



The Development of the Mindfulness for Mental Fitness (Mind-Fit) Program: An Online Mindfulness-Based Cognitive Group Therapy Program for Anxiety and Depression among Filipino College Students

Angelo R. Dullas^{a*}, Edgardo De Jesus^b, Jay C. Santos^c, Randolph Warren
Gregorio T. Mayo II^d

^{a,c,d}*College of Arts and Social Sciences, Central Luzon State University, Science City of Muñoz, Nueva Ecija,
Philippines*

^b*The Graduate School, University of Santo Tomas, España, Manila, Philippines*

^a*Email: dullas.angelo@clsu.edu.ph / angelo.dullas.gs@ust.edu.ph, ^b*Email: ecfrdejesus@ust.edu.ph, ^c*Email:
jcsantos@clsu.edu.ph, ^d*Email: rwtgmayo@clsu.edu.ph****

Abstract

Primarily, the study was conducted to test the efficacy of a newly developed Online Mindfulness-Based Cognitive Group Therapy Program for Anxiety and Depression among Filipino College Students known as Mind-Fit Program. Using One Group Pretest-Posttest Design, participants underwent 5-sessions (5 weeks with 45 minutes-2 hours duration per week). Measures such as Hopkin's Symptom Checklist (HSCL), Patient Health Questionnaire (PHQ-9), Beck Anxiety Inventory (BAI) and Connor-Davidson Resilience Scale 10 were used as pre and post-test measures. Both quantitative and qualitative approaches were used to analyze the data. Results revealed on the quantitative part using paired sample t-test and Cohen's *d* that there is a significant difference on the pre and post-test results on Hopkins Anxiety scale ($t(5) = 17.419, p = .000$) and Beck Anxiety measure ($t(5) = 5.466, p = .005$) with Cohen's *d* of 4.60 and 3.42 respectively. Same pattern was found on the difference of pre and post test on depression measures. Statistically significant findings on both Hopkins Depression subscale ($t(5) = 7.359, p = .002$) and PHQ-9 measure ($t(5) = 5.466, p = .005$) with Cohen's *d* of 4.28 and 2.13 respectively.

* Corresponding author.

On Resilience level, participants significantly improved their resilience after the intervention ($t(4) = -13.01, p = .000$; Cohen's $d = 5.15$). Qualitative part of the study showed that participants experienced positive outcome on the effect of Mind-Fit Program. Using coding cycle, the qualitative part revealed five themes and 17 subthemes. The major themes are Awareness of Thoughts and emotion, Positive Coping, Mindfulness Practice, Positive Group Communication and relationship and Positive Intervention Outcome. Quantitative and qualitative data showed promising results on the effectiveness of the Mind-Fit program. Implications of the study were further discussed.

Keywords: Anxiety; Depression; Filipino College Students; Group Therapy; Resilience; MBCT.

1. Introduction

With the advent of the COVID19 pandemic, several health and wellness issues, specifically mental health concerns, emerged affecting people from all walks of life and at different stages of development. College students, for instance, are one of the most vulnerable sectors in which a high number are affected by psychological health problems brought by the pandemic. For example, [1] explored the prevalence and predictors of mental health issues such as anxiety, depression, and stress on the early onset of the pandemic in which 35% of 2,548 university students in a European country experienced moderate to severe levels of depression, anxiety, and stress. In Asian countries, specifically Philippines and China, [2] found out that compared to Chinese samples, Filipinos experienced higher levels of mental health issues such as anxiety, depression and stress which also includes college students. Filipino samples also report lower confidence on medical services including mental health services and dissatisfaction with health information. Unfortunately, not all affected or will be affected of COVID 19 mental health related concerns have the capability to obtain and afford the services of professionals and centers to address their needs. In the province, especially in Nueva Ecija, there are only few mental health programs and centers that cater the needs of students. A study presented by [3] in the 6th Central Luzon Health Research Forum sponsored by Central Luzon Health Research and Development Consortium, found out that there are lacking mental health institutions in Nueva Ecija, particularly those of community mental health facilities that will address the need for mental health concerns particularly college students.

1.1. Statement of the Problem

The main objectives of the study are the following: (1) measure the level of negative outcomes such Depression and Anxiety and measure positive outcomes such as Resilience (pre-test) of the selected college students; (2) Ascertain the level of negative outcomes such as Depression and Anxiety and measure positive outcomes such as Resilience (post-test) of the selected college students after the group intervention based on Mindfulness Cognitive approach; (3) Determine if there is significant difference between pre-test and post-test results on the negative outcomes such Depression and Anxiety and measure of positive outcomes such as Resilience (pre-test) of the selected college students after the group intervention based on Mindfulness Cognitive approach; (4) Validate the intervention outcome through open-ended questions.

1.2. Significance of the Study

With the scenario detailed in the context, the establishment of an intervention program, focusing on enhancement of the well-being of clients and alleviation of mental health concerns such as depression and anxiety are the main significance of the study. The program shall address concerns pertaining to mental health issues, specifically depression and anxiety, by employing protective and effective strategies of alleviating these concerns through Mindfulness approach to intervention.

1.3. Scope and Limitations

The study is primarily focus on development of an Online MBCT group intervention. However, the study is in its pilot stage. Further validation is still needed to conduct with diverse sampling.

