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Functional neurological (conversion) symptoms mediate the effect of self-stigma in women seeking psychological help on their psychological well-being

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MAIN POINTS

- In functional neurological symptom disorder, self-stigma of seeking psychological help is higher and psychological well-being is lower than that in healthy controls.
- A significant relationship exists between self-stigma of seeking psychological help and psychological well-being.
- The level of functional neurological symptom disorder symptoms indirectly mediates the relationship between self-stigma and psychological well-being.

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ABSTRACT

Aim: This study aimed to examine the effect of self-stigma of seeking psychological help on psychological well-being in patients diagnosed with functional neurological symptom disorder (formerly conversion disorder) through conversion symptoms.

Materials and Methods: In this cross-sectional study, the Self-Stigma of Seeking Psychological Help Scale (SSPHS), Psychological Well-Being Scale (PWBS), and Somatoform Dissociation Questionnaire (SDQ-20) were administered to the FNSD and HC groups.

Results: The FNSD group consisting of 31 females (12 motor (M)-FNSD, 9 somatosensory (SS)-FNSD, and 10 mixed-FNSD) and the HC group consisting of 32 females were similar in terms of age ($p = 0.350$), education level ($p = 0.386$), marital status ($p = 0.579$), and working status ($p = 0.136$). Significant differences were observed between the FNSD and HC groups in terms of SSPHS ($p<0.001$), PWBS ($p<0.001$), and SDQ-20 ($p<0.001$). Significant differences were observed between the M-FNSD, SS-FNSD, and Mix-FNSD subgroups in terms of SDQ-20 ($p = 0.034$), SSPHS ($p = 0.028$), and PWBS ($p = 0.015$). The comparison that caused significant differences in terms of SDQ-20, SSPHS, and PWBS scores among the FNSD subgroups was between M-FNSD and Mix-FNSD. The mediating role of the FNSD symptom level (SDQ-20) in the relationship between SPH and PW was examined. The indirect effect of SPH on PW was determined as -0.436 (49.65%). The direct effect of SPH on PW was determined as -0.442 (50.35%). In the correlation analysis performed in the FNSD group, a significant relationship was found between SSPHS and SDQ-20 ($r=0.921$, $p<0.001$), between SSPHS and PWBS ($r=-0.879$, $p<0.001$), and between PWBS and SDQ-20 ($r=-0.882$, $p<0.001$).

Conclusion: This study demonstrates that SPH increases and PW decreases in FNSD and that FNSD symptoms mediate the relationship between SPH and PW.

Keywords: Functional neurological symptom disorder, Conversion disorder, Psychological well-being, Self-stigma, Mediation analysis

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INTRODUCTION

Neurological symptoms or other medical conditions that cannot be attributed to a neurological disease are referred to as functional neurologic symptom disorder (formerly conversion disorder/hysteria). These symptoms are real and cause significant distress or impairment of functioning. Signs and symptoms vary and may include specific patterns [1]. FNSD affects sensations and movements, and the symptoms cannot be intentionally produced or controlled. Motor (M) FNSD refers to symptoms such as abnormal movement, paralysis, loss of balance, and non-epileptic seizures, and somatosensory (SS) FNSD refers to symptoms such as inability to speak, numbness, blindness, deafness, and cognitive difficulties. Motor and somatosensory symptoms are present together in a group of patients and are defined as mixed (Mix) FNSD [1, 2].

FNSD, which manifests itself in the form of physical/somatic symptoms, leads individuals to reject or have difficulty accepting the psychogenic nature referred to after subsequent examinations. Individuals are likely to avoid psychiatric treatment

and remain deprived of treatment during this process. One of the most important reasons for this reaction is stigmatization and related situations [3]. Stigma, represented by three forms, including public stigma, self-stigma, and label avoidance, is eminently present in those with FNSD [4]. Results of an online survey showed that 85% of patients diagnosed with FNSD feel rejected and disrespected because of their symptoms [5]. In addition to the stigmatizing attitudes of the public [6], it is known that health care professionals are not happy to serve patients with FNSD and describe them as difficult patients [7]. Many clinicians believe that patients have voluntary control over their symptoms or that they are acting out [8].

Patients with FNSD who internalize negative stereotypes and stigmatize themselves may subsequently exhibit negative emotional reactions. Psychiatric symptoms are more common in those who stigmatize themselves, and this situation harms PW [9]. Although stigma-related situations in FNSD have been partially examined [5, 6], self-stigma and a more specific form of self-stigma, i.e., self-stigma of seeking psychological help (SPH), have not yet been examined. The relationship between SPH and PW in patients with FNSD and the effect of FNSD symptoms on this relationship are unknown.

