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Abstract

Objectives. Psychopathology levels are elevated in patients with psychogenic non-epileptic seizures (PNES) and those with epilepsy. However, patients with PNES report higher rates of trauma and neglect, poorer health-related quality of life (HRQoL), and an increased prevalence of insecure attachment. We examined to what extent attachment style and relationship quality with their main informal carer impact on levels of HRQoL, depression, and anxiety in patients with PNES versus those with epilepsy.

Method. Consecutive patients with PNES (N = 23) and epilepsy (N = 72) completed questionnaires about attachment style, quality of their relationship with their main informal carer, seizure severity, HRQoL, depression, and anxiety.

Results. Patients with PNES reported higher levels of anxiety and depression and lower HRQoL, than those with epilepsy. PNES: No significant correlations were found with HRQoL but depression correlated positively with attachment avoidance, attachment anxiety, and relationship conflict. Anxiety correlated positively with attachment avoidance, attachment anxiety, and relationship conflict, and negatively with relationship depth and support. Epilepsy: HRQoL correlated negatively with seizure severity, depression, anxiety, attachment avoidance, and attachment anxiety. Depression correlated positively with attachment avoidance, attachment anxiety, and relationship conflict. Anxiety correlated positively with seizure severity, attachment avoidance, and attachment anxiety. Correlations between measures of relationship quality and anxiety were stronger in PNES versus epilepsy patients ($zs > 2.66$ to 2.97, $ps < 0.004$). Attachment style and relationship quality explained larger amounts of variance in depression (45%) and anxiety (60%) in the patients with PNES than those with epilepsy (16% and 13%).

Significance. Levels of anxiety and depression were higher in patients with PNES than those with epilepsy. Interpersonal problems were much more closely associated with anxiety and depression in patients with PNES than those with epilepsy. The findings support the use of therapeutic interventions for PNES focusing on attachment and relationship issues.

Key words: PNES; insecure; interpersonal; depression; anxiety; HRQoL.

1. Introduction

Psychogenic non-epileptic seizures (PNES) superficially resemble epileptic seizures, but are not caused by the kind of abnormal electrical activity in the brain which causes epilepsy.[1] Instead PNES are a response to adverse internal or external stimuli perceived associated with reduced self-control and, typically, impaired consciousness.[2] Although the incidence of PNES in the general population is lower at up to 33 per 100,000, compared to 780 per 100,000 for epileptic seizures,[3] PNES are a significant health problem generating high costs to the patient, health system, and society.[4]

PNES and epilepsy are both associated with higher levels of anxiety and depression than those found in the general population.[5] However, patients with PNES consistently report poorer HRQoL and higher levels of anxiety and depression than those with epilepsy.[6] To date, very little is known about whether the causes of psychopathology in patients with these two different seizure disorders are identical or whether they differ – for instance because of the well-recognised higher rates of previous trauma, neglect, and family dysfunction reported by patients with PNES that are considered important predisposing factors for this disorder.[7,8] These experiences in early life could be linked to PNES in later life through the disruption of attachment processes. Factors such as parental ill-health, abuse, or neglect may cause a child to grow up without a caregiver attuned to the child's emotional state, and may limit the opportunity for the child to experience positive arousal and relaxation cycles.[9] The absence of this experience from a primary caregiver could impair the development of a positive internal working model of the self as loveable and worthy and of others as trustworthy and responsive with adverse consequences on interpersonal relationships in later life.[10] Indeed, patients with PNES have been found to be more likely to have fearful attachment styles and a history of abuse and neglect, compared to patients with epilepsy,[11] and trauma history, fearful attachment style, psychopathology, and dissociation have been observed to be associated with PNES but not epileptic seizure frequency.[12]

Relatedly, family dysfunction has also been proposed as an important predisposing factor for PNES. It has been argued that, rather than PNES developing as a consequence of childhood abuse, both childhood abuse and PNES could result from family dysfunction.[13] However, understanding of family functioning in patients with PNES is limited and family function before the onset of PNES has only been studied by retrospective self-report. Family functioning is affected in patients with PNES or epilepsy,[7] but after the manifestation of seizures families of patients with PNES have been found to be more dysfunctional in areas of affective involvement, communication, and general functioning than families affected by epilepsy.[14] Family functioning has been found to explain an additional 18% and 24% of the variance in HRQoL reported by patients with PNES and epilepsy respectively (after controlling for levels of depression and seizure frequency).[7]

The present study extends previous work by (1) examining differences in relationship quality, attachment style, HRQoL, depression, and anxiety between patients with PNES versus epilepsy, and (2) assessing the extent to which measures of relationship quality, attachment style, and seizure severity are associated with HRQoL, depression, and anxiety in patients with PNES versus those with epilepsy.

