

Research Paper: Cognitive Insight as the Differentiating Feature of Psychosis and Anxiety



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ABSTRACT

Objective: Cognitive theories and research have focused on the relationship between emotions, particularly anxiety, and the positive symptoms of psychosis. The aim of this study, based on Beck's cognitive theory, was to compare dysfunctional attitudes and cognitive insight between patients with anxiety disorders and those with delusion.

Methods: The study sample consisted of 90 participants in 3 groups (anxiety=30, delusion=30, healthy=30). The study subjects were interviewed using Structured Clinical Interview (SCID-I) for the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). Then, they completed Beck Anxiety Inventory (BDI), Peters et al.'s Delusions Inventory (PDI), General Health Questionnaire-28 (GHQ-28), Dysfunctional Attitudes Scale-26 (DAS-26), and Beck Cognitive Insight Scale (BCIS).

Results: The present research results indicated that anxiety and delusion groups presented significantly greater dysfunctional attitudes than the healthy subjects ($P < 0.001$); however, there was no significant difference between the clinical groups. The anxiety group had significantly higher cognitive insight than the delusional ($P < 0.05$) and normal groups ($P < 0.01$); however, there was no significant difference between the last two groups.

Conclusion: Dysfunctional attitudes can be considered as a common aspect and cognitive insight as a differentiating aspect of anxiety and psychosis.

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Highlights

- A common process of the psychopathology between psychosis and anxiety is dysfunctional attitudes.
- Cognitive insight is the differentiating aspect of psychosis and anxiety.
- Higher self-certainty, but not self-reflectiveness, can be considered as a hallmark of delusion.

Plain Language Summary

Dysfunctional attitudes and cognitive insight are key components in the cognitive formulation of anxiety and delusion. We compared these factors between 3 groups of patients with anxiety disorders, psychotic disorders with delusion, and healthy individuals. The collected results presented higher dysfunctional attitudes in anxious and delusional patients than in the healthy group. Also, the anxiety and delusion groups manifested the highest self-reflectiveness and self-certainty, respectively. This study revealed that patients with anxiety disorders and those with delusion have similar dysfunctional attitudes about success-perfectionism, need for approval, and need for satisfying others. Although delusional patients are more confident in their beliefs and judgments, both clinical groups accept the corrective feedback. This research highlighted a continuum between anxiety and delusion, i.e., considerable in theory and treatment.

1. Introduction

Despite the efforts made in the twentieth century to distinguish neurosis from psychosis, recent cognitive models and empirical evidence suggest a continuum between these concepts (Freeman & Garety, 2003). Cognitive models emphasize the role of anxiety in the formation and maintenance of delusion. Garety, Kuipers, Fowler, Freeman & Bebbington (2001) suggested that anxiety plays an essential role in interpreting anomalous internal experiences. Furthermore, Freeman (2007) signified the role of anxiety in the formation, content, and maintenance of persecutory delusion. In another model, Morrison (2001) suggested that the difference in interpreting intrusions determines the difference of thought content between anxiety and psychotic disorders.

Consistent with cognitive theories, evidence introduced anxiety as a risk factor of psychotic disorders (Lim et al., 2015; McAusland et al., 2017) and suspiciousness (McAusland et al., 2017). Additionally, the high rate of comorbidity between anxiety and schizophrenia spectrum disorders was highlighted in some studies (Achim et al., 2011; Temmingh & Stein, 2015). High levels of anxiety are associated with the onset of paranoid episodes (Thewissen et al., 2011; Cowles & Hogg, 2019), more conviction of delusional beliefs (Garety et al., 2005), further delusion-induced distress (Startup, Freeman & Garety, 2007), and greater use of safety behaviors and avoidance in patients with delusion (Freeman, Ga-

rety & Kuipers, 2001). Bortolon & Raffard (2015) indicated that anxiety mediates the delusion-like experiences in patients with Obsessive-Compulsive Disorder (OSD); as anxiety rises, OCD symptoms become more similar to delusion-like experiences.

