Original Article

The Effect of Cognitive Behavioural Group Therapy on the Workplace and Decisional Procrastination of Midwives: A Randomized Controlled Trial

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Abstract

Background: Procrastination in the general population is a prevalent phenomenon. Procrastination in midwives, who are responsible for health care services, can have serious consequences and reduce health care productivity. Cognitive Behavioral Group Therapy (CBGT) is believed to reduce procrastination, but few studies have investigated its effectiveness. The aim of the present study was to determine the effect of CBGT on the workplace and decisional procrastination of midwives. **Materials and Methods:** This randomized, controlled trial was conducted on 47 participants who were eligible to participate in the study. The participants were randomly assigned to the CBGT (n = 24) and control (n = 23) groups. The intervention group received 7 sessions of CBGT and the control group received no intervention. Decisional and workplace procrastination were assessed at the pre-treatment, post-treatment, and 2-month follow-up phases. Repeated measures Analysis of Variance (ANOVA) and Analysis of Covariance (ANCOVA) were used for data analysis. **Results:** At the posttest and follow-up phases, workplace procrastination (Post-test: $F_{1,40}$ = 11.78, p = 0.001; Follow-up: $F_{1,40}$ = 11.12, p = 0.002), soldiering (Post-test: $F_{1,40}$ = 13.77, p = 0.001; Follow-up: $F_{1,40}$ = 4.15, p = 0.049), cyberslacking (Post-test: $F_{1,40}$ = 4.20, p = 0.047; Follow-up: $F_{1,40}$ = 13.34, p = 0.001), and decisional procrastination (Post-test: $F_{1,40}$ = 6.66, p = 0.014; Follow-up: $F_{1,40}$ = 6.12, p = 0.018) significantly decreased in the CBGT group compared to the control group. CBGT explained 23% of the changes in the total workplace procrastination score and 22% of the changes in the component of soldiering (p < 0.05). **Conclusions:** CBGT significantly reduced workplace and decisional procrastination in midwives.

Keywords: *Cognitive behavioral therapy, midwifery, procrastination, randomized controlled trial, workplace*

Introduction

Procrastination is defined as any postponement of and delay in work and activity.[1] Although, no study has examined the global prevalence of procrastination.[2] The review of various studies has revealed that the prevalence of chronic procrastination in the general population is 15–20%.[1,3,4] Its prevalence among medical students was estimated at 63% and among midwifery students at 80–95%.[1,5] Very few studies have been performed on workplace procrastination.[6] Procrastination in the workplace is defined as delaying work-related activities and engaging in activities irrelevant to what has been described in work charts during work hours, which affects individual and organizational health negatively. Procrastination at work is categorized into two different types of behaviors, soldiering, and cyberslacking. Soldiering refers to avoiding work tasks for more than 1 hour a day without aiming to harm or shifting work onto others. Cyberslacking is a prevalent concept and includes behaviors such as shopping online, checking social networking sites, gaming, or instant messaging at work instead of engaging in work tasks.[7] Midwifery is the health-related profession that affects the health of mothers and newborns; thus, any procrastination in this profession can have irreparable consequences.[8,9] More than 60% of midwives experience emotional exhaustion due to occupational stress[10] as a result of which10% of them leave their jobs.[11] Clinical decision-making is an important part of the healthcare process.[12] Decisional delay can deprive

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clients of timely healthcare and may threaten their health and life. Decisional procrastination refers to a particular type of chronic procrastination in which the person delays decision-making under stressful circumstances or responding to certain issues.[13,14]

About 60% of deaths in pregnant women are due to doctors' and midwives' mistakes and medical errors.[15] Midwives' mistakes do not seem to be irrelevant to decisional procrastination. A study showed that decisional procrastination was at an average level in healthcare workers.[16] The prevalence of average and severe workplace procrastination among midwives in Iran is reported as 17.1% and 1.5%, respectively.[17]