2. Method

2.1 Procedure and Participants

Potential participants were approached consecutively in outpatient seizure clinics at the Sheffield Teaching Hospitals and Chesterfield Royal Hospital NHS Foundation Trusts in the United Kingdom over a seven-month period (July 2014 – February 2015). Consultant neurologists with a special interest in seizure disorders identified eligible patients at both sites, according to the following criteria: (i) aged over 18 years of age with a clinically firm diagnosis of epilepsy or PNES (i.e., the patient's consultant neurologist was sufficiently sure about the diagnosis only to offer treatment for one disorder), (ii) able to provide informed consent, (iii) sufficient English skills to complete the questionnaire booklet themselves, (iv) patients with a mixed PNES and epilepsy diagnosis were excluded from the study. Potential participants were sent information about the

study at least two weeks before their appointment. Questionnaires could be completed at the time of their clinic visit or returned by post later. Ethical approval for this study was granted by East Midlands Nottingham 2 Research Ethics Committee.

2.2 Measures

2.2.1 Demographics

Patients self-reported age, gender, ethnic group, marital status, and the number of people in their household.

2.2.2 Seizure Characteristics

Patients were asked to report the duration of their seizure disorder. Seizure severity was measured using the Liverpool Seizure Severity Scale – Version 3 (LSSS-3).[15] The LSSS-3 is a 12-item forced-choice self-report measure asking about the number of seizures experienced in the past four weeks and quantifying the severity of the seizures in this time. Scores range from 0-100, with high scores reflecting increased seizure severity. This scale has been used widely within PNES and epilepsy populations.

2.2.3 Relationship Quality

The Quality of Relationships Inventory (QRI)[16] explores the relationship between the patient with PNES or epilepsy and their main informal carer (e.g., a spouse, partner, family member, friend). The 25-item measure yields three subscales: support (7 items, $\alpha = .87$, e.g., "To what extent can you count on this person for help with a problem?"), conflict (12 items, $\alpha = .91$, e.g., "How much do you argue with this person?"), and depth (6 items, $\alpha = .86$, e.g., "How responsible do you feel for this person's wellbeing?"). Each statement is rated on a four-point scale ranging from one (not at all) to four (very much). Subscale scores were obtained by computing the mean response to each subscale.

2.2.4 Attachment Style

The short-form, 29-item version, of the Attachment Style Questionnaire (ASQ)[17] was used to assess two dimensions of attachment style; namely, attachment avoidance (16 items, $\alpha =$

.82, e.g., “I find it hard to trust other people”) and attachment anxiety (13 items, α = .92, e.g., “I wonder how I would cope without someone to love me”). Participants rate each statement on a six-point scale ranging from totally agree to totally disagree. Unlike the original ASQ which produces categorical data, the short form of this questionnaire yields continuous scores for each dimension which are obtained by computing mean responses to questions contributing to the two subscales.

2.2.5 Depression and Anxiety

The nine-item Patient Health Questionnaire (PHQ-9) measures depression in the preceding two weeks (α = .86-.89).[18] General anxiety was measured using the seven-item Generalised Anxiety Disorder (GAD-7) measure (α = .92).[19] Cut-off scores of ≥10 and ≥8 indicate clinically significant symptoms of depression and anxiety respectively.

