The Correlation between Emotional Disorders Based on RDoC and Neurotic Spectrum Disorders in DSM5: Investigating the Validity and Reliability of Self-Reports

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Abstract

This study aimed to investigate the relationships between multi-dimensional emotional disorders questionnaire according to research domain criteria and Neurotic spectrum disorders in DSM5. Three hundred of depression, anxiety and obsessive-compulsive disorder patients from mental health centers of Tehran were selected voluntarily to participate in this research. Results showed the correlation between multi-dimensional emotional disorders questionnaire and the Beck's depression, Spielberger's anxiety and Madsley obsessive questionnaires were significant. Furthermore, the results of the correlation between the multi-dimensional emotional disorders questionnaire subscales and total score were significant as well as the internal consistency between the total scores and its subscale were significant too. The findings of the psychometric properties evaluation of multi-dimensional emotional disorders questionnaire represent the acceptable validity and reliability in Iranian mental disorder patients that leads clinicians to evaluate ten dimensions of emotional dysfunctions.

Keywords: Dimensional approach, Multi-dimensional emotional disorders inventory, Neurotic spectrum disorders, Research domain criteria

Introduction

According to research domain criteria (RDoC), emotional disorders such as anxiety, depression, eating, somatic symptoms…, etc, involve in so many similarities in terms of comorbidities (Khazanov, et al., 2020), structure-functional abnormality, and increased capacity of negative valence as well as decreased capacity of positive valence (Łos & Waszkiewicz, 2021). These problems lead them to emotional avoid and distress stability (Musket, et al., 2021). Most of mental disorders suffer from the similar symptoms that may not concern as the main symptom. For example, anxiety and worry are the keys of somatic symptom disorders toward health problems (Smith & Alt, 2020) which simultaneously associate in panic, agoraphobia, OCD and anxiety disorders. According to neuro-emotional studies there is over activity in insula and amygdala in the patients suffer from emotional disorders (Pederson & Holtz, 2019).

Theory framework of RDoC explains gens, behaviors, psycho-functions and brain chemicals are the assessment areas to diagnose mental disorders. These assessment areas should be met in RDoC at six criteria: Negative valence (NA), positive valence (PA), cognitive systems, social information processing systems (neurotic (N) and extraversion (E)), automatic arousal regulative systems (AA) and sensory-motor systems as behavior inhibition and activation systems (BIS/BAS) (Khazanov, et al., 2020). In accordance with RDoC, increased valence of NA/N/BIS as well as decreased valence of PA/E/BAS associate with emotional disorders (Nobis, et al., 2020). Moreover, arousal and avoidance are two factors that may comorbid with all emotional disorders.

This study aimed to investigate the structural convergent correlation between multi-dimensional emotional disorders questionnaire (MEDI) based on RDoC criteria and neurotic spectrum disorders scales based on DSM5 in Iranian patients. MEDI is one of the most

powerful instruments for emotional disorders diagnosis that its psychometrics properties have not been investigated in Iran before. Hence, reliability and validity specifications of this questionnaire is one of this research's necessity. MEDI is translated to Persian by Zandkarimi and Bahaodini (2018) and has obtained content validity.

Method

In this descriptive study with correlation design, 300 patients suffered from depression (100 persons), anxiety (100 persons) and obsessive-compulsive disorder (100 OCD persons) voluntarily participated from six mental health institutes. Sixteen participants were excluded due to data corruption. The regarded entry criteria were anxiety, depression or OCD clinical diagnosis, non-comorbid disorders, age between 18 and 40 from both genders, without any medication or psychological treatment before filling out the questionnaires and cut-off point for beck depression, Spielberger anxiety and Madsley OCD questionnaires. The measures of this research were listed below:

Beck depression questionnaire (1988) contains 21 questions scored between 0-63 with 19 cut-off point. Its internal consistency was 0.93 and simultaneous validity was 0.80 in relation with general health questionnaire (Taheritanjani, et al., 2014).

Spielburger anxiety questionnaire (1983) with 40 questions scored between 40-160 with 31 cut-off point for state and 34 for trait anxiety. The internal consistency for state was 0.93 and for trait was 0.90. The simultaneous validity was 0.93 in relation with stress questionnaire (Amiri, et al., 2015).

Madsleys OCD questionnaire (Hodson & Rochman, 1977) includes150 questions scored between 0-300 and 150 cut-off point. The internal consistency was 0.84 as well as divergent validity was 0.87 in relation with Yale-Brown obsessive compulsive scale (Imani, et al., 2008).

Multi-dimensional emotional disorders (MEDI) with 55 questions that measures nine dimensions of emotional disorders: negative valence (NA), positive valence (PA), depression mood (DM), automatic arousal (AA), somatic anxiety (SOM), Irrational cognitions (IC), social evaluation (SEC), Avoidance (AVD) with two subscales as active avoidance (AAV) and passive avoidance (PAV). The scores were between 0-440 and factor analysis showed correlation coefficients between 0.77 and 0.93 for all subscales. Divergent correlation between MEDI and DEP of DSM5 was 0.63, and GAD of DSM5 was 0.67 and OCD of DSM5 was 0.43 according to Rosellini (2014). The structural divergent validity and internal consistency of MEDI has been investigated in this study.

