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Research Article

Effect of Acceptance and Commitment Therapy on Depression and Quality of Life among Women with Chronic Pain during COVID-19 Pandemic Lockdown

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ABSTRACT

Background and objectives: The coronavirus disease 2019 (COVID-19) pandemic is one of the most important healthcare and social challenges. The aim of this study was to evaluate the effect of acceptance and commitment therapy (ACT) on depression and quality of life among women with chronic pain during the COVID-19 pandemic lockdown.

Methods: This study had a quasi-experimental pretest-posttest design with a control group. The study included 35 women with chronic pain who were randomly divided into an experimental group (n=18) and a control group (n=17). The experimental group received six sessions of weekly treatment based on the ACT matrix. All participants completed the Beck Depression Inventory (BDI-II) and the World Health Organization Quality of Life Questionnaire (WHOQOL-BREF) in pretest and posttest. Collected data were analyzed with SPSS (version 23) using descriptive statistics (mean and standard deviation), analysis of covariance (ANCOVA), independent t-test, and the Levene's test. A p-value less than 0.05 was considered statistically significant.

Results: The weekly ACT treatment significantly reduced depression (F=8.72, p=0.01) and significantly increased quality of life (F=11.24, p=0.01).

Conclusion: Group psychotherapy based on the ACT matrix can significantly reduce depression and increase quality of life among women with chronic pain during the COVID-19 pandemic lockdown.

Keywords: Matrix Acceptance and Commitment; Depression; Quality of Life; Chronic Pain; COVID-19 Pandemic

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INTRODUCTION

Coronavirus disease 2019 (COVID-19) spread throughout China at the end of December 2019, causing significant public health threats worldwide. By March 2020, nearly all countries around the world, including Iran, were affected by the COVID-19 pandemic (1). In a study during the early phase of the pandemic in China, 53.8% of the respondents rated the psychological impact of the outbreak as moderate or severe (2). Furthermore, reports have indicated an increase in prevalence of anxiety, depression, and stress as well as a rise in suicide rates during the pandemic (3). Indeed, people who suffer from chronic pain may be particularly vulnerable to COVID-19 and its complications (4). Because of the COVID-19 pandemic, healthcare delivery has changed to protect patients and staff, and resources have been redirected for acute needs. There is inevitably a disruption of health-related treatments that many consider non-urgent, such as pain management (5). A study demonstrated that individuals with chronic pain are more adversely affected by lockdown conditions compared to pain-free individuals. Therefore, there is a need for providing appropriate care to patients with chronic pain in this period (5).

The current COVID-19 pandemic would have far greater, broader, and more troubling effects than an infection simply caused by somatic factors, with profound effects on people's perceived quality of life (6). According to a study, having a medical or psychiatric condition, being unemployed, or living in a hostile environment, as well as sex are significantly associated with quality of life (7). Furthermore, a large study from Italy by Rossi et al. (8) found that people who had experienced a lockdown for four weeks have higher levels of anxiety and depression (8).

Remote technologies have the potential to deliver pain psychology education, which is effective in alleviating pain catastrophizing (9). Studies suggest the need for accurate and timely assessment of the magnitude of mental health outcomes in the general population exposed to COVID-19, with a particular focus on early prevention and intervention strategies for those at higher risk. Acceptance and commitment therapy (ACT) is a well-established, third-wave therapy based on the relational frame theory. A central concept of ACT is that psychological inflexibility is the source of psychological and emotional suffering. A primary purpose of ACT is to increase psychological flexibility, which is defined as the ability to contact the present moment more fully, "as it is" and not "as it claims to be", changing or persisting with behavior according to values (10). This approach to therapy has several advantages over other psychotherapy approaches, including taking into account both cognitive and motivational aspects to achieve longer-lasting results (11). It has been shown that ACT reduces depression, stress, and anxiety, and improves the quality of life. The degree of acceptance is related to greater involvement in personal affairs, reduction of confusion and disability, and improvement of psychological well-being (12).

As mentioned earlier, the COVID-19 pandemic substantially affects those living with chronic pain. This requires efforts to adapt treatment and care strategies (6,8). To the best of our knowledge, no study has yet analyzed the effects of COVID-19 on depression levels and quality of life of women with chronic pain during lockdowns. The present study assessed the impact of ACT on depression and quality of life among Iranian women with chronic pain during the COVID-19 pandemic lockdown.