2.2.6 HRQoL

HRQoL was measured using the 10-item patient version of the Quality of Life in Epilepsy (QOLIE-10-P) questionnaire.[20] The QOLIE-10-P comprises single items corresponding to seizure worry, overall QoL, emotional well-being, energy–fatigue, cognitive functioning, physical and psychological effects of AEDs (antiepileptic drugs), work, driving, and social function (α = .85). The QOLIE-10-P correlates highly with the QOLIE-31, the most commonly used HRQoL measure in these patient groups.[21]

2.3 Analysis

A series of independent samples t-tests, and chi-square analyses were used as appropriate to examine differences between patients with PNES and epilepsy on all demographic, seizure, and psychological variables (see Table 1). Pearson correlations were computed to assess associations between relationship quality, attachment, seizure severity, and the psychological variables (separately for patients with PNES and epilepsy) (see Table 2). Fisher’s z transformation was used to assess the significance of the differences between the correlation coefficients for patients with PNES and epilepsy. Pearson correlations and t-tests, as appropriate, were also conducted to test associations between the demographic/seizure variables and the psychological variables.

Hierarchical regression analyses were used to assess the extent to which relationship quality, attachment style, and seizure severity explain variance in depression, anxiety, and HRQoL in patients with PNES and epilepsy, separately. In order to minimise the number of independent variables in the regression analyses, only variables that correlated significantly with HRQoL, depression, and anxiety were entered into each analysis. Those demographic and seizure variables that differed between the two groups were controlled for in all analyses (i.e., age, gender, duration of seizure disorder, and seizure severity). Age, gender, duration of seizure disorder, and seizure severity were entered in the first block, followed by depression in the second block (for HRQoL only), and, finally, attachment scores and relationship quality. An alpha level of 0.05 was used for all analyses.

3. Results

3.1 Comparing Participants with PNES and Epilepsy

A total of 23 patients with PNES and 72 with epilepsy were recruited. As shown in Table 1, PNES participants were younger, more likely to be female, had shorter duration seizure disorders, and reported greater seizure severity than epilepsy participants.

Patients with PNES reported lower overall HRQoL, and higher levels of depressive and anxiety symptoms than those with epilepsy. The clinical cut-off for depression (i.e., ≥10 on PHQ-9) was exceeded by 60.9% of PNES participants and 43.1% of those with epilepsy (difference not significant, $X^2(1, N = 95) = 2.22$, $p = .136$). However, clinically significant levels of anxiety (i.e., ≥8 on the GAD-7) were significantly more likely to be present in the PNES than epilepsy participants (82.6% vs. 41.7%, $X^2(1, N = 95) = 11.70$, $p < .001$). There were no significant differences between the scores of patients with PNES and epilepsy on the subscales of the QRI measuring relationship quality (support, conflict, and depth) and the ASQ measure of attachment style (avoidant and anxious).

[Insert Table 1]

3.2 Correlational Analyses

A summary of the correlational analyses is presented in Table 2. In patients with PNES the analyses yielded the following significant correlations: 1) No variables (demographic, seizure, psychopathology, relationship, attachment variables) were correlated with HRQoL. 2) Depression correlated positively with attachment avoidance, attachment anxiety, and relationship conflict. 3) Anxiety correlated positively with attachment avoidance, attachment anxiety, and relationship conflict, and negatively with relationship support and depth.

In patients with epilepsy the following correlations were significant: 1) HRQoL correlated negatively with seizure severity, depression, anxiety, attachment avoidance, and attachment anxiety. 2) Depression correlated positively with attachment avoidance, attachment anxiety, and relationship conflict. 3) Anxiety correlated positively with seizure severity, attachment avoidance, and attachment anxiety.

Comparison of the strength of the associations in the PNES versus epilepsy groups revealed that the correlations between anxiety and relationship support ($z = 2.97$, $p = .003$), conflict ($z = 2.69$, $p = .004$), and depth ($z = 2.66$, $p = .004$) were significantly stronger in patients with PNES than epilepsy, as was the correlation between depression and attachment anxiety ($z = 2.25$, $p = .024$).

[Insert Table 2]

3.3 Regression Analyses

3.3.1 PNES – see Table 3 and Figure 1 (A & B)

A regression analysis with HRQoL as the dependent variable was not performed for the PNES group as no variables correlated significantly with HRQoL.

Age, gender, duration of seizure disorder, and seizure severity accounted for a non-significant amount of the variance in depression scores in PNES patients, $\Delta R^2 = .26$, $F(4,17) = 1.52$, $p = .24$; however, the addition of attachment avoidance, attachment anxiety, and relationship conflict explained an additional 45% of the variance, $\Delta R^2 = .45$, $F(3,14) = 7.48$, $p = .003$. The final regression model was significant, $F(7,14) = 5.07$, $p = .005$, explaining 72% of the variance in

depression scores. Only attachment anxiety made a significant contribution, with greater attachment anxiety associated with higher levels of depression.