The relationships between stigma and psychological well-being in various medical illnesses and with each other and with the illness have been investigated, and significant relationships have been found [10]. Furthermore, some concepts have been demonstrated to play a moderating and mediating role in the relationship between stigma and psychological well-being [11-13]. The presence and severity of psychiatric symptoms also negatively affect psychological help-seeking behavior [14]. Considering all this information, this study aimed to evaluate and compare the SPH and PW of patients with FNSD and to reveal the mediator effect of FNSD symptoms. Our hypothesis is that FNSD symptom severity indirectly mediates the relationship between SPH and PW.

MATERIALS AND METHODS

This cross-sectional study was conducted at Elazig Fethi Sekin City Hospital between February 6, 2025, and April 18, 2025. Ethics committee approval was obtained (Elazığ Fethi Sekin City Hospital Non-Interventional Research Ethics Committee, Decision number: 2024/4-12; Decision date: 21/11/2024).

Sample and setting

After fulfilling the requirements (examination, treatment, prescription, report, etc.) regarding the admissions of female patients who applied to the psychiatric outpatient clinic and were diagnosed with FNSD according to DSM-5-TR [15], those who met the inclusion and exclusion criteria of the study were invited to the study as the FNSD group in the order of admission.

The topic, content, design, and ethical implications of the study were explained to the invited female patients. Informed consent was obtained from all those who agreed to participate in the study.

The HC group consisted of healthy first-degree relatives of patients with various psychiatric diagnoses who were admitted to the same outpatient psychiatry clinic. Explanations regarding the study were also provided to the HC group, and informed consent was obtained from them. The FNSD group was divided into three subgroups according to symptom types [motor (M)-FNSD, somatosensory (SS)-FNSD, and mixed (mix)-FNSD].

Inclusion/Exclusion criteria

The type, frequency, and severity of symptoms in patients diagnosed with FNSD may vary, which explains the fluctuating clinical course of FNSD. Although it is known that CR is difficult to achieve despite treatment, psychotherapy is associated with longer remission periods by increasing cognitive awareness. Psychotherapy was accepted as an exclusion criterion due to its role in reducing the negative effects of stigmatization-related situations [16]. Current comorbid psychiatric disorders, alcohol use, illicit drug use, and benzodiazepine use are other exclusion criteria. Neuropsychiatric diseases and conditions such as epilepsy and MS were accepted as exclusion criteria. The lack of control of medical conditions such as diabetes mellitus, essential hypertension, and hypothyroidism has been associated with cognitive decline [17]. However, such controlled medical conditions were not considered exclusion criteria because their effect on cognitive functions was limited, and thus, no patients were excluded.

DÖ collected the data in a single outpatient psychiatry clinic. The number of patients diagnosed with FNSD who were admitted to this outpatient clinic between the specified dates was 48 (46 females and 2 males). Three patients with FNSD symptoms who were admitted to psychiatry for the first time did not accept participating in the study. The three patients who were included in the psychotherapy sessions were excluded from the study.

One patient with epilepsy and four patients using benzodiazepines were excluded from the study. One patient with uncontrolled diabetes mellitus and two patients with hypothyroidism who were using medication for this condition were excluded from the study. Three patients who were currently under FNSD treatment and met the inclusion and exclusion criteria did not participate in the study. As a result, no male patients accepted to participate in the study.

The HC group comprised first-degree female relatives of patients who were admitted to the psychiatry outpatient clinic for any reason. In this group, exclusion criteria were as follows: past and current FNSD diagnosis, current psychiatric disorder diagnosis, alcohol and substance use, uncontrolled general medical disease, and neurological diseases with cognitive impairment.

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Measurements

Sociodemographic and Clinical data

This form included questions regarding age, education level, marital status, and working status. In addition, the characteristics related to the FNSD diagnosis were queried.

Self-Stigma of Seeking Psychological Help Scale (SSPHS) score

Vogel et al. [18, 19] developed the SSPHS. Acun-Kapkıran and Kapkıran [20] conducted the Turkish validity and reliability study of the scale. Some items of the scale are reverse-scored (items 2, 4, 5, and 7), and a high score indicates high self-stigma in seeking psychological help.

Psychological Well-Being Scale (PWBS) score

Diener et al. [21] developed the PWBS. Telef [22] conducted the The Turkish validity and reliability study of the scale. According to this scale, a high score indicates high psychological well-being.