Therefore, there is a significant association between anxiety disorders and psychotic disorders. In the cognitive formulation of delusion, Beck addressed the similarities in thoughts and cognitive distortions associated with anxiety disorders and schizophrenia spectrum disorders (Beck, Rector, Stolar & Grant, 2009). Based on Beck's theory, the dysfunctional attitude is a key factor in the cognitive formulation of depression (Clark & Beck, 2010), anxiety (Clark & Beck, 2010), and delusion (Beck et al., 2009). The irrational beliefs about self, the future, and the world are the basic problems of emotional disturbances, like anxiety (Weissman & Beck, 1978). Evidence also supported the presence of further negative thoughts in patients with anxiety disorders, compared to the healthy population (Gül, Simsek, Karaaslan & Inanir, 2015; Shams & Milosevic, 2015). Beck et al. (2009) suggested that negative beliefs about the self (e.g. weak, powerless) and others (e.g. persecutor) are also involved in the generating of delusion. Oliver, O'Connor, Jose, McLachlan & Peters (2012) indicated that negative schemas make individuals more vulnerable to delusional ideas; this effect is mediated by anxiety. Besides, some studies outlined the relationship between negative schemas and the positive symptoms of psychosis (Jaya, Asccone & Lincoln, 2018; Taylor et al., 2014), particularly

paranoia (Lincoln et al., 2010), and persecutory delusion (Smith et al., 2006). Among patients with delusion, Freeman et al. (2013) outlined the common content of threat, negative thoughts about self, danger, and hypervigilance between anxiety and delusion. According to Morrison & Wells (2007), the worry was not significantly different between anxiety and psychotic disorders. However, we found no research to compare dysfunctional attitudes between patients with anxiety and psychotic disorders.

The other critical variable of the cognitive formulation of delusion is cognitive insight; Beck defines it as “the capacity to recognize cognitive distortions, evaluate or test them, and consider more realistic interpretations of events” (Beck et al., 2009). This capacity is impaired in delusional patients. Besides, Beck has developed a scale to measure it (Beck, Baruch, Balter, Steer & Warman, 2004). Beck Cognitive Insight Scale (BCIS) has been used to compare numerous groups (e.g. healthy, schizophrenia, bipolar, depression) (Beck et al., 2004; Colis, Steer & Beck, 2006; Warman, Lysaker & Martin, 2007; Uchida et al., 2014), but not various anxiety disorders. Shimshoni, Reuven, Dar & Hermesh (2011) investigated cognitive insight among patients with OCD, focusing on the BCIS relationship with clinical insight. However, they overlooked a comparison group.

Despite numerous studies investigating the relationship between anxiety and delusion, we found no research comparing the essential dimensions of the cognitive formulation; dysfunctional attitudes, and cognitive insight, in patients with anxiety disorders and patients with delusion. We hypothesized that dysfunctional attitudes are comparable in groups with anxiety and delusion; however, they are higher in both groups, compared to the healthy controls. We also hypothesized that cognitive insight is higher in the healthy group than the clinical population, i.e., higher in anxiety than delusion group.

2. Materials and Methods

We conducted this cross-sectional study from January 2019 to April 2019. Using the convenience sampling method, we selected 90 participants. Patients with anxiety disorders [AG: Anxiety Group; n=30; panic=2, OCD=13, Generalized Anxiety Disorder (GAD)=9, OCD & GAD=3, social phobia=2, OCD & social phobia=1] were selected from individuals referring to the clinic affiliated to the School of Behavioral Sciences and Mental Health (Tehran Institute of Psychiatry) of Iran University of Medical Sciences. Thirty patients with delusion (DG: Delusion Group) were recruited from inpatients with schizophrenia in Iran Psychiatric Hospital.

