Personality traits of Lebanese patients with schizophrenia: Comparison by gender and severity of psychosis

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Abstract

Objectives Schizophrenia is known as a **mental** disease affecting how an individual will reply to a certain scenario in a way that differs from a person to another. A specific personality trait can influence the expressions of psychotic symptoms and affect illness courses. Our aim during this study was to spot nonadaptive personality traits in Lebanese Schizophrenic patients and compare them to healthy subjects.

Methods We took a pair of teams one schizophrenic individuals (n=250) and the other healthy individuals (n=250). For the data assortment the tools used were: personality inventory for the DSM-5 (PID-5-BF) brief type, to assess the maladaptive personality traits; Positive and Negative Syndrome Scale (PANSS), to determine the severity of psychotic symptoms in schizophrenic individuals.

Results The results were a considerably higher mean in detachment, antagonism and psychoticism personality traits in schizophrenic subjects compared to healthy group. When comparing personality based on the gender a considerably higher mean of negative affect and psychoticism was found in **women** compared to men, as for the antagonism and detachment it had been considerably higher in men.

Conclusion In conclusion, we can say that schizophrenic subjects have a particular personality trait totally different from the overall healthy subjects.

Introduction

There has been a growing evidence of research assessing the relationship between personality traits and schizophrenia ^{1,2}. Schizophrenia is a complex psychiatric disorder that is classified by positive and negative symptoms, cognitive impairment and a deterioration of social functioning ³. Personality is considered an important variable in schizophrenia due to its undeniable influence in patients social and cognitive functions while also being a marker for both onset and prognosis ⁴. Most studies have assessed personality disorders using the Five Factor Model ^{5,6} showing consistent findings between neuroticism and higher risk of developing schizophrenia. However, few studies have looked at the Personality Inventory for DSM-5 (PID-5-BF) and its relationship with schizophrenia ⁷ and no studies from the Middle East exists, as far as the scope of our literature review went. While it has been argued that the usage of both the FFM and PID have helped to increase the understandings and dimensions of personality pathology, there are deviating opinions on general trait measures when studying personality pathology ⁸. Therefore, the more specific and less general trait questions associated with the PID-5 makes it more practical when looking at maladaptive personality traits.

The PID-5, like the FFM, consists of 5 factors: (A) Negative Affectivity, (B) Detachment, (C) Antagonism, (D) Disinhibition and (E) Psychoticism ⁹. Negative Affectivity (NA) is similar to neuroticism in the FFM in the sense it assesses the level to which one experiences frequent, strong and high levels of negative emotions as well as negative behavioral consequences of them. Detachment (DET) is avoiding social

and interpersonal relationships as well as a diminished level of seeking pleasurable activities. Antagonism (ANT) refers to behaviors that puts one in an oppositional position with others such as lack of empathy, callousness and an over exaggerated sense of self-importance. Disinhibition (DIS) relates to impulsivity due to having a strong need to attain immediate gratification regardless of the consequences associated with it. Psychoticism (PSY) are odd, eccentric and peculiar behaviors and beliefs¹⁰. Amongst the few studies done, psychoticism was the prominent factor distinguishing patients diagnosed with schizophrenia and health control participants^{11,12}.

Understanding the relationship of maladaptive personality traits between patients with schizophrenia and healthy controls while taking demographic factors into consideration in a large sample size will be beneficial for several reasons: first, personality traits serve as a vulnerability factor for a multitude of psychiatric disorders therefore identifying personality markers can help distinguish 'at risk' individuals. Second, previous studies have shown psychoticism is the distinguishable factor between people with schizophrenia and healthy controls but research is limited and lacking in sample size. Third, the remaining factors NA, DET, ANT and DIS have yet to be fully explored between these two groups. Fourth, it is well known that different cultures exhibit different personality traits and this study is the first non-western study of its kind to test this hypothesis. Finally, the study also takes into account gender differences in both groups in order to explore whether the degree of personality differences in both groups are significant.