Somatoform dissociation questionnaire (SDQ-20)

Nijenhuis et al. [23] developed the SDQ-20 and Turkish validity and reliability study of the scale was conducted by Şar et al. [24]. A high SDQ-20 score indicates high somatoform symptom severity.

Statistical analysis

IBM SPSS Statistics for Windows, Version 26.0 (Armonk, NY: IBM Corp.) was used for the statistical analysis. Continuous variables and descriptive statistics are presented as mean ± standard deviation, whereas categorical variables are presented as frequency and percentage. Categorical data were analyzed using the chi-square test (p-value adjusted using the Bonferroni method). If the expected frequency of one or more cells was less than five and this rate was above 25%, the Fisher's exact test was used instead of the chi-square test. Kolmogorov-Smirnov test determined the compliance with normal distribution. In comparing two groups, Mann–Whitney U test was used for variables that did not show normal distribution and the independent samples t-test for variables that showed normal distribution. In comparing numerical data across FNSD subgroups, Levene's statistics were determined using the test of homogeneity of variances. One-way ANOVA was used because the Levene's statistic was >0.05 for all variables. The post-hoc Bonferroni test was used to reveal differences between the means of the FNSD subgroups. The Pearson correlation analysis was used. Cohen's d was calculated for continuous variables and Cramer's V/Phi for categorical variables.

Linear regression analysis was used in the mediation analysis of the FNSD group. The assumptions required for linear regression analysis were checked (linearity, homoscedasticity, normality, and no multicollinearity). The significant effect of SSPHS on PWBS was first investigated using linear regression analysis to determine the appropriateness of the mediation analysis (unstandardized B=-0.987, standard error=0.099, standardized coefficients β=-0.879, t=-9.942, p<0.001, 95% Confidence Interval for B=-1.190 (lower bound), -0.784 (upper bound)). The effect of SSPHS on FNSD severity (partial mediator variable) was then examined using linear regression analysis. Subsequently, the combined effects of SSPHS and FNSD severity on PWBS were examined. The sum of the direct (c) and indirect (axb) effects of SSPHS on PWBS was expressed as the total effect (total effect = (axb) + c, Figure 1).

A p value of 0.05 was considered statistically significant.

When calculating the sample size, since there was no previous study with similar characteristics, the data obtained from the pilot administration conducted on ten participants (five FNSD and five HC) were used, and it was seen that there should be at least 20 subjects in each group (SSPHS score of FNSD=20.35±5.03; SSPHS score of HC=14.11±3.01; alpha=0.05; beta=0.20; power=0.80). After including 31 subjects in the FNSD group and 32 subjects in the HC group, the obtained data were subjected to power analysis again, and the adequacy of the sample size was confirmed (SSPHS score of FNSD group=19.29±4.72; SSPHS score of HC group =13.21±2.56; alpha=0.05; beta=0.20; power=0.80).

RESULTS

The FNSD group consisted of 31 females (M-FNSD, 12 females; SS-FNSD, 9 females; Mix-FNSD, 10 females), and the HC group consisted of 32 females. Tables 1 and 2 show the sociodemographic and clinical characteristics of the FNSD and HC groups.

While the FNSD and HC groups were similar in terms of age (p = 0.350), education level (p = 0.386), marital status (p = 0.579), employment status (p = 0.136), and smoking status (p = 0.836), there were significant differences between the groups in terms of SDQ-20 (p<0.001), SSPHS (p<0.001) and PWBS (p<0.001) scores. Significant differences in SDQ-20 (p = 0.034), SSPHS (p = 0.028), and PWBS (p = 0.015) scores were found between the M-FNSD, SS-FNSD, and Mix-FNSD groups. The comparison that caused significant differences in terms of SDQ-20, SSPHS, and PWBS scores among FNSD subgroups was between SS-FNSD and Mix-FNSD. All patients in the FNSD group were using antidepressants. No subjects were on psychotherapy.

Figure 1 shows the mediating role of the FNSD symptom level (SDQ20) in the relationship between SPH and PW. The indirect effect of SPH on PW was found to be -0.436 (standardized coefficient β of "a" [0.921] x standardized coefficient β of "c" [-0.474], Figure 1). This indicates that SPH reduces PW through FNSD symptoms. The ratio of the indirect effect (-0.436) to the total effect (-0.878) was 49.65%. The direct effect of SPH on PW was found to be -0.442 (standardized coefficient β of "c," Figure 1). This result shows that SPH reduces PW. The ratio of the direct effect (-0.442) to the total effect (-0.878) was 50.35%. The total effect of SPH on PW was found

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Table 1. Comparison of the FNSD and HC groups.