Procrastination is a multi-dimensional concept and has important cognitive, behavioral, and emotional components. Therefore, psychological interventions should also be able to address its underlying components. There are different approaches to overcoming procrastination such as emotion regulation,[18] Acceptance and Commitment Therapy (ACT),[19] and Cognitive Behavioral Therapy (CBT).[20] Attempts have been made to explain procrastination based on the acceptance and commitment model.[21] Several studies have been conducted on the effectiveness of educational interventions in this area, but few studies have supported its efficacy.[22,23] However, a specific protocol and manual has not been presented for procrastination based on ACT. CBT has also proposed an explanatory model and a limited number of studies have been conducted on the effectiveness of some of its technics,[24,25] but it has also presented a protocol based on its formulation that has not yet been studied. Studies on workplace and decisional procrastination in work environments are scarce, and most studies have been carried out on student populations.[6] Consequently, psychological treatments have provided evidence for procrastination in academic settings. We anticipated that this intervention would be effective in the workplace and decisional procrastination in health providers especially in midwives because different types of situation-specific procrastination such as academic and workplace procrastination have common underline cognitive, emotional, and behavioral components. In addition, CBT claims to target these common factors. We searched for, but did not find any study in this regard. Therefore, the present study was conducted with the aim to investigate the effectiveness of Cognitive Behavioral Group Therapy (CBGT) on workplace and decisional procrastination in midwives.

Materials and Methods

This study was conducted from October 2017 to June 2018. It was a randomized, controlled trial, which was registered in the Iranian Registry of Clinical Trial with the number IRCT2015211025477N4. All midwives (n = 150) working in public and private hospitals of Zanjan, Iran, were invited to participate, and 125 midwives consented to participate in the study. The purpose of the study was clarified through telephone calls and emails that were sent to all midwives. The workplace and decisional procrastination of midwives were considered as the primary outcome. The inclusion criteria comprised of an undergraduate degree in midwifery, willingness to participate in the study, and a score higher than the cut-off point (above 32) in the Tuckman procrastination scale (TPS) and a score lower than the cut-off point (48) in the Depression, Anxiety, and Stress Scale (DASS-21), because the treatment protocol for procrastination may be affected by participant's depression, anxiety, and perceived stress. The exclusion criteria included the unwillingness to continue the study, and being absent from more than 2 consecutive sessions. Finally, 47 out of the 125 participants were eligible for participation in the study. The participants were randomly assigned to the CBGT (n = 24) and control (n = 23) groups using the Random Number Generation software (2×dsoft, India). We generated random numbers between 0 and 9, and then, we added the numbers in the software; individuals with odd numbers were allocated to the intervention group, and those with even numbers were allocated to the control group. The sample was matched based on TPS and DASS-21 scores. In each group, 3 participants were not accessible at the posttest phase, because they discontinued the CBGT sessions [Figure 1]. The study had 2 therapists, both with over 2 years of experience in CBT for procrastination. The therapists were blind to the assignment of groups, statistical analysis, and performing of measures. The assignment of therapists to the groups was also completely random and they were blind to this also.