2. Review of Related Literatures

2.1. Mindfulness Based Cognitive Intervention studies related to mental health during Pandemic

As described, college students are one of the vulnerable sectors of the community that experience anxiety, depression, and academic related stress due to pandemic. [4] explained that as pandemic continued to exist, switching to online learning brought abrupt changes to learning approaches that result in challenges in which many students cannot cope very well. However, [1] found out that mindfulness and optimism served as protective factors on these mental health issues which includes COVID 19 pandemic related anxiety, depression, and stress. In addition, [5] discussed that mindfulness and self-compassion has a direct effect on anxiety and depression, but the only significant indirect effects through resilience were found on depression but not anxiety. [6] on the other hand revealed that mindfulness-based intervention combining with compassion can help individuals with complex trauma. [7] also found out that group intervention based on the Mindfulness approach helped college students obtain a higher level of mindfulness and self-compassion and less stress, anxiety, and sleep problems than controls. Participants also showed superior functioning on performance-based measures of attention. Mindfulness intervention was also helpful among adults to lessen anxiety and depressive symptoms and improve the sleep patterns and duration among participants [8]. In addition, [9] on their meta-analysis of peer reviewed publications that used mindfulness approach to help college students alleviate mental health related problems showed that mindfulness interventions significantly lowered levels of depression, anxiety and stress in students. Furthermore, the interventions raised levels of mindfulness in this group. Mindfulness interventions can significantly reduce students' negative emotions, helping them to manage their stress and anxiety. [10] found out in their study among a sample of Norwegian medical and clinical psychology students that mindfulness training decreased neuroticism and psychological distress over the six-year follow-up period. Their findings suggest that mindfulness training can have a durable impact on neuroticism and reduce clinical symptomatology linked with neuroticism such as anxiety and depression.

2.2. Online Mindfulness Intervention

Few studies concerning the application of Mindfulness Based Intervention on mental health such as stress, depression and anxiety were established. In the study of [11] on the impact of mindfulness courses with

graduate university students using paired sample t-test found out that the self-report levels of perceived stress after students completed the module of an open access mindfulness course were significantly lower compared with levels of perceived stress in the pre-assessment condition. In addition, positive outcomes such higher persistence and lower level of mind wandering (higher focus) towards studying are immediate results of the mindfulness program. Qualitative interview validated the quantitative result that the online mindfulness course provided excellent information which can be easily used. Themes such as positive perception of experience, Module's Impact on Mind Wandering and Module's Impact on Stress of result of the qualitative part. The design of the study is Mixed Methods Explanatory Sequential. The application using pilot trials of the impact of an Online mindfulness-enhanced cognitive behavioral therapy for anxiety and depression showed promising results. Reference [12] found out statistically significant results and improvements between pre and post treatment for the symptoms of outcome measures such as distress, anxiety, depression measures and positive developments of trait mindfulness and well-being. The result of the follow-up after 3 months also showed a similar pattern of reduction of symptoms and improvements in cognitive and behavioral processes. In addition, results showed high satisfaction on the treatment and minimal side effects. The findings showed positive application of online Mindfulness iCBT for the treatment of anxiety and depression [12]. In addition, study of [13] showed that online intervention of two mindfulness approaches, that is Mindfulness Based Stress Reduction and .b Foundations showed significant reductions in stress and anxiety among school teachers . However, MBSR was solely associated with improved depression outcomes. In terms of the qualitative part, validation from experts and consensus among researchers and participants, four themes emerge including preconceptions, factors influencing delivery, perceived impact and training desires/practical application. However, there were no differences found in terms of experience and acceptability on MBSR and .b Foundations.

The current research is a preliminary study on the impact of a 5-weeks Online Mindfulness Based Cognitive Intervention on anxiety and depression with additional outcome variables resilience. As described in the literature, the impact of COVID-19 Pandemic on College students' mental health is very high. Contextually wise few online and onsite mental health centers were available in the province of Nueva Ecija [3]. In addition, mainstream literature expresses only a number of studies on the online application of mindfulness based with different variability on the outcome measures. Thus, the main goal of the study is to use group intervention based on the Mindfulness approach to help the selected college students in a state university in Nueva Ecija alleviating their depression and anxiety.

3. Materials and Method

3.1. Theoretical Framework

Mindfulness based cognitive interventions emphasizes mindfulness meditation as the main approach to therapy. This is used to interrupt patterns of thoughtful cognitive affective processing that can lead to depressive and anxiety occurrence. The main goal is on changing the relationship to thoughts, rather than challenging them by raising awareness at a metacognitive level so that an individual can fully experience cognitions and emotions that pass through the mind that may or may not be based on reality. Changing the dysfunctional thoughts but to experience them as being real in the present time and separate from the self [14]. In addition to this, mindfulness intervention, include methods for teaching mindful awareness, some of these practices include participants

sitting quietly while directing their attention in a specific way. Common practices in mindfulness intervention encourage participants to focus their attention directly on activities like breathing and observe it carefully. Participants are also encouraged to bring an attitude of friendly curiosity, interest, and acceptance to all observed phenomena, while not refraining from evaluation and self-criticism. Cognitions, sensations, and emotions are just only noted and observed as they come and go [14]. The Mindfulness Based intervention that will be used in this study is the Mindfulness Based Cognitive Therapy [15].

