review of Patient Health Questionnaire-9 (PHQ-9). *Rehabilitation Counseling Bulletin, 57*(4), 246-248. <http://dx.doi.org/10.1177/0034355213515305>.
- Chang, E. C., Wan, L., Li, P., Guo, Y., He, J., Gu, Y., ... Hirsch, J. K. (2017). Loneliness and suicidal risk in young adults: Does believing in a changeable future help minimize suicidal risk among the lonely? *The Journal of Psychology, 151*(5), 453-463. <http://dx.doi.org/10.1080/00223980.2017.1314928>
- Clarke, K., Mayo-Wilson, E., Kenny, J., & Pilling, S. (2015). Can non-pharmacological interventions prevent relapse in adults who have recovered from depression? A systematic review and meta-analysis of randomized controlled trials. *Clinical Psychology Review, 39*, 58-70. <http://dx.doi.org/10.1016/j.cpr.2015.04.002>
- Coelho, H. F., Canter, P. H., & Ernst, E. (2007). Mindfulness-based cognitive therapy: Evaluating current evidence and informing future research. *Journal of Consulting and Clinical Psychology, 75*(6), 1000-1005. <http://dx.doi.org/10.1037/0022-006x.75.6.1000>
- Connor, S., Jobes, D., Lineberry, T., & Bostwick, J. (2010). An investigation of emotional upset in suicide ideation. *Archives of Suicide Research, 14*(1), 35-43. <http://dx.doi.org/10.1080/13811110903479029>
- Crane, C., Barnhofer, T., Duggan & Williams, J. (2005). Mindfulness-based cognitive therapy and self-discrepancy in recovered depressed patient with a history on depression and suicidality. *Cognitive Therapy Research, 32*(8), 775. <http://dx.doi.org/10.1007/s10608-008-9193-y>
- Czyz, E., K., Horwitz, A., G., Arango, A. & King, C. (2018). Short-term change and prediction of suicidal ideation among adolescents: a daily diary study following psychiatric hospitalization. *Journal Child Psychology Psychiatry, 60*(7), 732-741. <http://dx.doi.org/10.1111/jcpp.12974>
- Diamond, G., S., Wintersteen, M., Brown, G. & Gallop, R. (2010). Attachment-based family therapy for adolescents with suicidal ideation: A randomized controlled trial. *Adolescent Psychiatry, 49*(2), 122-131. <http://dx.doi.org/10.1016/j.jaac.2009.11.002>.
- Forkman, T., Wichers, M., Geschwind, N., & Collip, D. (2014). Effect of mindfulness-based cognitive therapy on self-reported suicidal ideation: results from a randomized

- controlled trial in patients with residual depressive symptoms. *Comprehensive Psychiatry*, 55(14).
- Haaga, D., A., & Beck, A., T. (1995). Perspectives on depressive realism: Implications for cognitive theory of depression. *Behaviour Research and Therapy*, 33, 41-48. [http://dx.doi.org/10.1016/0005-7967\(94\)E0016-C](http://dx.doi.org/10.1016/0005-7967(94)E0016-C).
- Hargus, E., Crane, C., Barnhofer, T & Williams, J. (2010). Effects of mindfulness on meta-awareness and specificity of describing prodromal symptoms in suicidal depression. *Emotion* 10(1). <http://dx.doi.org/10.1037/a0016825>.
- Hom, M., A., Podlogar, M., Stanley, I. & Joiner, T. (2017). Ethical Issues and Practical Challenges in Suicide Research. *Crisis*, 38(2), 107-114. <http://dx.doi.org/10.1027/0227-5910/a000415>
- Horesh, N. & Apter, A. (2006). Self-disclosure, depression, anxiety, and suicidal behavior in adolescent psychiatric inpatients. *Crisis*, 27(2), 66-71. <http://dx.doi.org/10.1027/0227-5910.27.2.66>
- Joiner, T. E. (2005). *Why people die by suicide*. Harvard University Press.
- Kabat-Zinn, J. (1994). *Wherever you go, there you are. Mindfulness meditation in everyday life*. Hyperion.
- Kazdin, A. (1982). *Single-case research designs*. Oxford University Press
- Kenny, M., & Williams, J. (2007). Treatment-resistant depressed patients show a good response to mindfulness-based cognitive therapy. *Behavior Research and Therapy*, 45, 617-625
- Kingsley, N. & Ammisah, C., M. (2014). Cognitive distortions and depression among undergraduate students. *Research on Humanities and Social Sciences*, 4(4), 69-76.
- Kirmayer, L. J. (2015). Mindfulness in cultural context. *Transcultural Psychiatry*, 52(4), 447-469. <http://dx.doi.org/10.1177/1363461515598949>
- Kolb, A. & Kolb, D. (2005). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning & Education*, 4(2), 193-212. http://dx.doi.org/10.1007/978-1-4419-1428-6_227
- Kuyken W, Byford S, Taylor RS, Watkins E, Holden E, White K, Barrett B, Byng R, Evans A, Mullan E, Teasdale JD. (2008). Mindfulness-based cognitive therapy to prevent relapse in recurrent depression. *Journal of Consultation Clinical Psychology*, 76(6), 966-78. <http://dx.doi.org/10.1037/a0013786>
- Lau, M., A, Segal, Z., Williams, M. (2004). Teasdale's differential activation hypothesis: implications for mechanisms of depressive relaps and suicidal behavior. *Behavior Research and therapy*, 42(9), 1001-1017. <http://dx.doi.org/10.1016/j.brat.2004.03.003>
- Li, S., Yassen, Z., Kim, Briggs, Duffy, & Galynker. (2018). Entrapment as a mediator of suicide crises. *BMC Psychiatry*, 18, 1-10. <http://dx.doi.org/10.1186/s12888-018-1587-0>
- Littlewood, D., Kyle, S., Pratt, D., Petters & Gooding. (2017). Examining the role of psychological factors in the relationship between sleep problems and suicide. *Clinical Psychology Review*, 54, 1-16. <http://dx.doi.org/10.1016/j.cpr.2017.03.009>

