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What patients think about psychogenic nonepileptic seizures in Buenos Aires, Argentina: A qualitative approach

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ABSTRACT

Purpose: To analyse the methods of reasoning with regard to patients' experiences of living with psychogenic nonepileptic seizures (PNES) in Buenos Aires, Argentina.
Method: A qualitative approach using semi-structured interviews was used to gain an in-depth and contextual understanding of the perspectives of five patients with PNES. Data collection and analysis were followed by an inductive and interpretive approach informed by the principles of thematic analysis.
Results: Explanatory models and prototypes were identified from the patients' narratives. Four patients related their suffering regarding psychosocial causes –family conflicts, sexual harassment, and life changes, among others-. Hereditary and organic hypotheses appeared to be unspecific. Folk explanations were common to all participants (magic, witchcraft, energetic causes). Four patients used the term *epilepsy* as an illness prototype, focusing on seizures and the use of antiepileptic drugs. Three of them also compared their illness to other people's "attacks" (heart attacks, panic attacks, nervous breakdown). Only one of them referred to someone who was suspected of having epilepsy.
Conclusion: Patients' psychosocial explanatory models are different from the results of previous studies because these studies indicate that most patients support somatic explanations. Patients also use folk explanations related to traditional medicine, which highlights the interpersonal aspects of the disease. Doctor-patient communication is essential for a correct understanding of PNES, resulting in better outcomes. It could also help to reduce the cultural distance between professionals and patients, leading to narrowing inequalities present in multicultural healthcare services.

1. Introduction

Psychogenic nonepileptic seizures (PNES) are defined as paroxysmal changes in behaviour, sensory or cognitive activity, limited in time, that simulate epileptic seizures, but not as a result of abnormal brain electrical discharges [1–3]. In psychiatric diagnostic systems, PNES are categorized as conversion [4] and dissociative disorders [5]. Patients with PNES present a high rate of comorbidity with other psychiatric disorders [6–10]. In addition, many patients with PNES were previously misdiagnosed with epilepsy [11–13], leading to delays in receiving appropriate treatment [14–17].

The video-electroencephalogram (VEEG) is considered the gold standard for differential diagnosis between epileptic seizures and PNES. However, other data, such as the semiology of the seizures and specific clinical information, also have been considered potentially useful to complement differential diagnoses [18–21].

Many studies have focused on the subjective experience of patients with PNES [22]. The heterogeneity of the clinical manifestations of PNES and the relevance of subjective symptoms make it difficult to reflect patients' experience quantitatively [22]. In addition, some authors emphasize that in specific populations, for example, people with a low level of education and a low socioeconomic status, the questionnaires used are biased and have limited reliability [23]. Therefore, qualitative methods that focus

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on understanding or interpreting patients' perceptions and beliefs [24] are useful [22]. Most qualitative approaches to PNES focus on understanding patients' ictal experiences, perceptions, beliefs, and attitudes toward PNES diagnosis and treatment.

Since the 70s, cross-cultural research in mental health has noted the importance of studying patients' explanatory models (EM) regarding their illness. These models often reflect social class, cultural beliefs, religious affiliation, and past experiences with illness and healthcare systems [25]. Kleinman, Eisenberg and Good [26] proposed that failing to consider the differences in explanatory models between doctors and patients could result in rejection, poor adherence or abandonment of supposedly effective treatments in specific populations [27,28].

Research shows that while neurologists believe that PNES are caused by psychological factors, most patients believe that they are caused by biological factors [29]. If physicians fail to consider the patient's perspectives, the patient-physician relationship can be negatively impacted [30], perhaps leading to poor adherence to treatment. Improving patient-physician communication such that patients feel understood by their doctors may improve patient outcomes.

Some authors [31,32] have proposed that EM are insufficient to explain how people reason about health and disease. They claim that patients also use other ways of reasoning, such as analogical thinking (e.g, "María was coughing and then was diagnosed with pneumonia. I was coughing, therefore, I think I might have pneumonia"). The identification of a prototypical illness experience in themselves or others can affect their health behaviours. For instance, in patients with PNES, those who used epilepsy as an illness prototype were less receptive to psychosocial interventions [33] and were less likely to adhere to psychological treatment [34]. As psychotherapy is the treatment of choice by health professionals for PNES, this study highlights the importance of investigating illness prototypes and explanatory models.

Thus far, most of the work in this area has been carried out in health centres in North America and Europe, mainly in the United Kingdom [22]. The experiences of patients and professionals in Latin America have not been studied. The objective of our study is to investigate both illness prototypes and explanatory models as they relate to patients' experiences of living with PNES in Buenos Aires, Argentina. This is the first qualitative study of the experience of patients with PNES in South America.

This work was carried out in the Epilepsy Center of the Ramos Mejía Hospital, a referral centre in the public health system of Buenos Aires and the first facility to offer VEEG, beginning in 2002. People from Argentina and immigrants from neighbouring countries benefit from this free service. Most of the patients tend to be from disadvantaged socioeconomic segments without health insurance. For this reason, cultural differences in communication between practitioners and patients are common.