Variables	FNSD (n=31) Mean±SD or Median (mean rank)	HC (n=32) Mean±SD or Median (mean rank)	p-value (Kolmogorov-Smirnov Z)	Cohen's d and Cramer's V/Phi
Age (years)	37.61±8.87	35.5(mean rank)0±8.91	0.350[a]	0.237[e]
Education level (years)	8.00 (30.02)	8.00 (33.92)	0.386[b] (0.920)	0.185[e]
Marital status (married, single, widowed, divorced)	20/7/4	24/6/2	0.579[c]	0.900[f]
Working status (housewife/paid worker)	27/4	23/9	0.136[d]	0.882[g]
Smoking status (no/yes)	23/8	23/9	0.836[d]	0.643[g]
SDQ-20	52.00 (48.00)	24.50 (16.50)	<0.001*[b](3.968)	3.709[e]
SSPHS	20.00 (43.34)	13.00 (21.02)	<0.001*[b] (2.200)	1.601[e]
PWBS	17.06±5.29	33.31±4.76	<0.001*[a]	3.229[e]

*p<0.05; Statistical analysis was performed using the independent samples t-test[a], Mann-Whitney U test[b], chi-square analysis[c], Fisher's exact test[d], Cohen's d[e], Cramer's V[f], Phi[g].

Table 2. Comparison of the FNSD subgroups.

Variables	M-FNSD (n=12) Mean±SD (Median)	SS-FNSD (n=9) Mean±SD (Median)	Mix-FNSD (n=10) Mean±SD (Median)	p value
Age (years)	39.08±8.47 (40.00)	36.11±9.77 (34.00)	37.20±9.17 (37.00)	0.750[a]
Education level (years)	7.33±4.24 (6.50)	8.55±2.96 (9.00)	7.60±2.75 (7.00)	0.716[a]
Marital status (married, single, widowed, divorced)	8/2/2	5/3/1	7/2/1	0.900[b]
Working status (housewife/paid worker)	10/2	8/1	9/1	0.882[b]
Smoking status (no/yes)	10/2	6/3	7/3	0.643[b]
History of psychiatric hospitalization (no/yes)	11/1	8/1	8/2	0.706[b]
Antipsychotic use (no/yes)	10/2	7/2	8/2	0.949[b]
Age of FNSD onset	27.08±6.77 (24.50)	28.33±6.32 (26.00)	26.40±6.86 (24.50)	0.818[a]
SDQ-20	54.83±10.92[xy] (49.50)	49.88±9.70[x] (46.00)	62.20±8.41[y] (63.50)	0.034*[a]
SSPHS	18.33±5.08[xy] (19.00)	17.11±3.51[x] (17.00)	22.40±3.86[y] (23.00)	0.028*[a]
PWBS	17.33±4.53[xy] (18.00)	20.44±5.52[x] (22.00)	13.70±4.13[y] (12.50)	0.015*[a]

*p<0.05; tatistical analysis was performed using one-way ANOVA[a] (post-hoc Bonferroni) and Fisher's exact test[b] (adjusted p value using the Bonferroni method). The letters [x] and [y] indicate statistical significance in the two comparisons. The presence of the same exponent letter in two compared groups indicates that the groups are similar (p > 0.05) for that variable, whereas different exponent letters indicate that the groups are different (p<0.05) for that variable.