The demographic and seizure variables accounted for a non-significant amount of the variance in anxiety scores in PNES, $\Delta R^2 = .12$, $F(4,17) = 0.60$, $p = .67$; however, attachment and relationship scales explained additional variance, $\Delta R^2 = .60$, $F(5,12) = 5.08$, $p = .01$. The variables in the final regression model accounted for 72% of the variance in anxiety, $F(9,12) = 3.41$, $p = .026$, although none of the individual variables made an independently significant contribution to the model.

3.3.2 Epilepsy - see Table 4 and Figure 1 (C & D)

The regression analyses showed that demographic and seizure variables accounted for a significant amount of variance in HRQoL in epilepsy, $\Delta R^2 = .13$, $F(4,67) = 2.58$, $p = .045$. The addition of depression at step 2 increased the amount of variance explained, $\Delta R^2 = .16$, $F(1,66) = 15.34$, $p < .001$. The two attachment scales added no further variance to the model at step 3, $\Delta R^2 = .01$, $F(2,64) = .43$, $p = .650$. The final regression model was significant, $F(7,64) = 4.04$, $p = .001$, explaining 31% of the variance in HRQoL. Only depression made a unique contribution to the regression equation, such that HRQoL decreased as depression increased.

Age, gender, duration of seizure disorder, and seizure severity explained 23% of variance in depression scores for patients with epilepsy, $\Delta R^2 = .23$, $F(4,65) = 4.73$, $p = .002$. The addition of the attachment scores and relationship conflict explained additional variance, $\Delta R^2 = .16$, $F(3,62) = 5.46$, $p = .002$. The variables in the final regression model accounted for 39% of variance in depression scores, $F(7,62) = 5.60$, $p < .001$. Seizure severity and attachment avoidance were significant predictors, with greater seizure severity and more avoidant attachment traits being associated with more depressive symptoms.

Age, gender, duration of seizure disorder, and seizure severity accounted for a non-significant amount of variance in anxiety in the epilepsy group, $\Delta R^2 = .13$, $F(4,67) = 2.42$, $p = .057$. Attachment styles explained an additional 13% of the variance, $\Delta R^2 = .13$, $F(2,65) = 5.88$, $p = .005$.

The variables in the final regression model accounted for 26% of the variance in anxiety scores, $F(6,65) = 3.81$, $p = .003$. Seizure severity and attachment avoidance made significant contributions, with greater seizure severity and increased attachment avoidance being associated with more anxiety symptoms.

[Insert Tables 3 & 4 and Figure 1]

4. Discussion

This study examined the potential contributions of attachment and relationship variables to HRQoL, depression, and anxiety in patients with PNES, by describing and comparing the impact of these variables with an epilepsy group. Patients with PNES reported lower overall HRQoL and higher levels of depressive and anxiety symptoms than those with epilepsy. The clinical cut-off for depression (i.e., ≥10 on PHQ-9) was exceeded by 60.9% of PNES participants and 43.1% of patients with epilepsy. Clinically significant levels of anxiety (i.e., ≥8 on the GAD-7) were significantly more likely to be present in the PNES than epilepsy participants (82.6% vs. 41.7%). This is consistent with existing literature that shows that patients with PNES suffer increased depression and anxiety, and lower HRQoL, than patients with epilepsy.[22] There were no significant differences between patients with PNES and epilepsy on subscale scores measuring relationship quality (support, conflict, and depth) and attachment style (avoidant and anxious). However, we found much stronger correlations between the measures of relationship quality and anxiety and between attachment anxiety and depression in the PNES than the epilepsy group.

Whereas attachment was a key contributor in the PNES group and seizure variables hardly featured in the regression models, the opposite was observed in the epilepsy group. Furthermore, attachment anxiety was a unique predictor of depression in the patients with PNES. After controlling for demographic and seizure variables, attachment and relationship quality explained large and significant amounts of additional variance in depression (45%) and anxiety (60%) in the patients with PNES (compared to 16% and 13% in the patients with epilepsy). In line with Lally et al. [12], the current results emphasise that whilst there were no between-group differences, the

association between insecure attachment and poor psychological wellbeing was stronger in patients with PNES. However, in contrast to our study others have described differences in predominant attachment styles between patients with PNES and epilepsy.[11] Inconsistencies in the literature may be due to other factors such as small sample sizes and differences in the conceptualisation and measurement of attachment (e.g., category-based versus dimensional).