1.1. Recruitment and sampling

In this study, we included all patients admitted to the VEEG unit to confirm a PNES diagnosis between December 2014 and December 2015. All PNES-diagnosed patients over the age of 18, identified by a neurologist and confirmed through VEEG results, were invited to participate. Those patients who were also diagnosed with epilepsy, had an IQ < 85 according to the Wechsler Intelligence Scale for Adults (WAIS-III) [35], or were in a severe psychotic episode at the time of the evaluation were excluded.

Thirty patients were admitted to the VEEG unit. Eight patients were diagnosed with PNES and evaluated by the mental health team. Seven patients agreed to be interviewed. Five patients completed the evaluation process. Patients who declined to participate did not return for future interviews and did not explain their decision. The sociodemographical characteristics of the five participants are shown in Table 1.

Approval by the ethics committee of the Ramos Mejia Hospital was obtained for this investigation. All the patients signed informed consents. Pseudonyms were given to each of the participants to ensure their anonymity.

1.2. Data collection

All patients were assessed by neurologists, who conducted a full medical evaluation and confirmed the psychogenic origin of the seizures. They communicated this to the patients according to their own clinical training, without following any particular guidelines. Trained psychiatrists assessed for comorbid diagnoses and other psychosocial antecedents, such as trauma (Table 2).

After these assessments, three psychologists (MS, GPK, and MMAP) interviewed each patient. The interviews were recorded and transcribed. The average duration of each interview was 64 min.

1.3. Instruments

A qualitative method using semi-structured interviews was chosen to gain an in-depth and contextual understanding of the patients' perspectives of PNES. For this purpose, we utilized the Spanish version of the McGill Illness Narrative Interview Schedule (MINI) [32,36], which was modified to be used with this specific population by the first author (MS). According to Grouleau, Kirmeyer, and Young [32], this interview explores the narratives of the disease, focusing on the patients' experiences along with their health trajectories. It enables the description of metonymical, analogical, and causal ways of reasoning. In this paper, we focus on analogical and causal reasoning. Analogical reasoning is based on relevant events or episodes from the patient's or others' experiences, which enable the identification of illness prototypes. Causal reasoning can include conventional models, causal attributions, or more elaborate models in which patients identify events or experiences that they attribute to their illness onset [32].

Some of the questions corresponding to each section of the interview are detailed in Table 3.

1.4. Data analysis

Data collection and analysis followed an inductive and interpretive approach, informed by the principles of thematic analysis [37].

Table 1
Socio-demographic characteristics of participants.

Patient	Age[a]	Gender	Nationality	Residence	Marital status	Level of schooling	Occupation
Juan	23	Male	Argentinian	C.A.B.A.	Single	Incomplete Secondary school	Unemployed
Ana	24	Female	Argentinian	A.M.B.A.	Unmarried couple	Incomplete University	Housewife
Sonia	39	Female	Paraguayan	C.A.B.A.	Unmarried couple	Full Primary school	Unemployed
Laura	18	Female	Argentinian	A.M.B.A.	Single	Incomplete Secondary school	Student
Inés	21	Female	Argentinian	C.A.B.A.	Single	Complete Secondary school	Unemployed

[a] Age in years at the time of the first consultation.

Table 2
Clinical features of the participants.

Patient	Age at onset of the crisis	Frequency of seizures	Treatment medication	Psychiatric diagnosis (current)	Previous diagnoses	Trauma	Psychotherapy[a]
Juan	16	2 per month	LMT, CLN	BPD	Epilepsy, panic attacks	Yes (family conflicts)	Yes
Ana	22	2–3 per week	LVT, VCP	BPD	Epilepsy, migraines	Yes (Sexual harassment)	Yes
Sonia	14	2–3 per week	TPM, LMT, CLN, LVM	BPD	Epilepsy, migraines, high blood pressure, panic attacks	Yes (surgery complications)	No
Laura	14	3 per week	LMT, LVT, CLN	BPD	Epilepsy, hysteria	Yes (family conflicts)	Yes
Inés	17	1–2 per week	VCP, LVT, CLN	MDD	Epilepsy, panic attacks	Yes (family conflicts/ sexual harassment)	Yes

CLN: Clonazepam; LMT: Lamotrigine; LVM: Levomepromazine; LVT: Levetiracetam; TPM: Topiramate; VCP: Sodium valproate; BPD: Borderline Personality Disorder; MDD: Major Depressive Disorder.

[a] Psychological treatments undertaken before the PNES diagnosis.

Table 3
Examples of questions made to inquiry about patients' explanatory models and prototypes – Taken from McGill Illness Narrative Interview Schedule [30].

Explanatory model narrative	
a.	According to you, what caused your seizures?
b.	Are there any other causes that you think played a role?
c.	Why did the seizures started when they did?
d.	Is there something happening in your family, at work or in your social life that could explain the seizures?
Prototypes	
a.	In the past, have you ever had a health problem that you consider similar to your current health problem?
b.	Did a person in your family ever experience a health problem similar to yours?
c.	Did a friend, or someone you know, experience a health problem similar to yours?
d.	In what ways do you consider your problem to be similar to or different from this other person's health problem?