- Lobo, M., Moeyaret, M., Cunha, A., & Iryna, B. (2017). Single-case design, analysis and quality assessment intervention research. *Journal Neurological Physiology*, 41(3), 187-197. <http://dx.doi.org/10.1097/NPT.000000000000187>
- Luoma, J., B., & Villatte, J., L. (2012). Mindfulness in the treatment of suicidal individuals. *Cognitive Behavioral Practice*, 19(2), 265–276. <http://dx.doi.org/10.1016/j.cbpra.2010.12.003>
- MacKenzie, M., B., & About, A., & Kocovski, N., L. (2018). Mindfulness-based cognitive therapy in patients with depression: current perspectives. *Neuropsychiatric Disease and Treatment*, 14, 1599-1605.
- Mehlum, L., Tormoen, A., Ramberg, M., Haga, E., & Diep, L. (2014). Dialectical behavior therapy for adolescents with repeated suicidal and self-harming behavior: A Randomized trial. *Journal of the American of Child & Adolescent Psychiatry*, 53(10), 1082-1091.
- O'Connor, R., C., & Kirtley, O. (2018). The integrated motivational-volitional model of suicidal behavior. *Philosophical Transactions of the Royal Society B*, 373, 1-10. <http://dx.doi.org/10.1098/rstb.2017.0268>
- Rudd, M., D.(2009). *Psychological treatments for suicidal behavior: What are the common elements of treatments that work?.* Oxford University Press
- Russell, J., D., & Johanningsmeier, K., A. (1981). *Improving competence through modular instruction.* Hunt Publishing Company
- Segal Z., V, Williams J., M., Teasdale, J., D. (2013). *Mindfulness-based cognitive therapy for depression.* Guilford Press.
- Serpa, G., J., Taylor, S., & Tillisch, K. (2014). Mindfulness-based stress reduction (MBSR) reduces anxiety, depression and suicidal ideation in veterans. *Medical Care*, 52(12). 19-25.
- Shelef, L., Beltz, Y., Fruchter, E., Santo, Y. & Dahan, E. (2016). No way out: Entrapment as moderator of suicide ideation among military personnel. *Journal of Clinical Psychology*, 0(1), 1-15. <http://dx.doi.org/10.1002/jclp.22304>
- Spijker, B., Batterham, P., Calear, L., Farrer, L., Helen, C., Reynolds, J., Kerkhof, J. (2014). The suicidal ideation attributes scale (SIDAS): Community-based validation study of a new scale for measurement of suicidal ideation. *Suicide and Life-Threatening Behavior*, 44(4). <http://dx.doi.org/10.1111/sltb.12084>
- Sunanto, J., Takeuchi, K., & Nakata, H. (2005). *Pengantar penelitian dengan subyek tunggal.* CRICED University of Tsukuba
- Teasdale, John D., Zindel V. Segal, J. Mark G. Williams, Valerie A. Ridgewaya, Judith M. Soulsby, and Mark A. Lau. (2000). Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *Journal of Consulting and Clinical Psychology*, 68(4), 615–623. <http://dx.doi.org/10.1037/0022-006X.68.4.615>
- Teasdale, J., Williams, M., & Segal, Z., (2014). *The mindful way workbook.* The Guilford Press.

- Tickell, A., Susan, B., Bernard, P., Kuyken, W., Marx R., & Pack, S. (2020). The effectiveness of mindfulness-based cognitive therapy (MBCT) in Real-World Healthcare Services. *Mindfulness*, 11, 279–290. <http://dx.doi.org/10.1007/s12671-018-1087-9>
- Valentina, T., D., & Helmi, A., F. (2016). Ketidakberdayaan dan perilaku bunuh diri: Meta-Analisis. *Buletin Psikologi*, 24(2), 123-135.
- Wenzel, A., Brown, G. K., & Beck, A. T. (2009). *Cognitive therapy for suicidal patients: Scientific and clinical applications*. Washington, DC: APA Books.
- Whitlock, J., Wyman, P., & Moore, S. (2014). Connectedness and suicide prevention in adolescents: pathways and implications. *Suicide Life Threat Behavior*, 44(3), 246-72. <http://dx.doi.org/10.1111/sltb.12071>
- WHO (2016, June). "Suicide". Retrieved from: <https://www.who.int/news-room/fact-sheets/detail/suicide> on 23 Agustus 2019
- WHO (2018, Maret). "Suicide in the world, global health estimate". Retrieved from: <https://apps.who.int/iris/rest/bitstreams/1244794/retrieve> on 23 Agustus 2019.
- Williams, J., M, Crane, C., Branhofer, T., Does, V., & Segal, Z. (2006). Recurrence of suicidal ideation across depressive episodes. *Journal of Affective Disorder*, 91, 189-194. <http://dx.doi.org/10.1016/j.jad.2006.01.002>
- Zemestani, M., & Fazeli N., Z. (2020). Effectiveness of mindfulness-based cognitive therapy for comorbid depression and anxiety in pregnancy: a randomized controlled trial. *Archives of Women's Mental Health*, 23, 207–214. <http://dx.doi.org/10.1007/s00737-019-00962-8>
- Zhang, Y., Lei, Y., Song, Y. & Prochaska, J. (2019). Gender differences in suicidal ideation and health-risk behaviors among high school students in Beijing. *Journal of Global Health*, 9(1), 10604. <http://dx.doi.org/10.7189/jogh.09.010604>