According to [14] and [15], MBCT is a group intervention that can be conducted up to 8 sessions with 1-2 hours per week. Activities for each session includes three-minute breathing space, thoughts and feeling exercise, discussion of automatic thoughts, deliberately bringing difficulties to mind in sitting meditation, mood thoughts and alternative viewpoints exercises and pleasure and mastery activities, and Relapse prevention action plans. The design of the module in this study was patterned on [15] and [14] MBCT. However, it was structured for five weeks with one module implementation per week. Detailed discussion of the module was discussed in the later part of this paper.

3.2 Design

The design of the study was anchored on the One Group Pretest-Posttest experimental design. Pre-test-Posttest experimental design affixed on a one group sample that undergo the pre and post intervention assessment [16, 17]. The participants took the 5-sessions (5 weeks with 45 minutes-2 hours duration per week) Mindfulness based cognitive intervention via group therapy. Below is a simple presentation of the said design.

O1 X O2

where: O1 = pretest (HSCL, PHQ-9, BAI and CD-RISC 10)

X = treatment (Mindfulness based intervention)

O2 = posttest (HSCL, PHQ-9, BAI and CD-RISC 10)

3.3. Participant and Sampling Procedure

Participants of the study included 5 college students in a state university in Nueva Ecija. Inclusion criteria which were satisfied by the participants are the following: 1) they scored moderate to severe levels of Depression and Anxiety; 2) they are 21 years old; 3) gave their consent for the conduct of the intervention/program; 4) all of them are currently taking their Thesis. All of them experience symptoms of anxiety and depression associated with the online learning and Pandemic effect. In addition, participants are composed of 1 male and 4 female fourth year Bachelor of Science in Psychology students in a state university located in Nueva Ecija, Philippines.

Participants were selected purposively. They were recruited through the help of a faculty member of the Department of Psychology in a state university in Nueva Ecija. Participants signed an informed consent. They were also given a chance to withdraw whenever they felt like doing so. Anonymity and confidentiality were also

upheld in this study.

3.4. Materials

The questionnaire consists of three sections that includes Socio Demographic and Economic Characteristics, Hopkin's Symptom Checklist (HSCL), Patient Health Questionnaire (PHQ-9), Beck Anxiety Inventory (BAI) and Connor-Davidson Resilience Scale 10 (CD-RISC 10). Hopkin's Symptom Checklist (HSCL) is a symptom checklist of depression and anxiety. Part 1 (10 items) measures the anxiety symptoms while part 2 measures the depression symptoms (15 items). Current findings showed that HSCL has high reliability measure, Cronbach alpha ranges 0.75-0.85 [18]. Patient Health Questionnaire (PHQ-9) [19] is a 9-item measure of depression symptoms. [20] found out in their meta-analysis of 49 peer reviewed articles that PHQ-9 has high reliability (cronbach alpha, test-retest and interrater) and validity (predictive, discriminative, convergent). High sensitivity and specificity were also observed. [21] on the other hand is a 21-item symptom inventory. It has internal consistency of 0.92 and test-retest reliability of 0.75 [21]. In the recent study of [22], they found out that BAI is valid for assessing anxiety across age and sex while contributing new evidence of its clinical relevance across education, ethnicity, cognitive status, and language. The Connor-Davidson Resilience Scale 10 [23], as a positive outcome measure, is constructed as a self-rating measure of resilience in a 5-point Likert type scale. The test takers are assumed to answer to the statements of the scale with reference to the previous months on how they think they would have reacted in each situation.

3.5. Data Collection

The data of the study was collected using the following steps:

- Participants were selected through voluntary participation.
- Participants were given informed consent and were debriefed with the objectives/goals of the intervention program.
- After identifying the participants, the researcher asked their permission through consent form (see Appendix for the consent forms and questionnaires) to be included as part of the study.
- The pre and post tests were given through online.
- Group intervention using Mindfulness Based Cognitive approach was done online with the duration of 2 hours per week for 5 weeks. The program started from September 30 to November 13, 2021 (see Appendix for detailed procedure of the intervention).
- The gathered data were analyzed using SPSS for quantitative data and coding and thematic analysis for qualitative data.

3.6. Ethical Consideration

The study was undergone an ethical research review. Researchers obtained informed consent from the participants. Confidentiality and anonymity were upheld in the conduct of the study.

3.7. Data Analysis

The data was analyzed using the following approach:

- For the Anxiety, Depression and Resilience, mean and sd deviation were used.
- For the difference between pretest and post-test of Anxiety, Depression and Resilience, paired-sample T-test and *Cohen's d* were utilized. *Cohen's d* was computed using online calculator [24].
- For qualitative data, the coding cycle was used integrated with thematic analysis [25]. The coding cycle is also effective with other qualitative approaches such as CQR, IPA and Grounded Theory [26, 27].

4. Results

4.1. Anxiety Scores before and after the Mind-Fit Program

This part discusses the major findings of study. On the quantitative part, pretest and posttest scores were presented using mean, standard deviation, and paired sample tests. On the qualitative part, the perceived impact of the Mind-Fit program was explored using open-ended questions and analyzed through thematic analysis.

Table 1 contains the pretest and posttest anxiety scores using Hopkins and Beck Anxiety Scales. It also described the level of the participants before and after the intervention on depression using Hopkins and PHQ-9 scales. Pretest and posttest on Resilience level using CD-RISC is also presented. Significant results of the pretest and posttest intervention using paired sample t-test are also given in Table 1.