MATERIALS AND METHODS

Study design

A quasi-experimental design was used in this controlled trial. The study was based on the CONSORT guideline and included all women with chronic pain who had been referred to the Tavana Pain Clinic in Shiraz (Iran) from 2020 to 2021. The subjects were selected through purposive sampling according to inclusion and exclusion criteria

and then randomly assigned to an experiment group (n=18) and a control group (n=17).

The inclusion criteria were being a woman with chronic pain based on a chronic pain rating questionnaire (2-MPQ-SF), having depression according to the Beck Depression Inventory Second Edition (BDI-II), age of 21 years and older, having pain for more than six months, and access to a computer with Internet and a cell phone. The exclusion criteria included not receiving any psychotropic medication or psychiatric treatment for six months, unwillingness to participate in the study, being diagnosed with mental disorders other than depression, severe psychotic disorders, alcohol addiction, and missing two days of the training (Table 1). According to a study by Waller et al., sample size of 35 was calculated using G*Power (13).

Data collection

Data were collected using an electronic survey that took about 10-20 minutes to complete. We utilized Google Forms to design the online questionnaire and distributed it via various social media platforms (WhatsApp, Facebook Messenger, and Shad) so that only those who met the inclusion criteria could participate. Consent was taken from the participants after explaining the research objectives. During the study period, 300 Beck Depression Inventory questionnaires were sent, and 243 responses were received. After considering demographic variables and the inclusion and exclusion criteria, 97 people were assessed for eligibility in the CONSORT model (Figure1). Finally, 35 people were randomly assigned to an experimental group and a control group. After identifying individuals by creating a WhatsApp group, the ACT matrix interventions training (15) was held by the first author every Friday for six weeks. After the end of the study period, the control subjects also received two ACT sessions. The sociodemographic questionnaire, Beck Depression Inventory (BDI-II), and the Quality of Life Questionnaire (BREF-WHOQOL) were completed via interviews. Data were analyzed with SPSS (version 23) using descriptive statistics (mean and standard deviation), the Levene's test, independent t-test, and analysis of covariance (ANCOVA). A p-value less than 0.05 was considered statistically significant. To evaluate the effectiveness of the ACT matrix on depression and quality of life of women with chronic pain, the pre and post-test scores in both groups were calculated and then subjected to the Levene's test and analysis of covariance .

Table 1. Content of the Treatment Sessions

Acceptance and commitment treatment with the matrix method
Session 1: Introducing the matrix and drawing it as an observer while paying attention to the five senses and mental experiences.
Session 2: Evaluating the long-term effectiveness of avoidance measures, score actions, and introducing a vicious cycle.
Session 3: Identification of attention problems and controlling internal events, the introduction of thieves' attention hooks, and completion of a hooks worksheet.
Session 4: Teaching verbal aikido, accepting unpleasant thoughts, and avoiding conflict.
Session 5: Introducing self-compassion, writing a self-compassion letter, and growing self-compassionately.
Session 6: Learning how to control the power of vision by writing a letter from the future itself.