Methods

Study Design and Population

A cross-sectional study was conducted at the Psychiatry Hospital of the Cross (PHC) over a period of 4 months. Participants were Lebanese inpatients of the Psychiatry Hospital of the Cross, who met the diagnosis of schizophrenia according to the DSM-V criteria. Patients' age ranged from 30 to 80 years old. Those who met the criteria for having another type of illness, and patients with intellectual disabilities who were not able to answer our questions were excluded from the study. A total of 250 patients diagnosed with schizophrenia were compared to 250 healthy controls randomly chosen from the general population.

Sample Size Calculation

Using the Gpower 3.1.9.2 software for the calculation of the minimal sample size needed for our study, with a power of 95% and an error of 5%, and considering the mean psychoticism trait of 34.68 ± 18.90 in psychotic disorder sample and 27.65 ± 17.94 in non-psychotic disorder according to a study done by Bastiaens et al. 2017¹³, the minimal sample size calculated needed was 360 (180 participants in each group).

Data collection

Chronic patients admitted to the Psychiatry Hospital of the Cross were diagnosed as having schizophrenic disorder by one clinical specialist based on the DSM-5 criteria. Patients and healthy control were interviewed. A face-to-face interview was conducted after obtaining the signed consent form. The questionnaire was in Arabic, the native language in Lebanon. Average time to complete the questionnaire was around 20–30 minutes.

Questionnaire

Medical files

Medical files were assessed for the following information: (i) demographics, including age, sex, geographic region, marital status, occupation, education level, total monthly salary per household and having insurance or not. (ii) clinical information of the participants, including diagnosis, duration of schizophrenia, family history of psychiatric disorders (iii) social habits of the participants, including smoking status, alcohol intake, etc.

The Personality Inventory for DSM–5 (PID–5-BF)

The Personality Inventory for DSM–5 (PID–5-BF)-Adult (brief form) contain 25 items that assess the five personality traits domains including: Negative affect- involve the experience of negative emotions (item 8,9,10,11,15); Detachment- a state of depression, mistrust (item 4,13,14,16,18); Antagonism- meaning social withdrawal, grandiosity (item 17,19,20,22,25); Disinhibition- being impulsive, irresponsible, careless (item 1,2,3,5,6) and Psychoticism- having odd behaviors and perceptual problems (items 7,12,21,23,24). This tool is used for adults age 18 and older. The answers vary from very wrong (scale = 0) to very right (scale = 3) ⁹

Positive and Negative Syndrome Scale (PANSS)

The Positive and Negative Syndrome Scale (PANSS) validated in Arabic ¹⁴ is a medical scale used to measure the severity of symptoms associated with schizophrenia. It addresses both positive symptoms meaning an excess or distortion of normal functions (delusions, hallucinations, grandiosity, suspiciousness, etc.) from P1-P7 and negative symptoms which are categorized by loss of normal functions (blunting of affect, poverty of speech and thought, apathy, anhedonia, reduced social drive, loss of motivation, lack of social interest, and inattention to social or cognitive input) from N1-N7. Finally, it contains 16 items pertaining to general psychopathology (Anxiety, guilt, disorientation, poor attention span, etc.) rated from G1-G6. The severity of symptoms are rated on a 7 point Likert-scale (0 = absent, 6 = extreme).

Data analysis

SPSS software version 25 was used to perform data analysis. Cronbach alpha was recorded to ensure the reliability of the scales. A descriptive analysis was carried out using the numbers and percentages for categorical variables and mean and standard deviation for continuous measurements. The Student's independent t-test was used to compare continuous variables in two groups, whereas the ANOVA test was used when comparison involved three or more groups. Pearson correlation was used for linear correlation between continuous variables. For categorical variables, the chi-square and Fisher exact tests were used. A P-value less than 0.05 was considered significant.