Table 1: Mean, SD and T-test scores of Pretests and Posttests of participants on Anxiety, Depression and Resilience.

	Pretest			Post Test			T	df	P	Cohen's d
	M	SD	Description	M	SD	Description				
Hopkins Anxiety	25.4	2.96	Clinically Significant	12.6	2.60	Non-clinically Significant	17.419	4	.000**	4.604
Hopkins Depression	39.20	7.49	Clinically Significant	19.40	1.749	Non-clinically Significant	7.359	4	.002**	4.286
Beck Anxiety	30.60	5.31	Moderate Anxiety	11.0	6.12	Low Anxiety	5.466	4	.005**	3.429
PHQ9 (Depression)	23.20	3.56	Severe Depression	13.80	5.26	Mild Depression	6.396	4	.003**	2.131
Resilience	23.20	1.92	Lowest Quartile/ Lowest Resilience	36.60	3.28	Third Quartile/ High Resilience	-13.01	4	.000**	5.153

**p-value is < 0.05*

***p-value is < 0.01*

The findings revealed that both Hopkins Anxiety scale ($M=25.4$; $SD=2.96$) and Beck Anxiety scale ($M=30.60$; $SD=5.31$) scores of the participants have high levels with description of Clinically Significant and Moderate Anxiety respectively. These means that participants are experiencing anxiety symptoms such as suddenly scared for no reason, feeling fearful, faintness, dizziness and weakness, nervousness, shakiness, heart pounding or racing, trembling, feeling tensed, headache, panic, feeling restless, feeling hot, wobbliness in legs, unsteady and other anxiety like manifestations. After the implementation of the module, participants' posttest scores drastically improved on Hopkins Anxiety ($M=12.60$; $SD=2.60$) and Beck Anxiety ($M=11.0$; $SD=6.12$) measures with description of non-clinically significant and low anxiety correspondingly. Comparison analysis was conducted to test the significance of the changes in the scores. Findings suggest that the overall anxiety of the participants were higher before the intervention than after the module implementation. This improvement on pretest and posttest intervention was statistically significant on both Hopkins Anxiety scale ($t(5) = 17.419$, $p = .000$) and Beck Anxiety measure ($t(5) = 5.466$, $p = .005$). To substantiate this, Cohen's d was used. For both anxiety measures, Cohen's d of 4.60 and 3.42 were derived respectively. This means that the relative strength of difference between the pre and post intervention of both anxiety scores are large.

4.2. Depression Scores before and after the Mindfulness for Mental Fitness (Mind-Fit Program)

Result obtained by the participants on Hopkins Depression subscale ($M=25.4$; $SD=2.96$) showed Clinically Significant interpretation. This means that participants manifest symptoms of depression such as feeling of low energy, blaming self for things, crying easily, loss of interests for pleasure, poor appetite, difficulty falling asleep, hopelessness about the future, feeling blue, feeling lonely, too much worry and feeling worthless. This result was substantiated by PHQ-9 ($M=23.20$; $SD=3.56$) in which participants obtained high levels of scores with interpretation of severe depression. After the implementation of the Mindfulness Based Cognitive Intervention, participants garnered a non-clinically significant interpretation on Hopkins Depression measure with of ($M=19.40$; $SD=1.749$). Same pattern was seen in the findings of PHQ-9 of the participants in which they obtained an interpretation of mild depression with ($M=13.80$; $SD=5.26$). To test if there is significant difference between pretest and posttest intervention results, paired sample t-test was utilized. Results revealed that improvement on participants' scores on depression were obtained. Statistically significant findings on both Hopkins Depression subscale ($t(5) = 7.359$, $p = .002$) and PHQ-9 measure ($t(5) = 5.466$, $p = .005$) were recorded. The same results were found using Cohen's d in which a large difference of the pre and post intervention mean were observed on both measures of depression with result of 4.28 and 2.13 respectively. This means that the Mind-Fit Program on its pilot testing, significantly improved outcome measures on anxiety and depression.

Lastly, the resilience level of the participants was lower before the intervention ($M = 23.20$, $SD = 1.92$) with interpretation of lowest quartile/lowest resilience than after the intervention ($M = 36.60$, $SD = 3.28$) with interpretation of 3rd quartile/high resilience. This improvement in the resilience level was statistically significant

($t(4) = -13.01, p = .000$). This is also validated by Cohen's d with value of 5.15. This means that the program further improved the participants' resilience. It implies that they can adapt when changes occur, they can deal whatever comes their way, they can see the positive side when facing problems, they can cope with stress, they can easily bounce back in facing the problems, they believe that they can achieve their goals, they can focus under pressure, was not easily discouraged by failure, thinking that they are strong when dealing with life challenges and able to handle painful feelings. In sum, the findings suggest that the implemented intervention program significantly improved participants' level of resilience.

4.3. Perceived Impact of Online Mindfulness Based Cognitive Group Intervention (or Mind-Fit Program) among college students

Based on the qualitative part of the study, participants' perceived impact of the intervention program was composed of Five major themes such as Awareness of Thoughts and emotion, Positive Coping, Mindfulness Practice, Positive Group Communication and relationship and Positive Intervention Outcome. Table 2 presents the Themes, subthemes and illustrative text on the impact of Mind-Fit Program.

Table 2: Themes, subthemes and illustrative text on the impact of Mind-Fit Program.