Thirty healthy participants (NG: Normal Group) were selected from the staff of the above-mentioned centers. Clinical groups were interviewed by Structured Clinical Interview for DSM-IV (SCID-I) to confirm their diagnosis. We obtained the informed consent forms from all the participants of AG and NG as well as legal or related relatives of DG. The inclusion criteria of the study were as follows: an age range of 18-65 years; education higher than a primary school; obtaining scores above 16 in BAI (just for AG), scores ≥ 22 in the Mini-Mental Status Examination (MMSE), and ≥ 9 delusions confirmed in Peters et al. Delusions Inventory (just for DG), and a score < 23 in the Global Health Questionnaire-28 (just for NG). The exclusion criteria of the study included a history of organic brain pathology, current substance use disorder, and receiving Cognitive Behavioral Therapy (CBT) in the last 3 months. Receiving electroconvulsive therapy in the last 3 months (just for DG), comorbid mood disorder (just for AG), and any current psychiatric disorders reported by NG were the specific exclusion criteria per group.

The following tools were employed in the current research.

Dysfunctional Attitudes Scale-26 (DAS-26)

DAS was developed by Weissman & Beck (1978) to assess dysfunctional attitudes in adults in two parallel forms with 40 questions. Ebrahimi, Samouei, Mousavii & Bornamanesh (2013) extracted 26 items of it, including 4 valid factors based on factor analysis and item-total correlation; success-perfectionism, need for approval, need for satisfying others, and vulnerability-performance. A Cronbach's alpha coefficient of 0.92 was obtained for this tool.

Beck Cognitive Insight Scale (BCIS)

BCIS was designed to identify the patient's perspective on anomalous experiences and the interpretation of particular life events. This 15-item scale has two main factors; self-reflectiveness, reflecting openness to corrective feedback and willingness to acknowledge fallibility; self-certainty, indicating confidence about patient's judgments and conclusions. Beck et al. (2004) reported the internal consistency for self-reflectiveness and self-certainty of this tool to respectively be 0.68 and 0.60. The validity ($r=0.74$) and reliability ($r=0.72$) of the Persian version of this scale were measured to be good (Yousefi, Oreyzi & Sadeghi, 2008).

Structured Clinical Interview for DSM-IV (SCID-I):

This is a semi-structured interview that provides a diagnosis based on the Diagnostic and Statistical Manual of Psychiatric Disorders (DSM) (First, Spitzer, Gibbon & Williams, 1997). Williams et al. (1992) reported the Kappa coefficient for this tool's current and lifetime diagnosis to respectively be 0.61 and 0.68. Kappa coefficient for the Persian version of this scale was reported as 0.52 for the current and 0.55 for lifetime diagnosis (Sharifi et al, 2004).

Beck Anxiety Inventory (BAI):

BAI is a 21-item self-report questionnaire that recognizes anxiety in the psychiatric population very well (Beck, Epstein, Brown & Steer, 1988). Validity ($r=0.72$, $P<0.001$), reliability ($r=0.83$, $P<0.001$), and internal consistency ($\alpha=0.92$) of the Persian version of BAI were calculated to be good (Kaviani & Mousavi, 2008).

Peters et al. Delusions Inventory (PDI)

Peters, Joseph & Garety (1999) developed PDI to measure delusional ideation in the healthy population. PDI includes a range of delusional beliefs (e.g. persecutory, religious, grandiosity). This 40-item scale has 3 dimensions of distress, conviction, and preoccupation. In this study, we just used the confirmation section of delusional beliefs. Cronbach's alpha coefficient and the test-retest reliability for the Persian version of PDI were computed as 0.83 and 0.7, respectively (Sharifi, Sajjadi-far & Amini, 2008).

General Health Questionnaire-28 (GHQ-28)

GHQ is a 28-Item self-report instrument for screening healthy subjects, developed by Goldberg and Hillier in 1979 (Goldberg & Hillier, 1979). GHQ-28 investigates 4 dimensions of somatic symptoms, including anxiety and sleep disturbance, social dysfunction, and depression during the last month. Cronbach's alpha coefficient for the Persian version of GHQ-28 has been reported to be 0.90 (Taghavi, 2002).

Mini-Mental Status Examination (MMSE)

MMSE was designed by Folstein, Folstein & McHugh (1975) to quickly and easily assess the cognitive status of psychiatric patients. Seyedian et al. (2008) reported 0.81 as the Cronbach's alpha coefficient of its Persian version with a cutoff point of 22. Cognitive variables were explored in this study (dysfunctional attitudes & cognitive

insight); thus, MMSE was used to rule out patients with severe cognitive impairments.