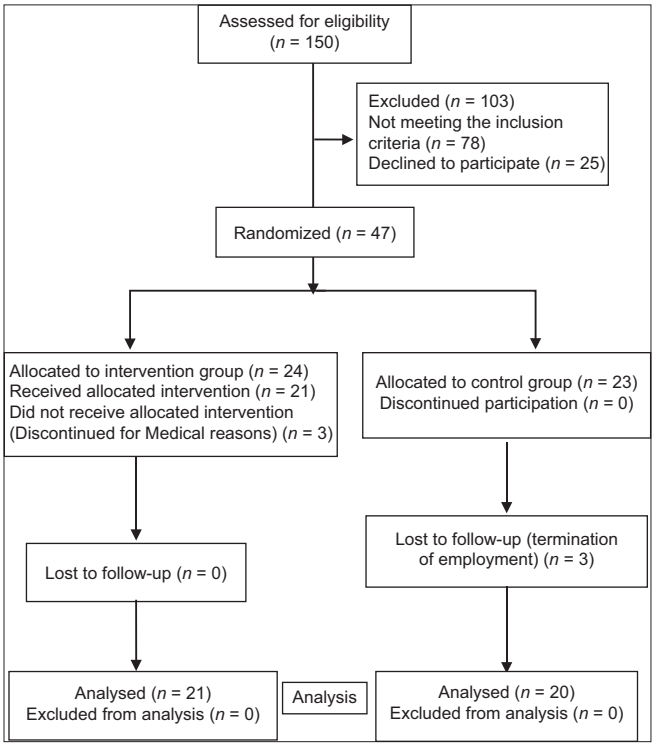

Figure 1: Trial flow chart

The participants were assessed using the DASS-21, TPS, Decisional Procrastination Scale (DPS), and Procrastination at Work Scale (PAWS). The DASS-21 was designed as a self-report instrument by Lovibond and Lovibond to measure the 3 related negative emotional states of depression, anxiety, and tension/stress. Each item is scored based on a 4-point Likert scale, and the total score of the scale ranges from 0 to 63.[26] The Cronbach's alpha coefficient for depression, anxiety, and stress was, respectively, reported as 0.85, 0.75, and 0.87.[27] The TPS was designed by Tuckman, consists of 16 items, and the range of its total score is 16-64. TPS is a self-report measure used to assess procrastination and self-regulation performance. The items of the TPS are scored based on a 4-point Likert scale. The reliability of the TPS was estimated to be 0.86 using Cronbach's alpha.[28] The DPS was developed by Mann, and it consists of five terms, which are scored based on a 5-point Likert scale.[29] It is a valid measure of indecision. The coefficient of internal consistency of the DPS was reported as 0.72–0.80 using Cronbach's alpha and its test-retest reliability was reported as 0.62–0.69.[30] The PAWS was designed by Metin *et al*.; this tool consists of 16 questions in the 2 subscales of cyberslacking and soldiering, and its total score ranges from 0 to 48. PAWS is a measure that can be used to assess non-work-related activity during work hours. The reliability of the subscales of PAWS ranged between 0.84 and 0.69 (obtained using Cronbach's alpha).[7] Instruments in both CBGT and control groups were completed 3 times, before the intervention, immediately after the intervention, and at the 2-month follow-up.

In the present study, Saulsman and Nathan's CBT protocol was adopted in a group format.[31] This intervention was performed in 7 sessions per week, each lasting 90 min. In each session, a worksheet about related topics was completed by the participants with the help of the members of the group. The content of the first, second, and third sessions was, respectively, about understanding procrastination, the extraction of underlying assumptions of procrastination, and changing procrastination. Discarding procrastination justifications was discussed in the fourth session, and behavioral techniques to discard procrastination on the fifth session. The sixth session was about adjustment of assumptions and distress tolerance. In the seventh session, the skills taught on the previous sessions were reviewed, the implementation problems of techniques for subjects were fixed and a follow-up program was designed. Saulsman and Nathan's protocol can be implemented in a group format. The principles of group intervention are common among all group therapies based on CBT. The number of sessions is based on the therapeutic sections of the protocol. The duration of each session also depends on protocol recommendations and CBT approaches. The control group received the treatment booklet free of charge after treatment.

Chi-squared and independent t-test were used to compare the two groups in terms of demographic variables. Kolmogorov–Smirnov test, Levene's test, and *t*-test were, respectively, used to assess the normal distribution of variables, the similarity of variances in the two groups at pretest, and differences in workplace procrastination and decisional procrastination between the two groups. Repeated measures analysis of variance (ANOVA) was used to determine the effect of CBGT on workplace procrastination and decisional procrastination of midwives working in hospitals in Zanjan. The Least Significant Difference (LSD) post hoc test was used to examine the time effects of the dependent variables two by two. According to assumptions, a one-way analysis of covariance (ANCOVA) was used to compare the CBGT group with the control group by controlling the effect of pretest differences of groups as a covariance.