Themes	Subthemes	Illustrative Text
Awareness of Thoughts and emotion	Recognizing thoughts and negative emotion	<p>"I feel and recognize my thoughts and made me realize that there are possible ways to handle these negative emotions"</p> <p>"I learned that recognizing our own weaknesses and stressors are important to be familiar with the proper techniques in handling them."</p>
	Analyzing the effect of emotional loads to ones' behavior	"In one of our sessions, we strive to release all the loads we have by analyzing the effect of it to our behavior and I believe it really helps me"
	Importance of taking care of one's mental health	"And one last thing, I've learned to appreciate the importance of prioritizing our mental health because the state of our mental well-being directly affects the way our body feels and functions"
Positive Coping	Coping with stressors	I cope up and overcome all these stressors and traumas because of the program.
	Helpful during pandemic	I find mindfulness technique such as the 3-minute breathing space and other mindfulness meditation very helpful to me especially during this time.
	More capable of handling oneself	I am now capable of handling myself in the most positive and effective way possible.
	Feel Secure, stress relief	<p>"I feel secure and I got this stress relief in each session."</p> <p>"Help me to take my time in every step and decision making. It helps me to start my day refreshed and end my day relaxed."</p> <p>"In the past five sessions, I am always exited and has this curiosity on what will I discover and cope to day. These past weeks is one of a whole event that I feel safe and relaxed."</p> <p>"The techniques, it helps me lighten up my stress and feeling I was able to process each problem I have as we proceed in every session I've learned a lot of things specially the effect of our traumatic</p>

Mindfulness Practice	Relaxation of mind and body	<p>experience in our choices today .”</p> <p>“Learning about different ways of meditation makes me feel calmed and relaxed for real.”</p> <p>“I can relax my mind and be able to clear my thoughts out”</p>
	Mindfulness meditation	<p>“Mindfulness meditation has been a huge help in terms of controlling my mood and emotions. When you're unhappy or nervous, you may make it a routine to spend a few minutes being attentive at different times of the day.”</p>
Positive Group Communication and relationship	Sharing life stories	<p>“Honestly, I don’t really feel attending this kind of meetings because I always feel nervous and panicky whenever I’m talking to anyone, and I’m not used voicing out my stories in front of other people, but when this intervention was explained to us, I suddenly get excited, and the feeling of sharing some portion of my life to others feels right.”</p>
	Develops helpful relationship with other	<p>“Develops and help my relationship with others and my mental health become more known for me.”</p>
	Self-value and trust to others	<p>“I found my self-value and I learned how to love my self and trust others as well.”</p> <p>“Our facilitator really take care each concern with caution and desire to help us in every possible way he can. I felt the sincerity and acceptance as we open up our selves to him.”</p>
	Peer group support system	<p>“Our peer group also gives exceptional support system that also affect our intervention project in a good way. If there’s another chance to do it I’ll be willingly participate as long as I don’t have prior commitments.”</p> <p>“I learned the importance of listening and communication. I know it’s only through virtual meetings (messenger) but I’ve learned a lot of things not only from our professor but also from my groupmates’ insights and experiences.”</p> <p>“Indeed, lending your ears and the ability to listen effectively to others’ point of view is very crucial to widen my perspective and fully grasp their stories.”</p>
Positive Intervention Outcome	Effective Intervention	<p>“This intervention helps me to have a new daily routine.”</p>
	Mental Health Improvement	<p>“This intervention is highly effective.”</p> <p>This intervention activities help me to know my strength and weakness, develop a coping a routine that not only help me everyday but also help my mental health improvement.</p>
	Learning valuable knowledge	<p>“I’ve learned a lot of valuable things that I could use not only in my career as a psychology student but of course, in my everyday life as an individual.”</p> <p>“I was able to gain new knowledge as to how to properly manage our daily stressors and mental health through the utilization of mindfulness based-cognitive technique.”</p> <p>“Tt helped me to understand the importance of mindfulness based-cognitive and of course, the 3-minute breathing exercise which is really helpful whenever you’re feeling upset, mad or suddenly</p>

	irritated.”
	“Ever since I’ve learned this technique, I started applying it to my everyday life and I could say that it is effective to me because it helps me to relax my mind and to control my impulses whenever I’m going to outburst or even when I’m anxious.”
	“This intervention is especially important for those who are aware that they are more delicate and vulnerable than the average person”
Help to develop focus	“Focus on daily activities, reduce stress, and help to develop coping to stressful event and thoughts.”

5. Discussion

5.1. Impact of the Online Mindfulness-Based Cognitive Group Intervention (or Mind-Fit Program) among college students

This part of the paper discusses the implication of the data obtained and its integration on the mainstream findings on the effect of mindfulness intervention on anxiety, depression, and resilience. This part is composed of quantitative and qualitative impact of the Online Mindfulness Based Cognitive Intervention among college students. Taking the results into consideration, the current findings suggest that the pilot testing and implementation of the Online Mindfulness Based Cognitive Intervention or the Mind-Fit Program was effective in improving the college students’ anxiety, depression, and resilience.