The obtained data were analyzed using SPSS v. 19. The Kolmogorov-Smirnov and Levene's tests were conducted to examine the normal distribution of data and equality of variances, respectively. Then, we conducted the one-way Analysis of Variance (ANOVA) and Bonferroni posthoc test.

3. Results

Demographic data, mean and standard deviation scores of the BAI, PDI, and GHQ-28 are described in Table 1. As per Table 1, there was no significant difference in age, gender, and educational level between the study groups.

The results of ANOVA and Bonferroni posthoc test for DAS and BCIS are presented in Table 2. There was a significant difference in at least one study group concerning the DAS scores. Posthoc test data revealed no significant difference between the AG and DG in DAS scores; however, the same was significantly lower in the NG ($P<0.001$).

BCIS composite index in the AG was significantly higher than that in the DG ($P<0.05$) and NG ($P<0.01$). Furthermore, there was no significant difference between the DG and NG in this respect. Comparing the scores of BCIS subscales (self-reflectiveness and self-certainty) indicated no significant difference in self-reflectiveness between the AG and DG; this difference was significantly higher than that in the NG ($P<0.05$). Moreover, the score of self-certainty was significantly higher in the DG ($P<0.05$) than in the other study groups. Besides, there was no significant difference between the DG and NG in this area.

4. Discussion

The present research results suggested no significant difference between the anxiety and delusion groups in dysfunctional attitudes, such as success-perfectionism, need for approval and need for satisfying others. This finding was in line with those of Freeman et al. (2013) and Morrison & Wells (2007). The clinical groups had more dysfunctional attitudes than the healthy individuals. This result was consistent with the cognitive theory and empirical evidence related to anxiety disorders (Clark & Beck, 2010; Gül et al., 2015; Shams & Milosevic, 2015) and delusion (Grant & Beck, 2009; Beck et al., 2009; Lincoln et al., 2010). Gaudiano & Miller (2007) reported significantly higher dysfunctional be-

Table 1. Demographic variables and Mean±SD scores of the research questionnaires (n=30)

Variables	Number or Mean±SD			Statistics		
	AG	DG	NG	F or χ^2	df	P
Male/female	11/19	19/11	12/18	5.089	2	0.079
Married	14	5	20	15.475	2	<0.001
Education	Primary school	2	8	10.788	8	0.214
	Completed high school	10	11			
	Above high school	18	11			
Age (y)	36.50±13.133	38.30±10.59	36.77±10.76	0.212	87	0.809
BAI	22.13±8.605					
PDI	16.47±9.051					
GHQ-28	14.17±5.427					

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AG: Anxiety group; DG: Delusion group; NG: Normal group; BAI: Beck anxiety inventory; PDI: Peters et al. Delusions Inventory; GHQ-28: General Health Questionnaire.

liefs in patients with psychotic major depression, compared to those with nonpsychotic depression; however, we detected no such difference between the anxiety and psychosis groups. Our study supported the hypothesis of analogous dysfunctional attitudes among patients with anxiety and delusion, suggesting a common process in the psychopathology of the two disorders.

Contrary to our second hypothesis, the results related to cognitive insight indicated that patients with anxiety disorders had the highest cognitive insight composite index; these data were consistent with those of studies that reported a positive correlation between BCIS, self-reflectiveness, anxiety, and depression (Palmer, Gillean & David, 2015; Van Camp, Sabbe & Oldenburg, 2017). According to these studies, the lowest scores of self-reflectiveness in healthy individuals can be explained based on the exclusion criterion of the high scores of