It is possible that attachment problems measured in the current study are associated with experiences of early life trauma. Salmon et al. (2003) found higher rates of physical, psychological, and sexual abuse were associated with higher depression, anxiety, and relationship conflict in patients with PNES compared to epilepsy, and that family dysfunction best accounted for this difference (N = 81 in each group).[13] Further understanding is needed about the relationship between childhood abuse, somatisation, family influences, and problematic interpersonal patterns that develop into adulthood in PNES.

The association between attachment anxiety and psychological distress found in the current study is consistent with existing literature. It has been argued that characteristics of patients with anxious attachment overlap with those commonly found in patients with medically unexplained syndromes, such as high levels of anxiety, vigilance for closeness, excessive help-seeking, and intolerance of separation.[23] It has also been noted that in outpatient conversations with their doctor, patients with PNES are six times more likely to make catastrophising references to individuals not present during the interaction (i.e., references indicating rumination, helplessness, or magnification) than those with epilepsy.[24] In addition, as a result of the demographic and the unexplained nature of PNES, patients may be more likely to experience stigma, doubt and uncertainty, increased distress, limited access to social and medical networks of support, and increased isolation compared to patients with epilepsy.[25] This could cause patients with PNES to become more dependent on close relationships which, in turn, could perpetuate the need for reassurance and alleviate fears of rejection.[26] However, the self-defeating nature of such behaviours may contribute to increased hostility in patients, carers, and health professionals, which

can ultimately lead to perceived or actual rejection, reinforcing negative views of the self and further exacerbating care-seeking behaviour.[27,28]

Relationship support, conflict, and depth correlated significantly with anxiety in the patients with PNES, but associations were not significant in patients with epilepsy. The strong correlation between relationship quality and anxiety is a novel finding in PNES research, but has been found in other populations. Families of somatising patients have been found to be less supportive, cohesive, and adaptable,[27] and poor affectionate support has been related to poor HRQoL in a population survey of epilepsy patients.[29]

It has been argued that illness, such as PNES, can function to mask family conflicts through the avoidance of negative emotions (including distress aversion, behavioural avoidance, and repression), which these patients can perceive as damaging.[30] Previous research has highlighted a pervasive use of avoidant coping styles in patients with PNES[31–33] and an instinctive avoidant action tendency towards socially threatening cues.[34] Current findings demonstrate that relationship quality is strongly associated with feelings of anxiety, which may be compounded by threat-avoidant behaviours. It may be that PNES function for both the individual and within relationships as a means of avoiding conflict with family members and the distress that this brings. Although there is a dearth of directly comparable data, the medium-to-large effect sizes in the current study indicates that there is a strong association between anxiety about interpersonal problems and high levels of generalised anxiety in patients with PNES, which requires further clinical and research consideration.

4.1 Strengths and Limitations

The present study has a number of strengths. First, it is the only study to date to examine how relationship quality and attachment impact HRQoL, depression, and anxiety in patients with PNES and epilepsy. While growing evidence exists for the role of family functioning in the wellbeing of patients with PNES, the current study is the first to investigate the specific, and arguably more intense, relationship between that of the patient and their main informal carer. As

such, current findings have relevance for both research and clinical application in highlighting the importance of focussing on the patients' closest relationships within therapeutic interventions. Second, the samples recruited were relatively homogenous. The younger age, higher proportion of female participants, and shorter duration of seizure disorder of the patients with PNES reflect epidemiological differences that are well documented within the literature[35] but which, when controlled for, made no differences to the regression models. The patient groups were otherwise comparable in terms of being follow-up patients recruited from outpatient clinics, the majority White British, and living with at least one other person. In addition, both groups had on average been living with their seizure condition for several years. Third, recruitment was consecutive, and both patient groups were recruited from the same setting.