The Online Mindfulness Based Cognitive Group Intervention or the Mind-Fit Program directly helps the participants to significantly decrease their anxiety and depressive symptoms. This was supported by the studies of [1] and [5] that mindfulness serves as protective factors on these mental health issues which includes COVID 19 pandemic related anxiety, depression and stress and has direct effect on anxiety and depression. In addition, the Mind-Fit is conducted via a group approach. The result of the group intervention was also effective in helping the participants to improve their anxiety and depressive symptoms. Consistent with the recent findings by [7] that group intervention based on the Mindfulness approach helped college students obtain a higher level of mindfulness and self-compassion and less stress, anxiety and sleep problems than controls. Since the nature of the Mind-Fit is anchored to the Mindfulness Based Cognitive Approach via Online Group Therapy, this pilot study is additional support to the recent findings of [9] on their meta-analysis of peer reviewed publications that using mindfulness approach to help college students alleviate mental health related problems significantly lowered levels of depression, anxiety and stress in students. The only difference of this study is that it is in the form of an Online MBCT and group therapy modality. In addition, since there are only a number of studies that uses Online Mindfulness Based Cognitive Group Intervention Program, the Mind-Fit, although in its preliminary study, served as additional support for the efficacy of Online Based Mindfulness Intervention [11,12,13] in which the major participants are college students. On the other hand, the increase in resilience as a function of the Mind-Fit had a positive impact on other aspects of the participants mental health. Previous studies documented that resilience could alleviate depression [28, 29]. Although not tested directly, it can be assumed that the same effect may be feasible in the respondents of this study. In like manner, the intervention may also have positively influenced resilience. Again, although the association between mindfulness and resilience was not examined in this study, mindfulness may have played a significant role in the participants’

resilience. This assumption seemed supported by the previous findings. [30] for instance, argued that resilience could provide protective agents and support that allow individuals to deal with challenging situations. The result of the qualitative part revealed five themes and 17 subthemes. The major themes are Awareness of Thoughts and emotion, Positive Coping, Mindfulness Practice, Positive Group Communication and relationship and Positive Intervention Outcome. Awareness of Thoughts and emotion theme served as one of the qualitative outcome measures of the Mental Fitness Program (Mind-Fit). As supported by the study of [11] and [13] that Mindfulness intervention provides self-awareness of emotions and focuses on the present. In addition, Mindfulness Practice is one of the common outcomes of different mindfulness interventions [11,12,13] since the major goal of this mindfulness approach is to practice and master mindfulness activities for the betterment of mental health and other positive outcomes. Positive Group Communication and relationship is another result of the qualitative part since the Mind-Fit is also a group intervention program. This is supported by [31] suggesting that social support increases or buffers individuals' resilience and mental health. This is also consistent with the recent findings of [32] that social support specifically that of significant others served as a buffer for engagements in deviant behaviors among Filipino college students and that social support is significantly correlated to positive measures such as happiness and subjective well-being among different Filipino samples [33,34,35]. In contrast, the absence of social support dwindles individuals' resilience [36,37,38]. In addition, [7] found out that group intervention based on the Mindfulness approach helped college students obtain a higher level of mindfulness and self-compassion and less stress, anxiety, and sleep problems than controls. Thus, the program serves as a good venue for social support system. Positive Coping and Positive Intervention Outcome results of the study are supported by the study of [11] that Mindfulness courses provided excellent information about mindfulness which can be easily used, thus recommending the participants that the module can also be applied to university students. The qualitative result coincides with the quantitative result that the Online Mindfulness Based Cognitive Therapy Program for Anxiety and Depression or the Mental Fitness Program (Mind-Fit) effectively improve outcome measures such as depression, anxiety and resilience which is also a good support to other online Mindfulness intervention [11,12,13] and MBCT studies [6,7,8,9,10] among university students.

6. Conclusion

1. The Mindfulness for Mental Fitness Program (Mind-Fit): Online Mindfulness Based Cognitive Therapy Program, though in its preliminary stage significantly decreases the level of anxiety and depressive symptoms among selected college students.
2. The Mindfulness for Mental Fitness Program (Mind-Fit): Online Mindfulness Based Cognitive Therapy Program significantly increases the level of resilience among selected college students.
3. Main themes of the qualitative part are Awareness of Thoughts and emotion, Positive Coping, Mindfulness Practice, Positive Group Communication and relationship and Positive Intervention Outcome.
4. The qualitative part validated the efficacy of the Mindfulness for Mental Fitness Program (Mind-Fit) for positive outcome measures (decreasing Anxiety and Depressive Symptoms and increasing resilience) of selected college students.

7. Current Trend

It is recommended that in the future, researchers will use full experimental design or randomized controlled experiment to further substantiate the impact of an Online Mindfulness Based Cognitive group intervention among college students since the current study did not use control groups. The independent variables in the study may include personal variables such as gender since most of the participants in this study are female. In addition, mediator or moderation analysis may also be considered as to what is the function of resilience or mindfulness on depression and anxiety. Longitudinal effect of the Online Mindfulness Based Cognitive group intervention among college students may also be a future study to explore by integrating follow-up in the design. Consider the use of other participants such as differences on the effect of Online Mindfulness Based Cognitive group intervention among senior or junior high school, college students and graduate students for the validation and applicability of an online mindfulness approach. And lastly, the study is recommended for future researchers for replicability, reliability and validation.

Acknowledgements

The researchers acknowledge the support of the following institution: The Graduate School of the University of Santo Tomas, Department of Psychology, CASS, Central Luzon State University and the Commission on Higher Education (CHED).

