

Correlation of Positive and Negative Symptoms (PANSS) and Flanagan Quality of Life Assessment Scale (QOLS) in Patients With Schizophrenia According to Gender

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Background: Schizophrenia is a complex and debilitating psychiatric disorder characterized by a constellation of clinical signs and symptoms that are categorized into distinct positive, negative, disorganization and cognitive symptom domains. It remains one of the most intriguing psychiatric research topics with a worldwide prevalence of 1% leading to lifelong disability in more than 50% of the sufferers. As a psychopathological entity, schizophrenia reflects the specific existential context of an individual, while maintaining a consistent core in regard to all stable and diagnostically relevant characteristics. In terms of content, schizophrenic manifestations display an abundance of individual differences, while the pattern related to symptoms and the course of the disease remains the same. No other disease can so radically damage the personality of the patient and potentially destroy the very foundations of what we consider to be the essential part of every human being. In medical terms, it is primarily a neurocognitive or neurobiological disorder. The outcome of the disease is better in female patients compared to male patients who have a higher risk of rehospitalization and twice as long duration of hospital treatment. An earlier onset of the disease in male patients, negative symptoms and a more severe clinical picture are noted, with a less promising therapeutic response to neuroleptics. The onset of negative symptoms is more variable. **Objective:** The aim of the study was to determine the correlation of positive and negative symptoms (PANSS scores) and quality of life (The Flanagan scale) in patients with schizophrenia according to gender. **Methods:** The sample included 40 subjects with schizophrenia (21 males; 19 females). The study was conducted at the Department of Psychiatry Clinical Center University of Sarajevo. **Results:** All male subjects have a PANSS negative symptoms score of 17 or higher, while all female subjects have a PANSS negative symptoms score of less than 17. While the difference in the variances is not statistically significant, the results show that the difference in the average values of the PANSS symptom score between male and female subjects is statistically significant for both positive and negative symptoms ($p=0.026$). The average score on the quality of life assessment scale for the observed group was 48.5 with a standard deviation of 5.6. The distribution of results on the Flanagan quality of life assessment scale (QOLS) deviates somewhat from the imaginary distribution of the normal distribution only in the area of higher and lower values, without the presence of distinct extremes. Negative symptoms were associated with different QOLS domains, but both positive symptom clusters showed no substantial association with QOLS. **Conclusion:** This aspect of the illness may account for the low level of emotional expression and neuromotor dysfunction in infants who subsequently have schizophrenia. In other patients, the negative symptoms first occur after the onset of psychosis. As a psychopathological entity, schizophrenia reflects the specific existential context of an individual, while maintaining a consistent core in regard to all stable and diagnostically relevant characteristics.

Keywords: schizophrenia, PANSS, QOLS, gender differences.

1. BACKGROUND

Schizophrenia is a clinical syndrome with diverse manifestations. Although it is possible that a single pathophysiologic process accounts for this diversity, the syndrome probably comprises several disease processes, each with its own manifestations. It re-

mains one of the most intriguing psychiatric research topics with a worldwide prevalence of 1% leading to lifelong disability in more than 50% of the sufferers. The onset of psychotic symptoms usually occurs between the ages of 17 and 30 years in men and between the ages of 20 and 40 in women. As a psychopatholog-

ical entity, schizophrenia reflects the specific existential context of an individual, while maintaining a consistent core in regard to all stable and diagnostically relevant characteristics. In terms of content, schizophrenic manifestations display an abundance of individual differences, while the pattern related to symptoms and the course of the disease remains the same. In medical terms, it is primarily a neurocognitive or neurobiological disorder. This chronic and debilitating psychiatric disorder, is characterized by a constellation of clinical signs and symptoms that are categorized into distinct positive, negative, disorganization and cognitive symptom domains. Although positive symptoms (eg, delusions, hallucinations) must be present for a diagnosis of schizophrenia to be made, negative symptoms, typified by the absence of normal function and loss of behaviors and motivation, are highly detrimental to patient functioning and quality of life (1-5). While antipsychotic treatment is effective against positive schizophrenia symptoms, effective treatment for negative symptoms is lacking and most improvement occurs secondarily to improvement in positive symptoms.

Research suggests that negative symptoms are heterogeneous, with potentially different pathophysiological mechanisms and psychopathological outcomes (5).

2. OBJECTIVE

The aim of the study was to determine the correlation of positive and negative symptoms (PANSS scores) and Flanagan quality of life assessment scale (QOLS) in patients with schizophrenia according to gender.

3. PATIENTS AND METHODS

Patients and study design

This prospective, comparative study had been conducted at the Department of Psychiatry Clinical Center University of Sarajevo. The study included 40 patients with schizophrenia (21 males and 19 females), 18 to 67 years old. The Ethics Committee of the University Clinical Center Sarajevo gave an ethical consent to perform the study. All subjects signed a written informed consent for the use of the results obtained for publication before the enrollment. Patients included in the study were on the hospital treatment and under antipsychotic drugs at the Department of Psychiatry, and had been diagnosed with schizophrenia according to the ICD-10 criteria (6). They were included into the research on the basis of consecutive admissions, taking into account that all of them were with a long psychiatric history (at least 5 years of hospital treatment). The criteria for the exclusion referred to the appearance of psychotic phenomenology within neurological disease, organic psychosyndrome, somatic disease, neurological disorder (head trauma, brain insult, epilepsy), information on drug or al-

cohol abuse, or those who did not sign informed consents for voluntary participation. For the group of patients with schizophrenia, the average age was 41.50 (SD±10.44; range 22–67) years.