Ethical considerations

This study was approved by the Research Ethics Committee of Zanjan University of Medical Sciences, Zanjan, in October 2017 (the ethics committee approval code: IR.ZUMS.REC.1396.335). The study participants were informed of the study purpose and written consent forms were obtained from them. The participants were free to withdraw from the study at any time without any negative impacts on their involvement in future services or current programs and relationships with any of the researchers or research bodies involved.

Results

The mean (standard deviation) of the age of the CBGT and control groups was 31.52 (5.82) and 35.75 (8.04) years, respectively. The mean (SD) of work experience in the CBGT and control groups was 7.43 (5.21) and 11.24 (7.96) years, respectively. The results have indicated the homogeneity of the control and CBGT groups in all demographic variables ($p > 0.05$).

The mean (SD) of workplace procrastination in the CBGT and control groups was 10.57 (7.65) and 12.70 (6.63) at the pretest phase, respectively. The independent *t*-test showed no statistically significant differences between the two groups in terms of workplace and decisional procrastination and their subscales at the pretest phase [Table 1].

The results revealed that, in the control group, the effect of time in the 3 stages of evaluation of the workplace and decisional procrastination was not significant. The results of repeated measures ANOVA showed that the main effect of the intervention in the 3 stages on workplace procrastination and soldiering component was significant in the CBGT group ($p < 0.01$). In other words, in the CBGT group, there was a significant difference in the averages of the dependent variables at follow-up compared to the pretest. LSD test results indicated a significant reduction in the mean of workplace procrastination and the component

Table 1: Mean and standard deviation of dependent variables at different phases of the study in the intervention and control groups

Dependent variables	CBGT* group			Control group			LSD** test *p*		
	Pretest	Posttest	Follow-up	Pretest	Posttest	Follow-up	Pretest to Post-test	Posttest to follow-up	Pretest to follow-up
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)			
Workplace procrastination	10.57 (7.65)	7.47 (7.60)	7.14 (6.59)	12.70 (6.63)	12.80 (5.53)	12.50 (6.41)	0.005	0.779	0.006
Soldiering	6.81 (3.97)	4.76 (4.13)	4.76 (4.28)	7.40 (3.89)	7.60 (2.74)	7.05 (3.43)	0.003	1	0.027
Cyberslacking	3.76 (3.68)	2.71 (3.47)	2.38 (2.31)	5.30 (2.74)	5.20 (2.79)	5.45 (2.98)	0.092	0.655	0.037
Decisional procrastination	7.10 (5.14)	5.33 (3.95)	5.38 (4.63)	8.20 (3.46)	7.90 (3.27)	7.90 (3.44)	0.038	0.945	0.113

*CBGT=Cognitive behavioral group therapy, **LSD=Least significant difference

Table 2: Comparison of within-group variations of the dependent variables in the intervention and control groups

Group	The dependent variables	SS*	MS**	F	Eta	df	*p*
CBGT***	Workplace procrastination	150.13	75.06	6.04	0.23	2	0.005
	Soldiering	58.70	29.35	5.79	0.23	2	0.006
	Cyberslacking	21.81	10.90	2.44	0.11	2	0.099
	Decisional procrastination	42.30	2.16	2.79	0.12	2	0.073
Control	Workplace procrastination	0.93	0.47	0.29	0.01	2	0.747
	Soldiering	3.10	1.55	0.92	0.05	2	0.405
	Cyberslacking	0.63	0.31	0.78	0.04	2	0.464
	Decisional procrastination	3.60	1.80	2.02	0.10	2	0.146

*SS: Sum of Squares, **MS: Mean Sum of Squares, ***CBGT: Cognitive behavioral group therapy

of soldiering in the posttest compared to pretest and in the follow-up compared to the pretest ($p < 0.05$). There was no significant difference in the independent variables at follow-up compared to the posttest [Tables 1 and 2].