Results

Sample characteristics

Table 1 shows the demographic characteristics of patients with schizophrenia and healthy controls stratified by gender. Within the Schizophrenia group, males were significantly more likely to be single (86.6%), unemployed (73.1%) low numbers of university education level (14.2%) and having a family history of anxiety (98.5%) compared to their female counterparts. When comparing both groups, both males and females in the schizophrenia group were more likely to be single, unemployed and having lower chances of attending higher education compared to healthy controls.

PANSS score (only examined within the schizophrenia group) showed a significant difference only within the Negative subscale (13.90 vs. 11.57, $p = 0.031$).

Personality trait differences

Those within the schizophrenia group scored significantly higher mean rates in detachment (5.09), antagonism (3.28) and psychoticism (4.19). Negative affect was borderline significant (0.017) while disinhibition had no significant differences between the two groups (0.104) (Table 2).

Comparison differences by gender

Within the schizophrenia group, females scored higher in mean average on all personality traits besides antagonism when compared to their male counterparts. There was a significant difference in negative affect (9.00) and psychoticism (4.83) in female scores (Table 3).

A significantly higher mean of negative affect (9.00) and psychoticism (4.83) personality traits scores were found in female patients with schizophrenia as compared to male ones. Within the healthy control group, males scored significantly higher in detachment (1.97), antagonism (3.61) and psychoticism (1.98) when compared to females.

In addition, a higher total PANSS score, higher positive PANSS, higher negative PANSS and higher general PANSS were significantly associated with higher negative affect personality trait. Moreover, a higher total PANSS score, higher positive PANSS, higher negative PANSS and higher general PANSS were significantly associated with lower antagonism and psychoticism personality trait. A higher total PANSS score, higher negative PANSS and higher general PANSS were significantly associated with lower detachment personality trait. (Table 4).

Discussion

In this study, we aimed to compare personality traits between patients with schizophrenia and a control group with no history of mental health disorders using the PID-5-BF. To our knowledge, this was the first study of its kind in the Middle East. Looking at sociodemographic outcomes, people diagnosed with schizophrenia fare poorly compared with those who do not meet the diagnosis, especially at being unemployed¹⁵ and being single in terms of marital status¹⁶. The consequences of having a poor level of education ultimately affects work status which in turn leads to poorer monthly income. The majority of patients within the schizophrenia group reported yes to having family history with some sort of mental illness. Specifically, a history of depression, anxiety, drug abuse and suicide were also reported. Patients within the schizophrenia had anxiety being the only significant outcome between both genders. However, it is imperative to note that patients did report overwhelmingly to these factors which is consistent with the literature¹⁷.

Within personality traits comparing both groups, psychoticism and detachment were strongly significant while antagonism and negative affect were borderline significant. As mentioned, the literature examining both schizophrenia groups and healthy controls using the PID is lacking. However, the results show a consistence with the literature on personality traits¹⁸.

Assessing gender differences, females in the schizophrenia group scored higher on average when compared to their male counterparts on all personality traits besides antagonism. According to Van den Broeck, Bastiaansen¹⁹, gender differences in a clinical sample using the PID require further studies. Although antagonism is related to aggressive behavior which is more prevalent in males with schizophrenia²⁰, why females within the schizophrenia group in this study scored higher in detachment, psychoticism, disinhibition and negative affect while females in healthy controls did not show a significant difference in personality traits compared with healthy males require further analysis.

Results showed that higher total PANSS score, higher negative PANSS and higher general PANSS were significantly associated with lower detachment personality trait, in line with another study¹³. According to this study, the lower instead of higher detachment scores in patients with psychotic disorder are particularly interesting because in comparison with nonclinical groups, psychotic disorders are regularly associated with higher instead of lower levels of Introversion (given that schizoid features frequently accompany psychotic disorders). Concerning psychoticism, contradictory data were found in the literature. Previous studies revealed that patients with schizophrenia showed higher levels of