Recruitment was not restricted to patients with video-EEG (video-electroencephalogram) proven diagnoses of PNES or epilepsy. This could be construed as a weakness. However, patients only have a video-EEG confirmed diagnosis if they have frequent seizures. Even in this subgroup approximately one third (of patients with presumed PNES) will not have seizures whilst under observation with video-EEG. Previous research shows that there are significant differences between patients who have PNES during video-EEG and those who do not.[36] The inclusion of patients with clinical (rather than video-EEG proven) diagnoses of PNES or epilepsy therefore means that this study is based on a more representative patient sample.

Several limitations should be noted. First, in view of the cross-sectional design, the direction of relationships between variables cannot be inferred. Second, symptoms of depression and anxiety were assessed in the preceding two weeks whereas attachment style was assessed as a trait measure. The lack of compatibility between state and trait measures (in terms of time frame) is likely to attenuate the strength of correlations. Third, there remains ongoing discussion about the validity of administering the QOLIE to PNES populations.[37] Specifically, questions about the physical and psychological effects of AEDs are sometimes not relevant to patients with PNES, although patients do share a number of experiences listed in the QOLIE (e.g., prohibited from driving, seizure worry).

Fourth, whilst the group sizes were comparable with recently published studies,[6,7] the modest sample of patients with PNES raises the possibility that the study was underpowered to detect small-to-medium effects in the bivariate and multivariate analyses.

4.2 Clinical Implications

Patient attachment style and the role of support, conflict, and depth in the relationship between the patient and their main informal carer should be investigated by clinicians providing treatment for PNES. An in-depth understanding about the emotional toll of this dynamic should be incorporated into the formulation of the difficulties and impact of PNES. Building and sharing the formulation with patients, carers, and professionals could facilitate an integrated approach to understanding and managing the challenges faced by individuals.

Most clinicians consider psychological therapy as the treatment of choice for PNES.[38] Our findings suggest that a focus on interpersonal relationships and attachment are important potential targets for such treatment, regardless of psychotherapeutic modality (e.g., how difficulties in early life can have effects on one's present life, especially on how secure one may feel in relationships and how anxious one is about letting others down or being disappointed by others). Holding a thorough understanding and realistic expectations have been found to influence treatment outcome, as patients left feeling confused or angry often experience poorer outcomes.[39]

The present study supports a systemic perspective which might involve carers as part of the treatment. Patients with PNES are reported to demonstrate increased behavioural avoidance and social withdrawal, and this has been discussed as contributing to the perpetuation of PNES disorders.[32] A key feature of individual and group psychotherapy for patients with PNES focuses specifically on coping strategies and trying to promote assertiveness rather than passive-avoidant behaviour.[40] Enlisting caregivers/partners could be instrumental in shifting the patient from a pattern of dependence, isolation, and disability, to one of building confidence, encouraging self-care, separation, and independence.[26] The results of this study do not just provide support for the inclusion of caregivers in therapy; they provide a rationale for an interpersonal approach

specifically focusing on the relationships of the patient (even when caregivers are not involved in therapy).

4.3 Conclusions

In conclusion, patients with PNES reported higher anxiety and depression levels and lower HRQoL scores than those with epilepsy. The extent to which interpersonal problems explain anxiety in patients with PNES provides support for the use of therapeutic interventions in this group focusing on attachment and relationship issues.

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Table 1. Patient Characteristics

	PNES Patients (N = 23)	Epilepsy Patients (N = 72)	p
Demographic Characteristics			
Age (mean ± SD)	37.74 ± 13.34	45.21 ± 15.76	.043*
Gender (n, %Female)	19 (82.6%)	38 (52.8%)	.011*
Ethnic Group (n, %White British)	22 (95.7%)	71 (98.6%)	.177
Marital Status (n, %married)	9 (39.1%)	39 (54.2%)	.603
Living situation (n, %living with others)	18 (78.3%)	63 (87.5%)	.282
Seizure Characteristics			
Duration of seizure disorder (years) (mean ± SD)	8.02 ± 7.44	22.30 ± 15.21	< .001***
No. seizures per 4 weeks (median, IQR)	2 (0-9)	1 (0-6)	.141
Seizure severity/ictal scale (mean ± SD)	41.68 ± 28.08	27.53 ± 30.13	.049*
Psychopathology and HRQoL			
QOLIE-10 (mean ± SD)	17.18 ± 14.93	33.79 ± 23.46	.002**
Depression/PHQ-9 (mean ± SD)	13.74 ± 7.52	8.65 ± 7.20	.004**
Anxiety/GAD-7 (mean ± SD)	12.43 ± 5.43	7.65 ± 6.91	.003**
Relationship and Attachment Characteristics			
Quality of Relationship/QRI (mean ± SD)			
Support	3.14 ± 0.57	3.41 ± 0.56	.051
Conflict	1.99 ± 0.62	1.82 ± 0.56	.220
Depth	3.57 ± 0.60	3.54 ± 0.49	.802
Attachment Style/ASQ (mean ± SD)			
Avoidant	3.41 ± 0.98	3.09 ± 0.76	.103
Anxious	3.49 ± 1.12	3.16 ± 1.06	.205