PANSS

The Positive and Negative Syndrome Scale (PANSS) is an established psychiatric rating system that is an operationalized, drug-sensitive instrument that offers balanced representation of positive and negative symptoms and estimates their relationship to one another and to global (or general) psychopathology. It is the most widely used measure of symptom severity in schizophrenia and this 30-item scale is typically administered by trained clinicians who evaluate patients' current severity level on each symptom (item) by endorsing 1 of 7 options (weights) numbered 1 through 7. The PANSS has demonstrated high internal reliability and good construct validity (7-10).

QOLS

The Quality of Life Scale (QOLS), created originally by American psychologist John Flanagan in the 1970's, has been adapted for use in chronic illness groups. Importance ratings are used to weight the satisfaction responses, such that scores reflect the respondents satisfaction with the aspects of life they value. Items that are rated as more important have a greater impact on scores than those of lesser importance. Quality of life scale (QOLS) measures have become a vital and often required part of health outcome appraisal. For populations with chronic disease, measurement of QOLS provides a meaningful way to determine the impact of health care when cure is not possible. As such they are useful as treatment outcome measures but may not cover the wide-range of domains that are important to an individual's life. The Flanagan Quality of Life Scale (QOLS) takes this issue into account (11, 12, 13).

Statistical analysis

The research task was to define the differences between patients with schizophrenia according to PANSS and QOLS scores. For the purposes of correlation and associative analysis multivariate analysis of variance was applied using T-test of paired samples and Levene's test for equality of variances. Kolmogorov-Smirnov test was designed to measure subjective quality of life in terms of satisfaction within different life domains. Differences in which the p value was less than 0.05 ($p < 0.05$) were considered statistically significant.

4. RESULTS

Demographic data of subjects according to gender

The study was conducted on a group of 40 subjects with schizophrenia. The sample consisted of 21 (52.5%) male and 19 (47.5%) female (Table 1).

Comparative analysis of positive and negative symptoms (PANSS) and Flanagan quality of life scale (QOLS) in patients according to gender.

	Female	Male	Total
Group	19	21	40
	47.5 %	52.5%	100.0 %

Table 1. Distribution according to gender

Gender	N	Arithmetic mean	Standard deviation	Standard error of the arithmetic mean
PANSS score-positive symptoms	Female	10	8.70	1.337
	Male	11	10.09	1.300
PANSS score-negative symptoms	Female	9	12.67	2.872
	Male	10	19.40	1.1776

Table 2. Statistical descriptive values of positive and negative symptom score parameters (PANSS) according to gender

	Levene's test of equality of variances		T test of equality of arithmetic means		Average difference	Standard difference error
	F	p	T	df		
PANSS score-positive symptoms	.060	.809	-2.415	19	.026	-1.391
			-2.412	18.691	.026	-1.391
PANSS score-negative symptoms	2.621	.124	-6.219	17	.000	-6.733
			-6.066	13.078	.000	-6.733

Table 3. Statistical difference of positive and negative symptoms (PANSS score) according to gender

The correlation of positive and negative symptoms in patients according to gender was examined in 40 patients with schizophrenia using psychiatric rating system (PANSS). The T test for independent samples tested whether there is a statistically significant difference in the presence of positive and negative symptoms (PANSS) in male and female subjects of the observed group. In the group of male and female patients, there is no statistically significant difference in the variances of the PANSS symptom score. While the difference in the variances is not statistically significant, the results show that the difference in the variances is not statistically significant, the results show that the difference in the average values of the PANSS symptom score between male and female sub-

Flanagan quality of life scale (QOLS)	Statistic	Standard error
Mean	48,50	.886
95% Confidence Interval for Mean	Lower Bound	46.71
	Upper Bound	50.29
5% Trimmed Mean	48.22	
Median	47.50	
Variance	31.385	
Standard deviation	5.602	
Minimum	40	
Maximum	63	
Range	23	
Interquartile Range	6	
Skewness	.964	\.374
Kurtosis	.321	\.733
Kolmogorov-Smirnov test	.169	
df	40	
p	.005	

Table 4. Statistical descriptive values of the Flanagan scale of life (QOLS) in the observed group

jects is statistically significant for both positive and negative symptoms ($p=0.026$) (Tables 2 and 3).