In the component of cyberslacking, repeated measures ANOVA indicated that the main effect of the intervention was not significant. LSD post hoc test revealed that the mean of cyberslacking significantly decreased at follow-up compared to the pretest ($p = 0.037$). No significant differences were observed in the posttest compared to the pretest, and the follow-up compared to posttest. The results illustrated that the main effect of the intervention on decisional procrastination was not significant. LSD post hoc test showed that CBGT significantly reduced decisional procrastination in the posttest compared to the pretest ($p = 0.038$). There was no significant difference in decisional procrastination in the follow-up compared to the pretest and posttest [Tables 1 and 2].

CBGT explained 23%, 22%, 11%, and 12% of the total changes in the score of workplace procrastination, component of soldiering, a component of cyberslacking, and decisional procrastination, respectively [Table 2].

The study results showed that after controlling the effect of pre-test, the total score of workplace procrastination and its subscales in the CBGT group significantly decreased compared to the control group at the post-test phase ($p < 0.05$). Moreover, these differences were also observed in decisional procrastination ($p = 0.014$). Workplace procrastination and its subscales and decisional procrastination were lower in the CBGT group compared to the control group at the follow-up phase (all $p < 0.05$) [Table 3].

Discussion

CBGT was effective in workplace procrastination. In line with the results of the present study, some studies have reported the effectiveness of CBGT in reducing procrastination.[19,22] We did not find a study with which to compare our findings on workplace procrastination. To the best of our knowledge, the present study is the only one that has been conducted on the reduction of workplace procrastination among midwives working in hospitals; other studies have investigated other aspects of student procrastination. Therefore, caution should be taken in comparing these results with that of other studies.

The effectiveness of CBGT on procrastination could be explained by some mechanisms. The rules and assumptions of procrastination such as responsibility and coercion, pleasure, fear of failure, and low self-esteem are recognized and restructured. By changing the underlying assumptions of individuals with procrastination, the intrinsic and extrinsic triggers of this behavior no longer appear. One of the suggested rules in this study was that "as an inexperienced midwife, I should not expect to do anything like experienced colleagues in the shortest possible time; on the other hand, it is better to compare my current behavior with previous behavior, not with the feedback of others". Another mechanism, which seems to be effective, is focusing on increasing people's tolerance of disturbances. Attention-awareness techniques and disturbance tolerance may lead to a reduction in procrastination. This mechanism is consistent with studies that have reduced procrastination through emotion regulation approaches.[18] The last mechanism, which may be effective, is simplifying and separating unpleasant and avoidance activities that cause

Table 3: Corrected mean (SD) and analysis of variance statistics in the dependent variables for the intervention and control groups

Stages	Independent variable	Corrected mean		MS	F	Eta	df	*p*
		CBGT*	Control					
		Mean (SD)	Mean (SD)					
Post-test	Workplace procrastination	8.35 (0.72)	11.88 (0.73)	124.98	11.78	0.237	1	0.001
	Soldiering	4.98 (0.45)	7.37 (0.46)	58.08	13.77	0.266	1	0.001
	Cyberslacking	3.31 (3.42)	4.57 (0.43)	15.60	4.20	0.100	1	0.047
	Decisional procrastination	5.68 (0.50)	7.53 (0.51)	34.38	6.66	0.149	1	0.014
Follow-up	Workplace procrastination	7.94 (0.78)	11.67 (0.80)	139.19	11.12	0.226	1	0.002
	Soldiering	4.96 (0.65)	6.85 (0.66)	36.32	4.15	0.098	1	0.049
	Cyberslacking	2.90 (0.38)	4.91 (0.39)	39.97	13.34	0.260	1	0.001
	Decisional procrastination	5.71 (0.69)	8.16 (0.71)	60.34	6.12	0.139	1	0.018

CBGT=Cognitive behavioral group therapy

procrastination. It seems that the protocol used in the present study may prevent avoidance behavior.[31]