GHQ (including anxiety & depression) for the healthy group. Based on Beck's formulation of anxiety, vulnerability is the core of anxiety disorders; low self-confident patients underestimate their abilities to cope and focus on the selective recall of the past negative performance (Beck, Emery & Greenberg, 1985). Thus, they could be more willing to acknowledge fallibility than the healthy population. Additionally, patients with anxiety disorders are less confident about their cognitive abilities, like a memory that increases the necessity to control their mental processes (Al-Ghorabaie, Noferești, Fadaee & Ganji, 2016). Nakajima, Takano & Tanno (2017) suggested that the more focused individuals are on their thoughts and feelings, the more depression and anxiety they experience. Accordingly, the interaction between vulnerability and meta-cognitive components, like the need to control

Table 2. Comparison of dysfunctional attitudes and cognitive insight between groups (n=30)

Variables	Mean±SD			F	P	Posthoc
	AG	DG	NG			
DAS	101.20±28.16	94.10±23.15	70.83±18.04	13.721	<0.001	AG, DG>NG
BCIS	7.93±4.44	3.87±6.53	3.53±4.88	6.24	0.003	AG>DG, NG
Self-reflectiveness	14.7±3.6	13.23±3.83	10.27±4.66	9.28	<0.001	AG, DG>NG
Self-certainty	6.77±3.23	9.33±4.06	6.73±2.72	5.81	0.004	DG>AG, NG

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AG: Anxiety Group; DG: Delusion Group; NG: Normal Group; DAS: Dysfunctional Attitudes Scale; BCIS: Beck's Cognitive Insight Scale.

thoughts could make the anxiety group more self-reflective than the healthy subjects.

Our results indicated no significant difference between the anxiety and delusion groups in self-reflectiveness. Beck et al. (2004) also reported no significant difference in this characteristic between patients with schizophrenia and major depressive disorder. To explain this finding, Misdrahi, Denard, Swendsen, Jaussent & Courtet (2014) found a significant association between self-reflectiveness, BCIS composite index, and clinical insight (the awareness of mental disorder). Our clinical sample was selected from a clinic or a psychiatric hospital and they had received medication. Moreover, self-reflectiveness and clinical insight were significantly correlated; thus, receiving treatment in a therapeutic setting and awareness of mental disorders might increase the individual's tendency to accept fallibility and corrective feedback. Consistent with this possible explanation, research has suggested the low to moderate the effect of psychoeducation (Pijnenborg, van Donkersgoed, David & Aleman, 2013; Misdrahi et al., 2014) and medication (Shimshoni et al., 2011; Pijnenborg et al., 2013) on cognitive and clinical insight among patients with anxiety and psychosis.

Our results related to self-reflectiveness in healthy and delusion groups contrast with those of some previous studies (Warman et al., 2007; Uchida et al., 2014); there was a significantly higher self-certainty in the delusion group, compared to the anxiety and healthy groups, i.e., consistent with more empirical evidence. This finding provided further support for the studies reporting the significantly higher self-certainty in depressed patients with a psychotic feature than depressed patients (Beck et al., 2004); those with current delusion than without current delusion and healthy subjects (Warman et al., 2007); patients with more paranoid thoughts (Wüsten & Lincoln, 2015), and those at risk of a mental state than the healthy group (Uchida et al., 2014). Even after treatment, the high self-certainty remains unchanged (Bora, Erkan, Kayahan & Veznedaroglu, 2007); thus, it can be considered as a hallmark of delusion.

A limitation of this study was its cross-sectional nature, preventing us to ensure the role of dysfunctional attitudes and cognitive insight in the development of those disorders. It is suggested that future studies investigate these variables longitudinally. We only considered anxiety disorder and delusion, various anxiety disorders and all categories of delusions were studied without distinction; however, examining them separately is recommended in future studies.

5. Conclusion

The current study findings suggested that dysfunctional attitudes can be considered as a common aspect and cognitive insight as a differentiating aspect of anxiety and psychosis.

Ethical Considerations

Compliance with ethical guidelines

All ethical principles were considered in this article. The study participants were informed about the purpose of the research and its implementation stages; they were also assured about the confidentiality of their information; Moreover, they were allowed to leave the study whenever they wished, and if desired, the results of the research would be available to them.

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Authors' contributions

All authors equally contributed in preparing all parts of the current research.

Conflict of interest

The authors declared no conflict of interest.

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