Results

The means of each sub scales in three groups (depression, anxiety and OCD) were NA (28.42, 30.80, 33.33), PA (28.00, 27.90, 28.77), DM (31.64, 56.88, 63.35), AA (21.89, 28.00, 31.56), SOM (20.40, 26.03, 30.21), IC (28.72, 19.80, 22.77), SEC (31.78,17.82, 22.12), AAV (30.81, 33.46, 33.33), PAV (29.92, 27.00, 27.91) and for total score of MEDI for each group were 283.06, 290.77, and 321.95. The correlation between MEDI subscales and depression, anxiety and OCD as well as Cronbach's Alpha are listed below in table 1.

Table 1. Correlation between MEDI sub scales and depression, Anxiety and OCD Scores, as well as Cranbach's alpha coefficients

Variables	NA	PA	DM	AA	SOM	IC	SEC	AVD	AAV	PAV	MEDI
Depression	0.28*	0.06	0.22*	**0.35**	**0.41**	0.14	0.22*	0.14	0.04	**0.32**	**0.72**
Anxiety	0.24*	0.16	0.21	**0.41**	**0.40**	0.15	**0.39**	**0.47**	0.31*	**0.38**	**0.75**
OCD	**0.40**	**-0.38**	**0.44**	0.30*	**0.50**	**0.45**	**0.44**	0.34*	0.11	**0.51**	**0.78**
MEDI Total	**0.78**	**0.71**	**0.86**	**0.73**	**0.73**	**0.70**	**0.76**	**0.58**	**0.32**	**0.73**	1.00
Cranbach's alpha coefficients	<u>0.83</u>	<u>0.84</u>	<u>0.80</u>	<u>0.83</u>	<u>0.73</u>	<u>0.84</u>	<u>0.73</u>	<u>0.84</u>	<u>0.77</u>	<u>0.74</u>	<u>0.83</u>

Note. Stared scores reveals $p<0.05$ and bold scores reveals $p<0.01$.

As mentioned in table 1, convergent validity between MEDI total score and depression was 0.72, anxiety was 0.75 and for OCD was 0.78. On the other hand, the correlation between MEDI's subscales and total score were between 0.58 and 0.86 (PAV was excluded). The Cranbach's alpha coefficients between MEDI's subscales and total score were between 0.73 and 0.84 and for total score was 0.83 that all were significant.

Discussion

Finding represented that the MEDI's mostly correlated subscales with depression and anxiety and OCD are negative valence, automatic arousal, somatic symptoms, passive avoidance and irrational social evaluation depression. However, active avoidance only correlated with anxiety for they actively escape the threat factors. Neurotic patients experience negative valences such as sorrow, fear, loneliness, despair and worry as well as ruminating the others judgments about himself, somatic symptoms and avoidance that prepare them to avoid from irritant stimulants (Kazanov, et al., 2020; Nobiz, et al., 2020) and negative valence helps to constant the avoidance patterns.

The limitations of this study were lack of generalizability of the results to panic, agoraphobia, eating and PTSD patients. In this regard, we suggest this questionnaire to apply in a wider and more diverse volume of neurotic disorders. However, further studies are needed to evaluate the diagnosis capability of MEDI in pure neurotic patients.

References

Amiri, S., Ghaseminavab, A., & Yaghoobi, A. (2015). Reliability, validity and factor analysis of adolescent's stress questionnaire. *Journal of Educational Assessment; 25*(3), 89-116.

Beck, A. T., Steer, R. A., & Garbin, G. M. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8,* 77-100.

Hodgson, R. J. & Rachman, S. (1977). Obsession-compulsive complaints. *Behavior Research and Therapy, 15,* 389-395.

Imani, M., Alilou, M., Bakhshipour, M., Farnam, A., & Qolizadeh, H. (2008). Comparison of the effectiveness of cognitive-behavioral therapy, exposure and response prevention and fluoxetine in the recovery of people with obsessive-compulsive disorder. *Journal of Knowledge Behavior; 16*(34), 39-50.

Khazanov, G. K., Ruscio, A. M., & Forbes, C. N. (2020). The positive valence systems scale: Development and validation. *Journal of Assessment;* 27(5), 1045-1069.

Łos, K., & Waszkiewicz, N. (2021). Biological markers in anxiety disorders. *Journal of Biological Medicine, 10*(1744), 1-18.

Nobis A, Zalewski D, Waszkiewicz N. (2020). Peripheral markers of depression. *Journal of Clinical Medicine*; *9*(12), 3793-3800.

Pedersen, C. B., & Holtz, Y. (2019). Exploring comorbidity within mental disorders among a Danish national population. *JAMA Psychiatry; 76*(3), 259–270.

Rosellini, A. J. (2014). *Initial development and validation of a dimensional classification system for the emotional disorders (Unpublished doctoral dissertation).* Boston: Boston University, MA.

Smith, K. A., & Alt, J. A. (2020). The relationship of chronic rhino sinusitis and depression. *Current Opinion in Otolaryngology & Head and Neck Surgery; 28*(1), 1–5.

Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory.* CA: Consulting Psychologists Press.

Taheritanjani, P., Ghamaroodi, G., Azadbakht, M., Fekri, Z., Fathizadeh, S., & Ghisvand, E. (2015). Investigating the validity and reliability of second version of Beck depression inventory in Iranian elders. *Journal of Sabzevar University of Medical Sciences; 22*(1), 189-198.

Zandkarimi, G., & Bahaodini, H. (2018). *Step-by-step manual of stress and emotion control: Unified protocol in emotional disorders treatment.* Tehran: Refah College Publishing.