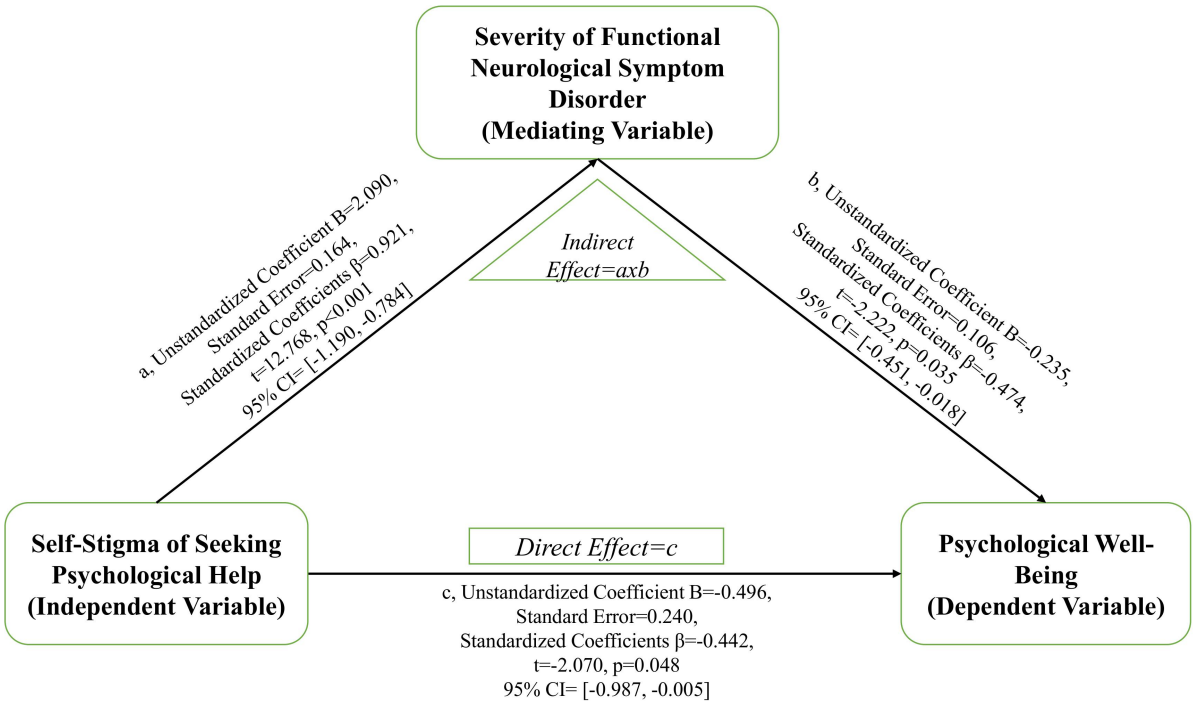

Figure 1. Mediation Model Diagram.

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to be -0.878. This shows that SPH generally reduces PW (total effect of 100.00%).

In the correlation analysis performed in the FNSD group, a significant relationship was found between SSPHS and SDQ-20 (r=0.921, p<0.001), between SSPHS and PWBS (r=-0.879, p<0.001), and between PWBS and SDQ-20 (r=-0.882, p<0.001).

DISCUSSION

This study examines the concepts of SPH and PW in FNSD across FNSD symptoms. The findings demonstrated that patients diagnosed with FNSD had higher SPH scores and lower PW scores than healthy individuals, a negative relationship between SPH and FNSD symptom scores and PW, and a mediating role of FNSD symptoms in half of the relationship between SPH and PW.

Symptoms of FNSD, a biopsychosocial disorder, are common in patients with non-psychiatric illnesses [25, 26]. This symptomatic overlap highlights the importance of a thorough differential diagnosis and careful consideration of its clinical features, natural history, and treatment reaction in distinguishing FNSD from other nonpsychiatric illnesses [27]. Patients referred to psychiatry after a series of unsuccessful attempts at non-psychiatric treatment avoid admission due to stigmatization concerns [27, 28]. A recent survey showed that 81.6% of respondents felt that they had been treated poorly due to stigmatization [28]. New psychiatric symptoms are added to the existing psychiatric symptoms of patients whose psychiatric treatment has been delayed or the severity of existing symptoms increases [6]. There are various ways to conceptualize stigmatization, which is a multifaceted social process [27, 29]. According to Link and Phelan's [29] sociological model, stigmatization is the result of labeling, stereotyping, separation, status loss, and discrimination in a power-based environment. Additionally, stigmatization has been viewed as an interpersonal process that involves discrimination, stereotyping, and prejudice [28, 30]. Cognitive errors, such as labeling, play a role in the emergence of stigma [29, 31], and cognitive errors in interpersonal relationships are higher in patients with FNSD than in healthy individuals [2]. In the present study, the SPH level was higher in patients with FNSD than in healthy individuals and was significantly higher in patients with motor and somatosensory FNSD symptoms (mix FNSD) than in patients with only motor and somatosensory symptoms. The SPH level of patients with motor FNSD symptoms was higher than that of patients with somatosensory symptoms, although not significantly. In the study conducted by Örüm and Atmaca [2], the cognitive error levels of FNSD subtypes in interpersonal relationships were compared, and an increased cognitive error level was reached in M-FNSD compared to SS-FNSD. Although stigmatization and related situations were not directly investigated in this study, this may facilitate the study's understanding. Studies investigating cognitive errors and SPH together will allow a more accurate interpretation of our findings.