psychoticism²¹. In fact, individuals with higher level of psychoticism harbor a number of pathological beliefs related to schizoid and paranoid personality disorders, which are historically thought to be associated with psychotic or pre-psychotic features²². Therefore, further research is recommended to discuss in depth the meaning of our results. As for negative affect, results of our study revealed that higher total PANSS score, higher positive PANSS, higher negative PANSS and higher general PANSS were significantly associated with higher negative affect personality trait. In fact, individuals with heightened negative affectivity are also likely to harbor a maladaptive constellation of beliefs about themselves²². For instance, given their vulnerable sense of self-worth they may believe they need to steer clear, cling to, or mistrust (paranoid) for protection from emotional harm. They may also believe they can quell negative emotions through attention-seeking behavior designed to illicit social support and favor, or through imposing order on their environment. Finally, results of our study concerning antagonism trait are contradictory with other studies suggesting that antagonistic individuals are likely to maintain a relatively inflated view of themselves as special and superior, an attitude which presumably facilitates antagonistic behavior towards others and which may promote attention-seeking behavior²². They may become particularly antagonistic when others violate their rigid and dogmatic expectations for how things ought to be. Antagonism may be further maintained by beliefs about the importance of self-reliance and concerns about being controlled by others (autonomy), which may even lead to overtly mistrustful or dismissive behavior. Therefore, future research are needed in order to consider and analyze in depth our results.

Limitations

While this topic has been understudied, the final results should be taken as preliminary and not enough to generalize. Further research using different clinical comparison groups should be examined. Differences in scores between genders in both the schizophrenia group and healthy controls require a larger sample size in order to determine if females tend to score higher in all personality traits bar antagonism when diagnosed with schizophrenia.

Conclusions

While this study was the first of its kind to examine differences in personality traits between healthy controls and those diagnosed with schizophrenia, differences in gender and finally a Lebanese sample, the results add further evidence to the growing body of literature that the five personality traits provide a good model in capturing important personality factors within the personality spectrum. Finally, as current research looking at personality differences are still in conflict as to which personality test best answers the research question, the PID is trustworthy in its capacity in detecting true differences between those diagnosed with schizophrenia and healthy controls¹³.

Declarations

Ethics Approval and Consent to Participate

The Psychiatric Hospital of the Cross Ethics and Research Committee approved this study protocol in compliance with the Hospital's Regulatory Research Protocol (HPC-010-2019). A written informed consent was obtained from each participant.

Consent for publication

Not applicable.

Availability of data and materials

All data generated or analyzed during this study are not publicly available to maintain the privacy of the individuals' identities. The dataset supporting the conclusions is available upon request to the corresponding author.

Competing interests

The authors have nothing to disclose.

Funding

None.

Author contributions

IN and GAS were responsible for the data collection and entry. SH and SO designed the study; JED drafted the manuscript; SH and CH carried out the analysis and interpreted the results; IN assisted in drafting and reviewing the manuscript; all authors reviewed the final manuscript and gave their consent; SH and SO were the project supervisors.