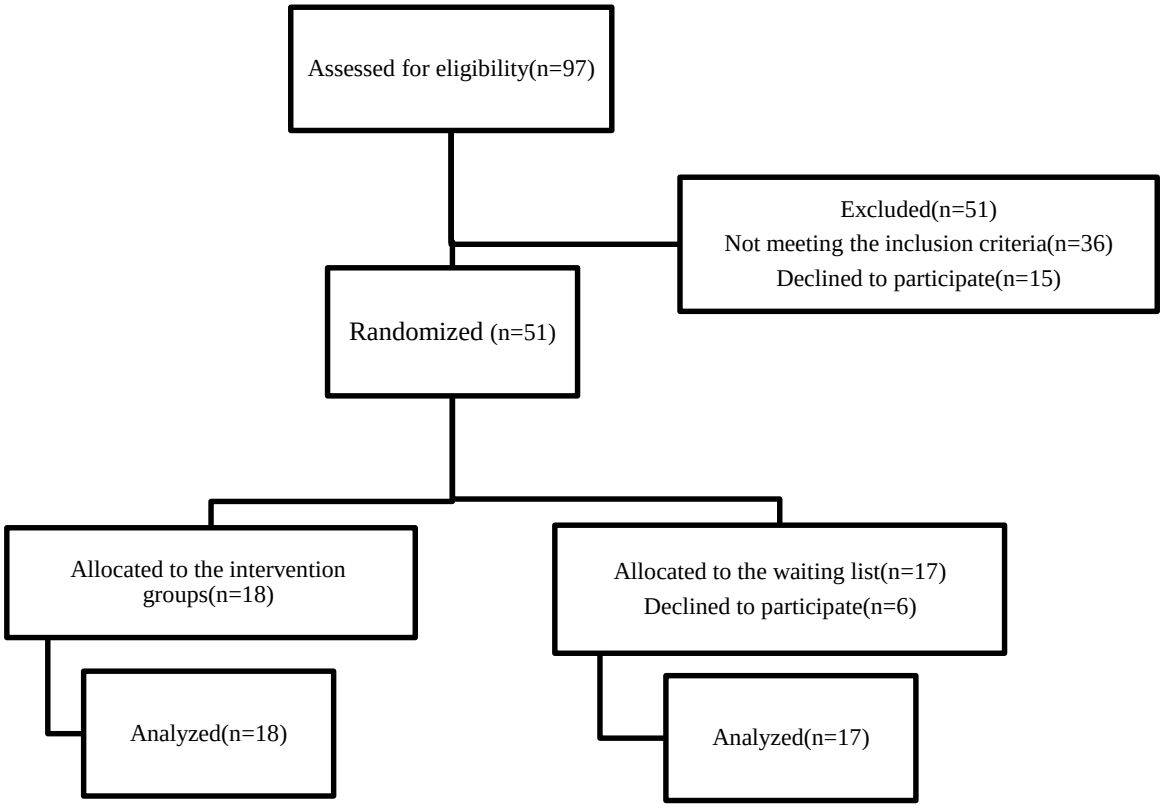

Figure1. The CONSORT diagram

Structured Clinical Interview for Axis Disorders (II-SCID)

This interview was conducted as described previously (14). In a study conducted by Sharifi et al. (2004) in Iran, the content and face validity of the Persian version was confirmed by three professors of clinical psychology. Its reliability during a week was 0.95 according to the test-retest (15). The internal consistency was calculated to be 0.85 in the present study.

Chronic Pain Rating Questionnaire (2-MPQ-SF)

This questionnaire was developed by Malzak and has twenty sets of phrases. The questionnaire measures people's perception of pain from four different dimensions: sensory perceptions of pain, emotional perceptions of pain, perception of pain evaluations, and a variety of pains (16). The alpha coefficient for all dimensions was between 0.83 and 0.87. The sum of the patient's total pain scores was equal to the total score obtained from all sets of pain in different dimensions (17)**.**

The Beck Depression Inventory-II (BDI-II)

This self-report questionnaire includes 21 items that measure the severity of depression (18). Each item reflects one of the symptoms of depression and is scored based on a 4-point Likert scale. It requires 5 to 10 minutes to complete and is suitable for people above 13 years old. The total score ranges from 0 to 63. Scores of 0-13, 14-19, 20-28, and 29-63 indicate no or minimal depression, mild depression, moderate depression, and severe depression. A score of less than 4 can indicate a possible denial of depression, pretending good and usual, even for healthy people. The cut-off point of 18 can diagnose approximately 92% of patients with severe depression (19).

The Quality of Life Questionnaire (BREF-WHOQOL)

This questionnaire is a short form of a 100-item questionnaire that includes 26 questions and assesses both physical and mental health. The validity of this instrument was evaluated and reported as acceptable using two methods of differential validity and structural validity (20). The Cronbach's alpha was above 70% in all aspects except social relations, where the alpha was 0.55, which indicates a good and acceptable level of validity and reliability for Iranians (21).

RESULTS

The mean age of subjects in the ACT matrix group and the control group was 31.30±8.43 years and 30.40±6.60 years, respectively. The frequency of single individuals in the experimental group and the control group was 55.7% and 63.3%, respectively.