Depending on the symptom characteristics, FNSD causes negative changes in psychological, physical, social, and functional areas and harms PW [32, 33]. The quality of life of patients with impaired PW is also negatively affected over time. The quality of life of patients diagnosed with FNSD has been examined in various studies. In the study conducted by Özenli et al. [34], the quality of life of patients diagnosed with FNSD was worse than that of healthy controls. The deterioration of quality of life may result in the deprivation of the required treatment for FNSD symptoms. Ultimately, since FNSD and negative life outcomes have a two-way relationship, the period in which the patient remains untreated may be extended. Studies on FNSD subtypes or symptom dimensions are insufficient, and most studies have focused on nonepileptic seizures [28]. However, recent studies have shown that FNSD subtypes differ in various characteristics and that patients may exhibit more than one symptom dimension. In other words, the majority of studies in this sphere relate to nonepileptic seizures and do not cover the full spectrum of FND symptoms [2, 35].

This study is valuable because it reveals the relationship between SPH and PW in FNSD. A negative relationship exists between SPH and PW in patients with FNSD. Rose et al. [36] conducted a study on healthy high school students and reported that self-stigma was associated with overall well-being and five well-being subscales, including environmental mastery, self-acceptance, autonomy, personal growth, and positive relations. The findings of Rose et al. [36] point to the need for greater awareness of self-stigma along with an explicit focus on the promotion of protective well-being in prevention work and interventions designed to alleviate the tendency for young people to internalize stigma.

The most important finding of this study is that FNSD symptoms mediate the relationship between SPH and PW. FNSD treatment should be approached with a biopsychosocial approach. The combination of psychopharmacological agents and psychotherapy provides the best results. The family, caregivers, and social environment should be included in the treatment process as a whole. Possible additional psychiatric symptoms accompanying FNSD should also be considered during treatment [1]. Reducing FNSD symptoms with various interventions may positively affect the relationship between high SPH and low PW through the mediating effect of FNSD symptoms.

Limitations

This study has several limitations. The limited sample size of FNSD subgroups. Its cross-sectional nature does not allow for a strong establishment of the findings' cause-and-effect relationships. The factors affecting SPH and PW in FNSD will be revealed more clearly with longitudinal studies. The possible effect of personality traits on the findings was not separately investigated. It is recommended to reveal the possi-

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ble effects of factors such as social support, culture, economic conditions, and personality traits on the relationship between SPH and PW for a better understanding of the subject (as an intermediary or regulator). Only female participants were included in this study. Conducting studies that include male patients would eliminate unintentionally raised questions about recruitment bias. Although the HC group excluded participants with past or current FNSD diagnoses or any active psychiatric disorder, patients may have influenced them in terms of SPH and PW [37]. Studies that include participants with no relatives with any active or past psychiatric disorder can be expected to eliminate this limitation.

CONCLUSION

In conclusion, this study shows that in patients diagnosed with FNSD, the level of SPH is higher and the level of PW is lower compared to healthy individuals, that there is a significant relationship between SPH and PW, and that the level of FNSD symptoms indirectly mediates the relationship between SPH and PW. Reducing FNSD symptoms with biopsychosocial interventions may indirectly affect the relationship between SPH and PW and produce positive results.

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Ethics Committee Approval: The Ethics Committee of Fethi Sekin City Hospital approved the study protocol (2024/4-12).

Informed Consent: Informed consent was obtained from all participants.

Peer-review: Externally peer-reviewed.

Conflict of Interest: The authors have no potential conflicts of interest relevant to this article.

Author Contributions: Concept: DÖ; Design: DÖ; Supervision: MA; Materials: DÖ; Data Collection and Process in Supervision: DÖ; Analysis and Interpretation: MA, DÖ; Literature Search: DÖ; Writing Manuscript: DÖ; Critical Review: MA.