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Tables

Tables

Table 1: Sociodemographic and clinical characteristics of patients with schizophrenia and healthy control stratified by gender						
	Schizophrenia patients		p-value	Healthy controls		p-value
	Schizophrenia (n=250)			Healthy controls (n=250)		
	Male	Female		Male	Female	
Education level						
No Education	10 (7.5%)	19 (16.4%)	0.006	7 (5.2%)	8 (6.9%)	0.889
Less than 8 years	60 (44.8%)	50 (43.1%)		43 (32.1%)	35 (30.2%)	
8 years	45 (33.6%)	43 (37.1%)		54 (40.3%)	44 (37.9%)	
College	19 (14.2%)	4 (3.4%)		30 (22.4%)	29 (25.0%)	
Work status						
Unemployed	98 (73.1%)	56 (48.3%)	<0.001	35 (26.1%)	45 (38.8%)	0.032
Employed	36 (26.9%)	60 (51.7%)		99 (73.9%)	71 (61.2%)	
Monthly income						
Less than 1000\$	25 (67.6%)	41 (69.5%)	0.447	25 (25.3%)	4 (5.6%)	0.003
1000-2000\$	12 (32.4%)	18 (30.5%)		62 (62.6%)	53 (74.6%)	
More then 2000\$	-	-		12 (12.1%)	14 (19.7%)	
Marital status						
Single	116 (86.6%)	81 (69.8%)	<0.001	44 (32.8%)	21 (18.1%)	0.002
Married	7 (5.2%)	21 (18.1%)		69 (51.5%)	77 (66.4%)	
Widowed	0	7 (6.0%)		10 (7.5%)	16 (13.8%)	
Divorced	11 (8.2%)	7 (6.0%)		11 (8.2%)	2 (1.7%)	
Family history of mental illness						
Yes	112 (83.6%)	95 (81.9%)	0.725			
No	22 (16.4%)	21 (18.1%)				
Family history of depression						
Yes	124 (92.5%)	101 (87.1%)	0.151			
No	10 (7.5%)	15 (12.9%)				
Family history of anxiety						
Yes	132 (98.5%)	96 (82.8%)	<0.001			
No	2 (1.5%)	20 (17.2%)				
Family history of suicide						
Yes	126 (94.0%)	106 (91.4%)	0.419			
No	8 (6.0%)	10 (8.6%)				
Family history of drug abuse						
Yes	127 (94.8%)	108 (93.1%)	0.579			
No	7 (5.2%)	8 (6.9%)				
	Mean ± SD	Mean ± SD	p-value	Mean ± SD	Mean ± SD	p-value
Age	52.34±11.73	50.49±11.19	0.207	51.43	51.35±10.86	0.961

				± 12.13
Duration of illness (in years)	31.85 $\pm$ 11.63	30.68 $\pm$ 10.75	0.410	
Total PANSS score	50.53 $\pm$ 33.87	58.67 $\pm$ 38.40	0.076	
Positive subscale	12.13 $\pm$ 8.86	13.97 $\pm$ 10.54	0.140	
Negative subscale	11.57 $\pm$ 8.24	13.90 $\pm$ 8.61	0.031	
General subscale	26.82 $\pm$ 18.86	30.79 $\pm$ 21.19	0.119	

Abbreviation: PANSS, Positive and Negative Syndrome Scale
Numbers in bold refer to significant p-values

Table 2: Comparison of personality traits between patients with schizophrenia and healthy controls

Personality trait	Schizophrenia patients	Healthy controls	p-value
Negative affect	7.94 $\pm$ 2.84	8.58 $\pm$ 3.07	0.017
Detachment	5.09 $\pm$ 3.13	1.34 $\pm$ 1.54	<0.001
Antagonism	3.28 $\pm$ 2.62	2.76 $\pm$ 1.39	0.006
Disinhibition	4.69 $\pm$ 3.71	5.16 $\pm$ 2.68	0.104
Psychoticism	4.19 $\pm$ 2.96	1.81 $\pm$ 0.97	<0.001

Numbers in bold refer to significant p-values

Table 3: Comparison of personality traits between patients with schizophrenia and healthy controls by gender.

Personality trait	Schizophrenia patients		p-value	Healthy controls		p-value
	Male	Female		Male	Female	
	Mean $\pm$ SD	Mean $\pm$ SD		Mean $\pm$ SD	Mean $\pm$ SD	
Negative affect	7.02 $\pm$ 2.71	9.00 $\pm$ 2.62	<0.001	8.66 $\pm$ 2.47	8.47 $\pm$ 3.65	0.636
Detachment	4.82 $\pm$ 3.16	5.39 $\pm$ 3.07	0.147	1.97 $\pm$ 0.60	1.83 $\pm$ 0.49	<0.001
Antagonism	3.47 $\pm$ 2.91	3.05 $\pm$ 2.23	0.201	3.61 $\pm$ 1.37	1.77 $\pm$ 0.41	<0.001
Disinhibition	4.61 $\pm$ 3.86	4.76 $\pm$ 3.53	0.754	5.14 $\pm$ 2.87	5.18 $\pm$ 2.44	0.907
Psychoticism	3.63 $\pm$ 2.82	4.83 $\pm$ 2.98	0.001	1.98 $\pm$ 0.81	1.60 $\pm$ 1.08	0.002