There was a significant mean scores difference between the two groups on scores of QOL- each domain which indicated that schizophrenias patients had significant poor quality of life. The results showed significant correlation ($p < .05$) between total scores on PANSS and on domain 1, 2, 3 Items. There was negative correlation between the total scores on PANSS and on domain Item 2. But the correlation was not significant ($p > .05$). Results showed with worsening of schizophrenia, there was deterioration in QOLS in physical health, psychological health, social relation-

ship as well as in overall quality of life. On negative subscale of PANSS the results were significant in all

Subjects	N	Arithmetic mean	Standard deviation	Standard difference error
Female	19	48.79	5.643	1.295
Male	21	48.24	5.691	1.242

Table 5. Flanagan quality of life scale (QOLS)

Flanagan quality of life scale (QOLS)	Levene's test of equality		T test of equality of arithmetic means			Average difference	Standard difference error
	F	p	T	df	p		
assumed equal variance	.029	.867	.307	38	.760	.551	1.795
not assumed equal variance			.307	37.665	.760	.551	1.794

Table 6. Testing the significance of the difference between male and female respondents in the average values on the Flanagan quality of life scale

Domains	Male (Mean ± SD)	Female (Mean ± SD)	P
Physical health	17.76 ± 6.2	18.76±5.9	< 0.05
Psychological Health	14.22± 5.4	19.85±6.5	< 0.05
Social Relationships	14.70± 11.8	17.55±2.9	< 0.05

Table 7. Comparison between Male and Female on scores on QOL domains

Domain	Negative r	P	Positive r	P
Physical Health	-.125	< .05	-.25	> .05
Psychological Health	-.36	< .05	-.15	> .05
Social Relationships	-.55	< .05	-.15	> .05

Table 8. Correlation Coefficient between scores of PANSS and QOL domains

domains which showed that with aggravation of negative symptoms the quality of life worsened. On positive subscale of PANSS, there was a negative correlation. The correlation was non-significant.

5. DISCUSSION

The Positive and Negative Syndrome Scale (10, 13) was developed in order to provide a well-defined instrument to specifically assess both positive and negative symptoms of schizophrenia as well as general psychopathology. Eighteen items of the Brief Psychiatric Rating Scale and twelve items of the Psychopathology Rating Schedule (14) were combined in one scale, and all items were given a complete definition as well as de tailed anchoring criteria for all rating points. Strong psychometric properties in terms of reliability, validity and sensitivity have been shown in a number of subsequent studies (15).

Patients were divided into groups with predominant symptomatology of positive and negative symptoms using a combination of positive and negative symptomatology rankings. Values of positive and negative symptom scores (PANSS) in male and female subjects

suffering from schizophrenia, observed that there is no statistically significant difference in the variances of the specified symptom scores. While the difference in variances is not statistically significant, the results show that the difference in the average values of the PANSS symptom score between male and female subjects is statistically significant for both positive and negative symptoms (p=0.026). The average PANSS score is higher in male subjects, both in positive and negative symptoms. While in the case of positive symptoms, male respondents have a 16% higher average score, in negative symptoms they have a 53% higher average score. The t test for independent samples tested whether there is a statistically significant difference in the presence of positive and negative symptoms (PANSS) in male and female subjects of the observed group.

In the group of male and female patients, there is no statistically significant difference in the variances of the PANSS symptom score. While the difference in the variances is not statistically significant, the results show that the difference in the average values of the PANSS symptom score between male and female subjects is statistically significant for both positive and negative symptoms. The above indicates that there are significant differences in the clinical manifestations of schizophrenic psychosis, with the dominance of negative symptomatology in the group of male patients. The influence of social factors and the way this influence is manifested in each gender is significant. Women, for example, are disproportionately the targets of domestic violence, while men are mostly homeless. Flanagan's test scale was used in the research to assess the quality of life of patients with schizophrenia in relation to gender differences. It was recorded that there is no statistically significant difference in variances. Also, there is no statistically significant difference between male and female respondents in the average values of the mentioned test scale. Differences in disease expression are evident. This study assessed the relationship of quality of life with the symptomatology of schizophrenia. In our study as subjects' total QOL was inversely correlated with the total PANSS score, the QLS score was significantly correlated with PANSS negative psychopathology. There was no significant relationship with positive symptoms. The influence of social factors and the way this influence is manifested in each gender is significant (16-19).

6. CONCLUSION

Schizophrenia is a devastating disorder that has a chronic course with the low level of emotional expres-

sion and neuromotor dysfunction in infants who subsequently have schizophrenia. In other patients, the negative symptoms first occur after the onset of psychosis. As a psychopathological entity, schizophrenia reflects the specific existential context of an individual, while maintaining a consistent core in regard to all stable and diagnostically relevant characteristics. It is time for researchers to become more aware of how schizophrenia is a disease, different for men than women, and for some discoveries to be guides for the future. Neurobiological and psychosocial differences require a critical approach in terms of different psychosocial interventions and pharmacological approaches in relation to gender. Better knowledge and documentation of gender differences in schizophrenia will allow a clearer understanding of the disease.

- **Authors contribution:** All authors were involved in all steps of preparation this article. Final proofreading was made by the first author.
- **Conflict of interest:** None to declare.
- **Financial support and sponsorship:** Nil.

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