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REFERENCES

1. Espay AJ, Aybek S, Carson A et al. Current concepts in diagnosis and treatment of functional neurological disorders. *JAMA Neurol.* 2018;75(9):1132-41. doi: 10.1001/jamaneurol.2018.1264.
2. Orum MH, Atmaca M. Motor and somatosensory symptoms determine cognitive error levels in patients with functional neurological symptom disorder/conversion disorder. *Folia Med (Plovdiv).* 2022;64(4):581-7. doi: 10.3897/folmed.64.e62966.
3. Rommelfanger KS, Factor SA, LaRoche S, et al. Disentangling stigma from functional neurological disorders: Conference report and future roadmap. *Front Neurol.* 2017;8:106. doi: 10.3389/fneur.2017.00106.
4. Corrigan PW. Lessons learned from unintended consequences regarding erasing the stigma of mental illness. *World Psychiatry.* 2016;15(1):67-73. doi: 10.1002/wps.20295.
5. MacDuffie KE, Grubbs L, Best T et al. Stigma and functional neurological disorder: A clinical encounter-targeting research agenda. *CNS Spectr.* 2020:1-6. doi: 10.1017/S1092852920002084.
6. McLoughlin C, McWhirter L, Pisegna K et al. Stigma in Functional Neurological Disorders: A Systematic Review. *Clin Psychol Rev.* 2024;112:102460. doi: 10.1016/j.cpr.2024.102460.
7. Barnett, C., Davis, R., Mitchell, C., Tyson, S. The vicious cycle of functional neurological disorders: a synthesis of health care professionals' views on working with patients with functional neurological disorders. *Disabil Rehabil.* 2022;44(10):1802-11. doi: 10.1080/09638288.2020.1822935.
8. Dent B, Stanton BR, Kanaan RA. Psychiatrists' understanding and management of conversion disorder: a binational survey and comparison with neurologists. *Neuropsychiatr Dis Treat.* 2020;16:1965-74. doi: 10.2147/NDT.S256446.
9. Bailey C, Agrawal N, Cope S et al. Illness perceptions, experiences of stigma and engagement in functional neurological disorder (FND): exploring the role of multidisciplinary group education sessions. *BMJ Neurol Open.* 2024;6(1):e000633. doi: 10.1136/bmjno-2024-000633.
10. Noyan M, Beydağ KD. Relationship between stigma and psychological well-being in women with infertility. *Ordu University J Nurs Stud.* 2025;8(1):88-96. doi: 10.38108/ouhcd.1193467.
11. Ocel H. Meme kanseri tanısı almış çalışan kadınlarda damgalanma ve bilinçli farkındalık ile psikolojik iyi oluş arasındaki ilişkiler: Psikolojik esnekliğin düzenleyici rolü. *Türk Psikoloji Dergisi.* 2017;32(80):116-33.
12. Al Eid NA, Arnout BA, Alqahtani MMJ, Fadhel FH, Abdelmotelab AS. The mediating role of religiosity and hope for the effect of self-stigma on psychological well-being among COVID-19 patients. *Work.* 2021;68(3):525-41. doi: 10.3233/WOR-203392.
13. Đorić SN. HIV-related stigma and subjective well-being: The mediating role of the belief in a just world. *J Health Psychol.* 2020;25(5):598-605. doi: 10.1177/1359105317726150.
14. Kahraman S. Examination of variables predicting attitudes toward seeking psychological help in adults: psychological symptoms, insight, stigma, and demographic variables. *International Anatolian Journal of Social Sciences.* 2024;8(2):462-86. doi: 10.47525/ulasbid.1472685.
15. Diagnostic and statistical manual of mental disorders. *American Psychiatric Association.* (5th ed., text rev.) (2022). doi: 10.1176/appi.books.9780890425787.
16. Shimotsu S, Horikawa N, Emura R et al. Effectiveness of group cognitive-behavioral therapy in reducing self-stigma in Japanese patients with psychiatric disorders. *Asian J Psychiatr.* 2014;10:39-44. doi: 10.1016/j.ajp.2014.02.006.
17. Yates, K.F., Sweat, V., Yau, P.L., Turchiano, M.M., Convit, A. Impact of metabolic syndrome on cognition and the brain: a selected review of the literature. *Arterioscler Thromb Vasc Biol.* 2012;32(9):2060-7. doi: 10.1161/ATVBAHA.112.252759.
18. Vogel DL, Wade NG, and Haake South Measuring self-stigma associated with seeking psychological help. *J Couns Psychol.* 2006;53(3):325-37. doi: 10.1037/0022-0167.53.3.325.
19. Vogel DL, Wade NG, Ascheman PL. Measuring perceptions of stigmatization by others for seeking psychological help: Reliability and validity of a new stigma scale for college students. *J Couns Psychol.* 2009;56(2):301-8. doi: 10.1037/a0014903.
20. Acun-Kapıkıran N, Kapıkıran Ş. Psikolojik Yardım Aramada Kendini Damgalama Ölçeği: Geçerlik ve güvenirlik. *Türk Psikolojik Danışma ve Rehberlik Dergisi.* 2013;5(40):131-41.
21. Diener E, Wirtz D, Tov W et al. New Well-Being Measures: Short Scales to assess flourishing and positive and negative feelings. *Soc Indic Res.* 2010;97:143-56. doi: 10.1007/s11205-009-9493-y.
22. Telef BB. Psikolojik İyi Oluş Ölçeği: Türkçeye uyarlama, geçerlik ve güvenirlik çalışması. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi.* 2013;28(3):374-84.