Based on the results of the independent t-test, there was no significant difference in the pretest scores of depression and quality of life between the two study groups (p>0.05). In the pretest, the mean scores of depression and quality of life did not differ significantly between the study groups (Table 2). However, the mean scores of depression and quality of life differed significantly between the two groups in the posttest (p<0.01). In fact, the mean depression scores decreased significantly in the experimental group compared with the control group (p=0.01). Moreover, the mean scores of quality of life increased significantly after the intervention compared with the control group (p=0.01).

Table 2. Mean scores of depression and quality of life in the intervention and control groups

Variable	Groups	Statistical index	Mean ±standard deviation	test-t	p
Depression	Pretest	ACT	27.73±10.52	0.435	0.812
		Control	26.53±10.73		
	Posttest	ACT	20.60±10.23	8.721	0.01
		Control	32.80±12.36		
Quality of life	Pretest	ACT	77.57±10. 44	1.527	0.091
		Control	71.33±8.52		
	Posttest	ACT	86.77±8.42	11.245	0.01
		Control	70.55±10.28		

DISCUSSION

To the best of our knowledge, this study is the first to investigate the effects of ACT on depression and quality of life among women with chronic pain during the COVID-19 pandemic lockdown. The findings of this study are consistent with numerous studies (9, 10, 12).

As mentioned earlier, ACT is a behavior change method, which is explicitly oriented toward the development of greater psychological flexibility (22, 23). Although much of the early ACT interventions targeted mental health, from the beginning, there was also a focus on health behavior change and that interest has grown in recent years (24). This method offers an alternative to traditional attempts to control unwanted psychological experiences (23). The goals of the health behavior change interventions in the ACT are not an explicit replacement of previous unhealthy psychological events with new and healthy events, but the concurrent cultivation of acceptance toward the occurrence of unhealthy psychological events and defusion from strict adherence to those events. In this way, habits for the new

healthy behaviors may be established with greater resiliency to psychological barriers (24). Therefore, identifying the psychological processes that can help to maintain well-being and psychological health under such exceptional circumstances is utmost importance. These processes also need to be adaptable and responsive to psychological intervention if they are to have functional utility (25). For some individuals, COVID-19 lockdowns could offer a reprieve from daily hassles and stress, and even increase quality of life. Thus, it is equally important to identify protective factors that can buffer against the negative effects of the lockdowns (26). Taking this into account, acceptance processes related to third-generation therapies, such as ACT, mindfulness, and self-compassion, may work better to relieve distressing emotional states. Because these critical situations (i.e., the pandemic and the lockdown) are harmful, painful emotions are part of their consequences on human life. The common factor in third-generation therapies is the acceptance of emotional suffering. Acceptance therapies can teach people to become aware of their emotions and learn to relate to them in a more balanced way (27).

There are a few limitations and shortfalls in this study. The participants were required to self-report all information, but the information was not controlled for honesty. This was an experimental study conducted at a specific point during the lockdown (roughly halfway through) and therefore does not provide a comprehensive image of the psychological distress that occurred during the lockdown. It is necessary to explore how these results change over time through longitudinal studies.

CONCLUSION

According to the results, ACT is an effective therapeutic approach to reduce depression and increase the quality of life among women with chronic pain during the COVID-19 pandemic lockdown. These effects appear to be achieved through increased acceptance of thoughts and feelings associated with the COVID-19 pandemic lockdown, which is the primary goal of ACT treatment. Overall, the findings suggest that interventions to counteract the social, financial, and disruptive impacts of COVID-19, particularly among people with existing health conditions, are likely to have the greatest impact on community mental health and wellbeing.

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AUTHORS' CONTRIBUTION

All authors had relatively equal contribution in study design, data collection, data analysis, and writing of the manuscript.

DECLARATIONS

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Ethics approvals and consent to participate

The study was approved by the Ethics Committee of the Islamic Azad University of Shiraz (ethical approval code: IR.IAU.SHIRAZ.REC.1400.052). Consent was taken from the subjects prior to participation in the study.