Decisional procrastination did not change significantly in the CBGT group. However, in the posttest and follow-up phases, decisional procrastination was significantly lower in the CBGT group in comparison to the control group. Considering that decision-making and the delaying of it have a completely cognitive structure, it can be concluded that the cognitive components of the intervention are effective in reducing decisional procrastination. The present study findings showed that the effectiveness of the intervention is moderate on decisional procrastination, which is consistent with the findings of Rozental *et al*.[32] This seems to have 2 causes. First, for some people, procrastination is not merely a state, but a trait, which becomes habitual behavior. Procrastination is influenced by 2 personality traits, namely, the lack of commitment, and neuroticism.[33] The presence of these traits causes poor prognosis in treatment.[34,35] Second, procrastination in different environments may have different dimensions.

This study had some limitations. Generalization of the present study findings to other studies should be done with caution due to its small sample size and the different dimensions of procrastination in different environments. The follow-up phase only lasted for 2 months, and the study population consisted of a group of health care providers. It seems that more studies are required on the effectiveness of CBGT on decisional procrastination in the workplace among midwives. It seems that the efficiency of the health care system is improved by reducing the risk of mistakes and increasing the wellbeing of clients and midwives. The results of the study may be affected by the lack of intervention in the control group.

Conclusion

In general, the results of this study showed that CBGT is effective in reducing procrastination among midwives. Therefore, considering the importance of procrastination in midwives and nurses, CBGT can be used to educate midwives to promote their engagement in work and professional duties.

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Conflicts of interest

Nothing to declare.

References

1. Steel P. The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. Psychol Bull 2007;133:65-94.
2. Ferrari JR, O'Callaghan J, Newbegin I. Prevalence of procrastination in the United States, United Kingdom, and Australia: Arousal and avoidance delays among adults. N Am J Psychol 2005;7:1-6.
3. Gupta R, Hershey DA, Gaur J. Time perspective and procrastination in the workplace: An empirical investigation. Curr Psychol 2012;31:195-211.
4. Steel P, Ferrari J. Sex, education and procrastination: An epidemiological study of procrastinators' characteristics from a global sample. Eur J Pers 2013;27:51-8.
5. MohammadiBytamar J, Zenoozian S, Dadashi M, Saed O, Hemmat A, Mohammadi G. Prevalence of academic procrastination and its association with metacognitive beliefs in Zanjan University of Medical Sciences, Iran. J Med Educ Deve 2017;10:84-97.
6. van Eerde W. Procrastination and well-being at work. In: Procrastination, Health, and Well-being. Academic Press; 2016. p. 233-53.
7. Metin UB, Taris TW, Peeters MC. Measuring procrastination at work and its associated workplace aspects. Pers Individ Diff 2016;101:254-63.
8. Gupta R, Hershey DA. Time perspective as an antecedent of trust in manager and its impact on employee attitudes. Time Soc 2017;26:1-29.
9. HajiFoghaha M, Keshavarz T. Comparison of awareness degree of Islamic punishment rules related to medical staff in incumbent