https://doi.org/10.5455/annalsmedres.2025.05.120

23. Nijenhuis, E.R., Spinhoven, P., Van Dyck, R., Van der Hart, O., Vanderlinden, J. Development and psychometric characteristics of the SDQ-20. *J Nerv meant Dis.* 1996;184(11):688-94. doi: 10.1097/00005053-199611000-00006.
24. Sar, V., Kundakci, T., Kiziltan, E., Bakim, B., Bozkurt, O. Differentiating dissociative disorders from other diagnostic groups in Turkey using somatoform dissociation. *J Trauma Dissociation.* 2001;1(4):67-80. doi: 10.1300/J229v01n04_04.
25. Joos A, Herrmann C, Lahmann C et al. Biopsychosocial complexity in functional neurological disorder (FND). *Gen Hosp Psychiatry.* 2023;84:44-6. doi: 10.1016/j.genhosppsych.2023.06.011.
26. Westlin C, Keshavan MS, Perez DL. Neuroscience in pictures: Functional neurological disorder. *Asian J Psychiatr.* 2025;106:104449. doi: 10.1016/j.ajp.2025.104449.
27. Mavroudis I, Kazis D, Kamal FZ, et al. Understanding Functional Neurological Disorders: Recent Insights and Diagnostic Challenges. *Int J Mol Sci.* 2024;25(8):4470. doi: 10.3390/ijms25084470.
28. McLoughlin, C., McGhie-Fraser, B., Carson, A., Olde Hartman, T., Stone, J. How stigma unfolds in patients with functional neurological disorders. *J Psychosom Res.* 2024;181:111667. doi: 10.1016/j.jpsychores.2024.111667.
29. Link BG, Phelan JC. Conceptualizing stigma. *Annu Rev Sociol.* 2001;27:363-85. doi: 10.1146/annurev.soc.27.1.363.
30. Fox, A.B., Earnshaw, V.A., Taverna, E.C., Vogt, D. Conceptualizing and measuring stigma of mental illness: The mental illness stigma framework and a critical review of measures. *Stigma Health.* 2018;3(4):348-76. doi: 10.1037/sah0000104.
31. Stangl AL, Earnshaw VA, Logie CH, et al. The Health Stigma and Discrimination Framework: a global, crosscutting framework to inform research, intervention development, and policy on health-related stigmas. *BMC Med.* 2019;17(1):31. doi: 10.1186/s12916-019-1271-3.
32. Rutten, S., Bradley-Westguard, A., Nicholson, T.R., Pick, S. Outcome measurement in functional neurological disorder: A qualitative study on the views of patients, caregivers, and healthcare professionals. *J Neurol.* 2025;272(3):189. doi: 10.1007/s00415-025-12912-9.
33. Yılmaz S, Bilgiç A, Akça ÖF, Türkoğlu S, Hergüner South Relationships between depression, anxiety, anxiety sensitivity, and perceived social support in adolescents with conversion disorder. *Int J Psychiatry Clin Pract.* 2016;20(1):10-8. doi: 10.3109/13651501.2015.1117110.
34. Ozenli Y, Ozisik HI, Tugal O, Yoldascan East Health-related quality of life in patients with conversion disorder with seizures. *Int J Psychiatry Clin Pract.* 2008;12(2):105-11. doi: 10.1080/13651500701679379.
35. Dworetzky BA, Baslet G. Functional neurological disorder: Practical management. *Neurotherapeutics.* 2025:e00612. doi: 10.1016/j.neurot.2025.e00612.
36. Rose AL, Atkey SK, Flett GL, Goldberg JO. Self-stigma and domains of well-being in high school youth: Associations with self-efficacy, self-esteem, and self-criticism. Journal of the American Psychological Association. *Psychol Schs.* 2019;1-11. doi: 10.1002/pits.22276.
37. Ebrahim OS, Al-Attar GST, Gabra RH, Osman DMM. Stigma and burden of mental illness and their correlates with family caregivers of patients with mental illness. *J Egypt Public Health Assoc.* 2020;95(1):31. doi: 10.1186/s42506-020-00059-6.

https://doi.org/10.5455/annalsmedres.2025.05.120