ciation between PANSS scores and personality traits in schizophrenia patients

Personality traits									
Negative affect	p-value	Detachment	p-value	Antagonism	p-value	Disinhibition	p-value	Psychoticism	p-value
Mean ± SD		Mean ± SD		Mean ± SD		Mean ± SD		Mean ± SD	
7.59 ± 3.07	0.055	5.54 ± 3.28	0.007	3.74 ± 2.75	0.001	4.90 ± 3.97	0.485	5.22 ± 2.99	<0.001
8.03 ± 1.95		5.32 ± 3.69		3.45 ± 2.82		4.93 ± 3.94		3.22 ± 2.75	
8.41 ± 2.50		4.09 ± 2.22		2.09 ± 1.93		4.00 ± 2.88		2.21 ± 1.80	
9.03 ± 2.54		3.82 ± 2.03		2.28 ± 1.62		4.25 ± 3.02		2.64 ± 1.52	
Correlation coefficient	p-value	Correlation coefficient	p-value	Correlation coefficient	p-value	Correlation coefficient	p-value	Correlation coefficient	p-value
0.218	0.001	-0.160	0.011	-0.204	0.001	-0.017	0.789	-0.340	<0.001
0.194	0.002	-0.093	0.142	-0.148	0.019	0.039	0.541	-0.266	<0.001
0.209	0.001	-0.125	0.048	-0.185	0.003	-0.033	0.608	-0.362	<0.001
0.211	0.001	-0.192	0.002	-0.219	<0.001	-0.036	0.574	-0.348	<0.001

lysis for PANSS categories taking the personality traits as the dependent variables
 affect: mild vs. moderate (7.59 vs. 8.03, p=1.000); mild vs. marked (7.59 vs. 8.41, p=0.596); mild vs. severe (7.59 vs. 9.03, p=0.001); moderate vs. marked (8.03 vs. 8.41, p=1.000); moderate vs. severe (8.03 vs. 9.03, p=1.000); marked vs. severe (8.41 vs. 9.03, p=0.001).
 .
 ent: mild vs. moderate (5.54 vs. 5.32, p=1.000); mild vs. marked (5.54 vs. 4.09, p=0.048); mild vs. severe (5.54 vs. 3.82, p=0.041); moderate vs. marked (5.32 vs. 4.09, p=0.571); moderate vs. severe (5.32 vs. 3.82, p=0.372); marked vs. severe (4.09 vs. 3.82, p=1.000).
 sm: mild vs. moderate (3.74 vs. 3.45, p=1.000); mild vs. marked (3.74 vs. 2.09, p=0.002); mild vs. severe (3.74 vs. 2.28, p=0.034); moderate vs. marked (3.45 vs. 2.09, p=0.158); moderate vs. severe (3.45 vs. 2.28, p=0.482); marked vs. severe (2.09 vs. 2.28, p=1.000).
 tion: mild vs. moderate (4.90 vs. 4.93, p=1.000); mild vs. marked (4.90 vs. 4.00, p=1.000); mild vs. severe (4.90 vs. 4.25, p=1.000); moderate vs. marked (4.93 vs. 4.00, p=1.000); moderate vs. severe (4.93 vs. 4.25, p=1.000); marked vs. severe (4.00 vs. 4.25, p=1.000).
 ism: mild vs. moderate (5.22 vs. 3.22, p=0.001); mild vs. marked (5.22 vs. 2.21, p<0.001); mild vs. severe (5.22 vs. 2.64, p<0.001); moderate vs. marked (3.22 vs. 2.21, p=0.692); moderate vs. severe (3.22 vs. 2.64, p=1.000); marked vs. severe (2.21 vs. 2.64, p=1.000).

SS, Positive and Negative Syndrome Scale

refer to significant p-values