midwives in Shiraz hospitals and clinics. Iran Sci J Forensic Med 2008;14:18-21.
10. Mollart L, Skinner VM, Newing C, Foureur M. Factors that may influence midwives work-related stress and burnout. Women Birth 2013;26:26-32.
11. McCool W, Guidera M, Reale B, Smith A, Koucoi J. Professional issues related to obstacles to midwifery practice in the Americas: A pilot survey. Midwifery 2013;29:838-44.
12. Germeijs V, Verschueren K. Indecisiveness and big five personality factors: Relationship and specificity. Pers Individ Diff 2011;50:1023-8.
13. Steel P. Arousal, avoidant and decisional procrastinators: Do they exist? Pers Individ Diff 2010;48:926-34.
14. Goroshit M, Hen M. Decisional, general and online procrastination: Understanding the moderating role of negative affect in the case of computer professionals. J Prev Interv Community 2018;46:279-94.
15. Ayoubian A, MahmoodAbadi HB, Dehaghi ZH. Midwifery errors: A descriptive study in Isfahan forensic medicine general department. Materia Sociomed 2013;25:175-7.
16. Akdemir B, Özkan G. A research to examine general and decisional procrastination of healthcare workers according to differences of demographical characteristics. J Hum Sci 2018;15:1650-63.
17. Rezaei B, Yarmohammadian MH, MahmoodzadehArdakani H. Assessing the prevalence of organizational procrastination and the associated factors among nursing and midwifery staff. Quart J Nurs Manage 2016;5:17-28.
18. Eckert M, Ebert DD, Lehr D, Sieland B, Berking M. Overcome procrastination: Enhancing emotion regulation skills reduce procrastination. Learn Individ Diff 2016;52:10-8.
19. Wang S, Zhou Y, Yu S, Ran L-W, Liu X-P, Chen Y-F. Acceptance and commitment therapy and cognitive–behavioral therapy as treatments for academic procrastination: A randomized controlled group session. Res Soc Work Pract 2017;27:48-58.
20. Zacks S, Hen M. Academic interventions for academic procrastination: A review of the literature. J Prev Interv Community 2018;46:117-30.
21. Eisenbeck N, Carreno DF, Uclés-Juárez, R. From psychological distress to academic procrastination: Exploring the role of psychological inflexibility. J Contextual Behav Sci 2019;13:103-8.
22. Scent CL, Boes SR. Acceptance and commitment training: A brief intervention to reduce procrastination among college students. J College Stud Psychother 2014;28:144-56.
23. Glick DM, Orsillo SM. An investigation of the efficacy of acceptance-based behavioral therapy for academic procrastination. J Exp Psychol Gen 2015;144:400-9.
24. Ozer BU, DemirA, Ferrari JR. Reducing academic procrastination through a group treatment program: A pilot study. J Ration Emot Cogn Behav Ther 2013;31:127-35.
25. Rozental A, Forsström D, Lindner P, Nilsson S, Mårtensson L, Rizzo A. Treating procrastination using cognitive behavior therapy: A pragmatic randomized controlled trial comparing treatment delivered via the internet or in groups. Behav Ther 2018;49:180-97.
26. Lovibond PF, Lovibond SH. The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the beck depression and anxiety inventories. Behav Res Ther 1995;33:335-43.
27. Samani S, Joukar B. A study on the reliability and validity of the short form of the depression anxiety stress scale (DASS-21). J Soc Sci Hum Shiraz Univ 2007;26:65-77.
28. Tuckman BW. The development and concurrent validity of the procrastination scale. Educational and psychological measurement 1991;51:473-80.
29. Mann, L. Flinders Decision Makiking Questionnaire II, unpublished questionnaire, The Flinders University of South Australia, 1982.
30. Beswick G, Rothblum ED, Mann L. Psychological antecedents of student procrastination. Australian Psychol 1988;23:207-17.
31. Saulsman L, Nathan P. Put off Procrastinating. Perth, Western Australia: Centre for Clinical. 2008.
32. Rozental A, Bennett S, Forsström D, Ebert DD, Shafran R, Andersson G, *et al*. Targeting procrastination using psychological treatments: A systematic review and meta-analysis. Frontier Psychol2018;9:5588.
33. Heshmati JA, Saed O, Mohammadi BJ, Zenoozian S, Yusefi F. The efficacy of group acceptance and commitment therapy on reducing academic procrastination and improving difficulty in emotion regulation: A randomized clinical trial. Sci J Kurdistan Univ Med Sci 2018;23:65-77.
34. Kim S, Fernandez S, Terrier L. Procrastination, personality traits, and academic performance: When active and passive procrastination tell a different story. Pers Individ Diff 2017;108:154-7.
35. Ramos-Grille I, Gomà-i-Freixanet M, Aragay N, Valero S, Vallès V. The role of personality in the prediction of treatment outcome in pathological gamblers: A follow-up study. Psychol Assess 2013;25:599-605.