Conflict of interest

The authors declare that there is no conflict of interest regarding publication of this article

References

1. Afshar ZM, Ebrahimpour S, Javanian M, Koppolu V, Vasigala VK, Hasanpour AH, Babazadeh A. Coronavirus disease 2019 (COVID-19), MERS and SARS: Similarity and difference. Journal of Acute Disease. 2020 Sep 1;9(5):194. [View at Publisher] [DOI] [Google Scholar]

2. Wang C., Pan R., Wan X., Tan Y., Xu L., Ho C.S., Ho R.C. Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. Int. J. Environ. Res. Public Health. 2020; 17:1729. [View at Publisher] [DOI] [PMID] [PMCID] [Google Scholar]

3. Matcham F, Carroll A, Chung N, Crawford V, Galloway J, Hames A, Jackson K, Jacobson C, Manawadu D, McCracken L. Smoking and common mental disorders in patients with chronic conditions: An analysis of data collected via a web-based screening system. Gen Hosp Psychiatry. 2017; 45:12-18. [View at Publisher] [DOI] [PMID] [Google Scholar]

4. Eccleston, C, Blyth, FM, Dear, BF, et al. Managing patients with chronic pain during the COVID-19 outbreak: considerations for the rapid introduction of remotely supported (eHealth) pain management services. Pain 2020; 161: 889-893 [DOI] [PMID] [PMCID] [Google Scholar]

5. Shanthanna, H, Strand, NH, Provenzano, DA, et al. Caring for patients with pain during the COVID-19 pandemic: consensus recommendations from an international expert panel. Anaesthesia 2020; 75: 935-944. [DOI] [PMID] [PMCID]

6. Al-Ajlouni YA, Park SH, Alawa J, Shamaileh G, Bawab A, El-Sadr WM, Duncan DT. Anxiety and depressive symptoms are associated with poor sleep health during a period of COVID-19-induced nationwide lockdown: a cross-sectional analysis of adults in Jordan. BMJ Open. 2020 Dec 1;10(12):e041995. [View at Publisher] [DOI] [PMID] [PMCID] [Google Scholar]

7. Epifanio MS, Andrei F, Mancini G, Agostini F, Piombo MA, Spicuzza V, Riolo M, Lavanco G, Trombini E, La Grutta S. The impact of COVID-19 pandemic and lockdown measures on quality of life among Italian general population. Journal of Clinical Medicine. 2021 Jan;10(2):289 [View at Publisher] [DOI] [PMID] [PMCID] [Google Scholar]

8. Rossi, R.; Socci, V.; Talevi, D.; Mensi, S.; Niolu, C.; Pacitti, F.; Di Lorenzo, G. COVID-19 pandemic and lockdown measures impact on mental health among the general population in Italy. Front. Psychiatry 2020, 11, 790. [View at Publisher] [DOI] [PMID] [PMCID] [Google Scholar]

9. Rickardsson J, Gentili C, Holmström L, Zetterqvist V, Andersson E, Persson J, Lekander M, Ljótsson B, Wicksell RK. Internet-delivered acceptance and commitment therapy as microlearning for chronic pain: A randomized controlled trial with 1-year follow-up. European Journal of Pain. 2021 May;25(5):1012-30 [View at Publisher] [DOI] [PMID] [Google Scholar]

10. Galvez-Sánchez CM, Montoro CI, Moreno-Padilla M, Reyes del Paso GA, de la Coba P. Effectiveness of Acceptance and Commitment Therapy in Central Pain Sensitization Syndromes: A Systematic Review. Journal of Clinical Medicine. 2021 Jan;10(12): 2706. [View at Publisher] [DOI] [PMID] [PMCID] [Google Scholar]

11. Doehner W, Ural D, Haeusler KG, Čelutkienė J, Bestetti R, Cavusoglu Y, et al. Heart and brain interaction in patients with heart failure: overview and proposal for a taxonomy. A position paper from the Study Group on Heart and Brain Interaction of the Heart Failure Association. Eur J Heart Fail. 2018;20(2):199-215. [View at Publisher] [DOI] [PMID] [Google Scholar]

12. Ahmadi Ghahnaviyeh L, Bagherian B, Feizi A, Afshari A, Mostafavi Darani F. The Effectiveness of Acceptance and Commitment Therapy on Quality of Life in a Patient with Myocardial Infarction: A Randomized Control Trial. Iran J Psychiatry. 2020 Jan;15(1):1-9. [DOI] [PMID] [PMCID] [Google Scholar]