Note. *p < .05. **p < .01. ***p < .001.

Table 2. Correlations between Variables and HRQoL, Depression, and Anxiety for PNES and Epilepsy Patients

PNES (N = 23)		HRQoL	Depression	Anxiety
Seizure Characteristics	Duration of Disorder	.33	-.05	-.09
	Frequency	-.31	.07	.15
	Severity	.11	.29	.06
Psychopathology	Depression	-.07	-	.68***
	Anxiety	-.32	.68***	-
Relationship Quality	Support	.24	-.26	-.65**
	Conflict	-.11	.52*	.66***
	Depth	.14	-.32	-.44*
Attachment Style	Avoidance	-.12	.58**	.62**
	Anxiety	-.35	.77***	.60**
Epilepsy (N = 72)		HRQoL	Depression	Anxiety
Seizure Characteristics	Duration of Disorder	-.19	.23	.17
	Frequency	-.17	.02	.02
	Severity	-.34**	.36**	.32**
Psychopathology	Depression	-.51***	-	.74***
	Anxiety	-.55***	.74***	-
Relationship Quality	Support	.01	-.06	-.02
	Conflict	-.20	.28*	.11
	Depth	-.12	.09	.20
Attachment Style	Attachment Avoidance	-.29*	.47***	.36***
	Attachment Anxiety	-.30*	.42***	.25*

Note. *p < .05. **p < .01. ***p < .001.

Table 3

Summary of Regression Analyses for Patients with PNES (N = 23)

Step		B	β	ΔR^2
Depression				
1.	Age	0.19	.34	.26
	Gender	5.61	.29	
	Duration of seizure disorder	-0.21	-.21	
	Seizure severity	0.03	.13	
2.	Conflict	3.85	.32	.45**
	Attachment avoidance	-0.11	-.02	
	Attachment anxiety	3.82	.57*	
Anxiety				
1.	Age	0.14	.34	.12
	Gender	0.18	.01	
	Duration of seizure disorder	-0.09	-.12	
	Seizure severity	-0.00	-.02	
2.	Support	-4.04	-.43	.60**
	Conflict	2.75	.32	
	Depth	2.13	.23	
	Attachment avoidance	1.34	.24	
	Attachment anxiety	1.26	.26	

Note. *p < .05. **p < .01. ***p < .001.

Table 4

Summary of Regression Analyses for Patients with Epilepsy (N = 72)

Step		B	β	ΔR^2
HRQoL				
1.	Age	0.01	.01	.13*
	Gender	-1.66	-.04	
	Duration of seizure disorder	-0.20	-.13	
	Seizure severity	-0.25	-.31**	
2.	Depression	-1.50	-.46***	.16***
3.	Attachment avoidance	-2.72	-.09	.01
	Attachment anxiety	-0.86	-.04	
Depression				
1.	Age	-0.02	-.05	.23**
	Gender	3.58	.25*	
	Duration of seizure disorder	0.08	.16	
	Seizure severity	0.07	.31**	
2.	Conflict	0.31	.02	.16**
	Attachment avoidance	3.20	.34**	
	Attachment anxiety	0.80	.12	
Anxiety				
1.	Age	0.04	.10	.13
	Gender	0.78	.06	
	Duration of seizure disorder	0.04	.09	
	Seizure severity	0.07	.30*	
2.	Attachment avoidance	3.68	.41**	.13**
	Attachment anxiety	-0.26	-.04	

Note. *p < .05. **p < .01. ***p < .001.