References

- [1] C. Karing. 2021. Prevalence and predictors of anxiety, depression and stress among university students during the period of the first lockdown in Germany. *Journal of Affective Disorders Reports* 5 (2021) 100174. <https://doi.org/10.1016/j.jadr.2021.100174>
- [2] M. Tee, C. Wang, C. Tee, R. Pan, P. Reyes, X. Wan, J. Anlacan, Y. Tan, L. Xu, C. Harijanto, V. Kuruchittham, C. Ho, and R. Ho. 2021. Impact of the COVID-19 Pandemic on Physical and Mental Health in Lower and Upper Middle-Income Asian Countries: A Comparison Between the Philippines and China. *Frontiers*. 11:568929
[10.3389/fpsyt.2020.568929](https://doi.org/10.3389/fpsyt.2020.568929)
- [3] J.C. Santos, A.R. Dullas, I. Bustos, M.A. Manangquit, and K.C. Antonio. 2021. Central Luzon State University-Community Center for Wellness (CLSU-CCW): A Community Approach to a Holistic Wellness. *Conference Proceedings. 6th Central Luzon Health Research Forum. Central Luzon Health and Research Consortium. June 17-21, 2021*
- [4] A. Shirish, S. Chandra and S.C. Srivastava. 2021. Switching to online learning during COVID-19: Theorizing the role of IT mindfulness and techno eustress for facilitating productivity and creativity in student learning. *International Journal of Information Management* 61 (2021) 102394.

<https://doi.org/10.1016/j.ijinfomgt.2021.102394>

- [5] A. Pérez-Aranda, J. García-Campayo, F. Gude, J.V. Luciano, A. Feliu-Soler, A. González-Quintela, Y. López-del-Hoyo and J. Montero-Marin. 2021. Impact of mindfulness and self-compassion on anxiety and depression: The mediating role of resilience. *International Journal of Clinical and Health Psychology* 21 (2021) 100229. <https://doi.org/10.1016/j.ijchp.2021.100229>
- [6] M. Strand and S.H. Stige. 2021. Combining mindfulness and compassion in the treatment of complex trauma – a theoretical exploration. *European Journal of Trauma & Dissociation* 5 (2021) 100217. <https://doi.org/10.1016/j.ejtd.2021.100217>
- [7] R. Weis, S.D. Ray and T.A. Cohen. 2021. Mindfulness as a way to cope with COVID-19-related stress and anxiety. *Couns Psychother Res.* 2021;21:8–18. <https://doi.org/10.1002/capr.12375>
- [8] J. Huberty, M.E. Puzia, J. Green, R.D. Vlisides-Henry, L. Larkey, M.R. Irwin and A. Vranceanu. 2021. A mindfulness meditation mobile app improves depression and anxiety in adults with sleep disturbance: Analysis from a randomized controlled trial. *General Hospital Psychiatry* 73 (2021) 30–37. <https://doi.org/10.1016/j.genhosppsy.2021.09.004>
- [9] X. Chen, B. Zhang, S. Jin, Y. Quan, X. Zhang and X. Cui. 2021. The effects of mindfulness-based interventions on nursing students: A meta-analysis. *Nurse Education Today* 98 (2021) 104718. Elsevier <https://doi.org/10.1016/j.nedt.2020.104718>
- [10] A.W. Hanley, M. de Vibe, I. Solhaug, K. Gonzalez-Pons, and E.L. Garland. 2019. Mindfulness training reduces neuroticism over a 6-year longitudinal randomized control trial in Norwegian medical and psychology students. *Journal of Research in Personality* 82 (2019) 103859. <https://doi.org/10.1016/j.jrp.2019.103859>
- [11] J. Murphy. 2021. Exploring the impact of an open access mindfulness course with online graduate students: A mixed methods explanatory sequential study. *Online Learning.* 25(2), 299–323. <https://doi.org/10.24059/olj.v25i2.2292>
- [12] N. Kladnitski, J. Smith, A. Allen, G. Andrews and J.M. Newby. 2018. Online mindfulness enhanced cognitive behavioural therapy for anxiety and depression: Outcomes of a pilot trial. *Internet Interventions* 13 (2018) 41–50. <https://doi.org/10.1016/j.invent.2018.06.003>
- [13] C. Todd, R. Cooksey, H. Davies, C. McRobbie and S. Brophy. 2019. Mixed methods evaluation comparing the impact of two different mindfulness approaches on stress, anxiety and depression in school teachers. *BMJ Open* 2019;9:e025686. [10.1136/bmjopen-2018-025686](https://doi.org/10.1136/bmjopen-2018-025686)
- [14] A. Baer and J. Krietemeyer. 2006. Overview of Mindfulness- and Acceptance-Based Treatment Approaches. In *Mindfulness-Based Treatment Approaches: Clinician's Guide to Evidence Base and*