13. Waller KG, Shaw RW. Endometriosis, pelvic pain, and psychological functioning. Fertil Steril. 1995;63(4):796-800. [View at Publisher] [DOI] [Google Scholar]

14. Polk KL, Schoendorff B, Webster M, Olaz FO. The essential guide to the ACT Matrix: A step-by-step approach to using the ACT Matrix Model in clinical practice. New Harbinger Publications; 2016 Jun 1. [Google Scholar]

15. First MB, Spitzer RL, Gibbon M, Williams JB. User's guide for the Structured clinical interview for DSM-IV axis I disorders SCID-I: clinician version. American Psychiatric Pub; 1997.

16. Sharifi V, Asadi SM, Mohammadi MR, Amini H, Kaviani H, Semnani Y, Shabanikia A, Shahrivar Z, Davari Ashtiani R, Hakim Shoushtari M, Sedigh A. Reliability and feasibility of the Persian version of the structured diagnostic interview for DSM-IV (SCID). Advances in cognitive science. 2004 Apr 10;6(1):10-22. [Google Scholar]

17. Melzack R, Raja SN. The McGill pain questionnaire: from description to measurement. The Journal of the American Society of Anesthesiologists. 2005 Jul 1;103(1):199-202. [View at Publisher] [DOI] [PMID] [Google Scholar]

18. Alemi S, Abolmaali Alhosseini K, Malihialzackerini S, Khabiri M. Effect of Mindfulness Therapy and Aromatherapy Massage on Pain Perception, Quality of Life and Sleep Quality in Older Women with Chronic Pain. Iranian Journal of Ageing. 2021 Jul 10;16(2):218-33. [View at Publisher] [DOI] [Google Scholar]

19. Beck AT, Steer RA, Brown GK. Beck depression inventory-II. San Antonio. 1996;78(2):490-8. [DOI]

20. Rahimi C. Application Beck Depression Inventory - 2 Iranian students. Clin Psychol Character. 2014;2(10):173-88 [View at Publisher] [Google Scholar]

21. Rostami R, Dasht Bozorgi Z. Effectiveness of Acceptance and Commitment Therapy on Resiliency and Alexithymia of Somatic Symptoms. Practice in Clinical Psychology. 2019 May 10;7(2):87-94. [View at Publisher] [DOI] [Google Scholar]

22. Nejat SA, Montazeri A, Holakouie Naieni K, Mohammad KA, Majdzadeh SR. The World Health Organization Quality of Life (WHOQOL-BREF) questionnaire: Translation and validation study of the Iranian version. Journal of the school of public health and institute of public health research. 2006 Jul 10;4(4):1-2. [View at Publisher] [Google Scholar]

23. Hayes SC, Luoma JB, Bond FW, Masuda A, Lillis J. Acceptance and commitment therapy: Model, processes and outcomes. Behavior research and therapy. 2006 Jan 1;44(1):1-25. [View at Publisher] [DOI] [PMID] [Google Scholar]

24. Zhang CQ, Leeming E, Smith P, Chung PK, Hagger MS, Hayes SC. Acceptance and commitment therapy for health behavior change: a contextually-driven approach. Frontiers in psychology. 2018 Jan

11;8:2350. [View at Publisher] [DOI] [PMID] [PMCID] [Google Scholar]

25. Holmes EA, O'Connor RC, Perry VH, Tracey I, Wessely S, Arseneault L, Ballard C, Christensen H, Silver RC, Everall I, Ford T. Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. The Lancet Psychiatry. 2020 Jun 1;7(6):547-60. [View at Publisher] [DOI] [Google Scholar]

26. Gloster AT, Lamnisos D, Lubenko J, Presti G, Squatrito V, Constantinou M, Nicolaou C, Papacostas S, Aydın G, Chong YY, Chien WT. Impact of COVID-19 pandemic on mental health: An international study. PloS one. 2020 Dec 31;15(12):e0244809. [View at Publisher] [DOI] [PMID] [PMCID] [Google Scholar]

27. Thimm JC. Relationships between early maladaptive schemas, mindfulness, self-compassion, and psychological distress. International Journal of Psychology and Psychological Therapy. 2017;17(1):3-17 [Google Scholar]