Applications. Elsevier

- [15] Z.V. Segal, J.M.G. Williams and T.D. Teasdale. 2002. *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. Guilford.
- [16] B. Cohen. 1996. *Explaining Psychological Statistics*. Brooks/Cole Publishing Company
- [17] R.S. Witte and J.S. Witte. 2010. *Statistics, 9th Edition*. John Wiley & Sons
- [18] E. Vindbjerg, E.L. Mortensen, G. Makransky, T. Nielsen, and J. Carlsson. 2021. A rasch-based validity study of the HSCL-25. *Journal of Affective Disorders Reports*, Vol. 4, No.100096. <https://doi.org/10.1016/j.jadr.2021.100096>
- [19] K. Kroenke, R.L. Spitzer and J.B.W. Williams. 2001. The PHQ-9. *J GEN INTERN MED* 16, 606–613. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
- [20] H.A. Carrolla, K. Hooka, O.F.R. Perez, C. Dencklab, C.C. Vincee, S. Ghebrehiweta, K. Andof, M. Toumag, C.P.C. Borbaa, G.L. Fricchione, D.C. Hendersona. 2020. Establishing reliability and validity for mental health screening instruments in resource-constrained settings: Systematic review of the PHQ-9 and key recommendations. *Psychiatry Research* 291 (2020) 113236. <https://doi.org/10.1016/j.psychres.2020.113236>
- [21] A.T. Beck, N. Epstein, G. Brown and R.A. Steer. 1988. An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology*, 56(6), 893–897. <https://doi.org/10.1037/0022-006X.56.6.893>
- [22] J.M. Garcia, M.W. Gallagher, S.E. O’Bryant and L.D. Medina. 2021. Differential item functioning of the Beck Anxiety Inventory in a rural, multi-ethnic cohort. *Journal of Affective Disorders* 293 (2021) 36–42. <https://doi.org/10.1016/j.jad.2021.06.005>
- [23] K.M. Connor and J.R.T. Davidson. 2003. Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18(2), 76-82. <https://doi.org/10.1002/da.10113>
- [24] Effect Size Calculator for T-test. <https://www.socscistatistics.com/effectsize/default3.aspx>
- [25] J. Saldana. 2009. *The Coding Manual for Qualitative Researchers*. Sage Publication.
- [26] M. Barankova, J. Halamova and J. Koroniova. 2019. Non-expert Views of Compassion: Consensual Qualitative Research Using Focus Group. *Human Affairs* 29, 6-19. 10.1515/humaff-2019-0002
- [27] A. Soltani, D. Boostani, and S. Golestani. 2020. Exploring the strategies of faculty-student interactions: A grounded theory study in Iranian academic context. *Learning, Culture and Social Interaction* 26 (2020). Elsevier. <https://doi.org/10.1016/j.lcsi.2020.10040>

- [28] W.Y. Chai, S.Y.C.L. Kwok and M. Gu. 2018. Autonomy-granting parenting and child depression: The moderating roles of hope and life satisfaction. *Journal of Children and Family Studies*. <https://doi.org/10.1007/s10826-018-1102-8>
- [29] F. Martin, W. Clyne, G. Pearce and A. Turner. 2019. Self-management support intervention for parents of children with developmental disorders: The role of gratitude and hope. *Journal of Child and Family Studies*, 28, 980-992.
- [30] D. Harley and V. Hunn. 2015. Utilization of photovoice to explore hope and spirituality among low-income African American adolescents. *Child and Adolescent Social Work Journal*, 32, 3-15. doi: 10.1007/s10560-014-0354-4
- [31] M. Pejčić, M. Ristić and V. Anđelković. 2017. The mediating effect of cognitive emotion regulation strategies in the relationship between perceived social support and resilience in postwar youth. *Journal of Community Psychology*, 1-16. doi: 10.1002/jcop.21951
- [32] A.R. Dullas, K.D. Yncierto, M.A. Labiano and J.C. Marcelo. 2021. Determinants of Variety of Deviant Behaviors: An analysis of Family Satisfaction, Personality Traits and its relationship on Deviant Behaviors among Filipino Adolescents. *Frontiers in Psychology, Personality and Social Psychology section*. *Front. Psychol.* 12:645126. *Frontiers Media* <https://10.3389/fpsyg.2021.645126>
- [33] J. Nebrida and A.R. Dullas. 2018. "I'm perfectly imperfect": Exploring the relationship between PERMA model of wellbeing with self-esteem among persons with disabilities. *International Journal of Research Studies in Psychology*. Volume 7 Number 2, 27-44. <https://10.5861/ijrsp.2018.3005>
- [34] M. Tolentino and A.R. Dullas. 2015. Subjective Well-being of Filipino Farm Children. *International Journal of Research Studies in Psychology*. Vol. 4 No. 4, 47-60. <https://10.5861/ijrsp.2015.1265>
- [35] A.R. Dullas and E.F. Acoba. 2013. *Concept of Happiness Among Filipino Farmers: A Qualitative and Quantitative View*. LAP LAMBERT Academic Publishing, Germany
- [36] G. Arslan. 2019. Mediating role of the self-esteem and resilience in the association between social exclusion and life satisfaction among adolescents. *Personality and Individual Differences*, 151, 1-6
- [37] E. Florez, K. Cohen, N. Ferenczi, K. Linnell, J. Lloyd, L. Goddard, M. Kumashiro and J. Freeman. 2020. Linking recent discrimination-related experiences and wellbeing via social cohesion and resilience. *Journal of Positive School Psychology*, 4(1), 92-104.
- [38] S.W. Lee, G.Y. Bae, H.D. Rim, S.J. Lee, S.M. Chang, B.S. Kim and S. Won. 2018. Mediating effect of resilience on the association between emotional neglect and depressive symptoms. *Psychiatry Investigation*, 15(1), 62-69. <https://doi.org/10.4306/pi.2018.15.1.62>