First, the researchers listened repeatedly to the original audios and read the verbatim transcriptions. Next, they generated initial themes and codes. To reduce biases, three researchers (MS, GPK, and CT) independently proceeded with a theory-driven analysis of the data, using the conceptual themes proposed by the MINI (prototypes and explanatory models). The relevance of the fragments corresponding to each theme were then discussed with the investigation team.

The same three researchers then independently carried out a data-driven analysis, identifying codes based on the conceptual themes. These codes consisted of different types of causal reasoning (explanatory models such as psychological, social, hereditary, folk beliefs) and analogical reasoning (prototypes such as epilepsy and attacks). Subcodes were also defined to capture the meaning of each participant's statement (i.e., "overload of activities" or "sexual abuse"). All codes, their scope, and labels were discussed with the research team. Finally, all themes and codes were reviewed and redefined. For example, two codes, "psychological causes" and "social causes," were later combined as "psychosocial causes."

Illustrative quotes have been selected to support the results (Tables 4 and 5).

2. Results

Five patients, four women and one man, participated in this study. One participant, Sonia, from Paraguay, had never participated in therapy before. The others were Argentine, although two, Juan and Inés, were first-generation immigrants from Bolivia. All the Argentines had participated in therapy in the past. Only Juan and Laura were in therapy at the time of their interview. None said that their therapy was focused on their seizures.

2.1. Modes of reasoning about the illness

2.1.1. Explanatory models

At various times during the interview, each of the patients expressed several causal beliefs regarding their PNES. The patients did not express a single coherent explanation of their PNES. Patients often revealed that these beliefs were not their own but their relatives' or doctors' beliefs.

Four patients associated psychosocial factors such as mental states, psychological features, or social environment, with the causes of their disorder. For example, Juan thought he had epilepsy. After browsing the Internet, he concluded that epilepsy could be caused by a traumatic event [1.1]. This opinion was also endorsed by his father [1.2]. However, Juan did not associate family violence (corporal punishment by his father) with his illness.

Ana, in turn, associated her first seizure with the birth of one of her children [1.3] and the consequent overload of activities [1.4]. However, she did not link her seizures to sexual abuse she suffered at 15. She rejected her mother's theory, which connected her seizures to the trial of the perpetrator of the abuse [1.5]. Laura attributed the cause of her illness to violence by her schizophrenic father [1.6]. However, she rejected the diagnosis of "hysteria" from a healthcare team regarding her seizures [1.7]. At first, Inés confused her seizures with panic attacks [1.8]. She then rejected this explanation and related her illness to attacks by her brother and to her grandmother's death [1.9]. Sonia, who had never been in therapy before, was the only patient who did not mention any psychosocial explanations for her illness.

Two patients, Laura and Inés, mentioned inherited family traits as the cause of their condition, but rejected this explanation due to a lack of supporting evidence [1.10, 1.11].

Three patients referred to organic causes that had been suggested by other people. Juan said that his mother thought his seizures were due to his drug addiction. He flatly rejected this hypothesis, and his doctor supported him [1.12]. Ana mentioned that both her psychologist and one of her physicians said her condition could be "clinical" as opposed to "psychological" [1.13]. She did not endorse these explanations as her own. Laura said a relative had told her that her seizures were related to the vagus nerve [1.14].

Patients also referred to folk explanations, based on native beliefs, which were similar to other explanations of epilepsy in non-Western cultures. There were two categories of folk

Table 4
Explanatory Models.

Theme	Subtheme	Statement
Psychosocial causes	Psychological (explicit)	1.1 “Most people had epilepsy because of psychological (causes). Because of a trauma or something like that” (Juan) 1.2. “My dad thinks it’s something psychological” (Juan)
	Life changes	1.3. “It just happened that I had my baby and then the seizures appeared” (Ana)
	Overload of activities	1.4. “When I feel I’m doing too many things at the time, and I don’t sleep well. I do many things at the time during the day” (Ana)
	Sexual harassment	1.5. “During that time there was . . . I don’t remember how to say, but . . . well, there was an oral trial against this person (who raped me). But I didn’t know by then, because my mom didn’t tell me. But then my mom told me: ‘you surely knew, and you don’t say anything and that’s why you feel bad’. But I didn’t know”(Ana)
	Family violence	1.6. “I could say that it is because of my dad (. . .) he cheated on my mom, he was very unfaithful to her with anyone he came across with. He has beaten my mom. Also, he tried to kill my sister”(Laura)
	Hysteria	1.7. “I thought they were kidding with me. Because it was the first time it happened, and everyone thought it was a seizure. But when I went to the clinic, the doctor said ‘It is just an Hysteria attack’. And that really pissed me off” (Laura)
	Psychological (implicit)	1.8. “At first I thought they were panic attacks (. . .) at psychology classes in school they explained us that” (Inés)
	Family conflicts	1.9. “And I think that the difficulties I had were because of different things, like my grandmother’s death, or not getting along with my brother” (Inés)
Hereditary causes	Implicit	1.10. “It was something totally unknown for me, for my family. My parents, never . . . They never had something like that, not a seizure, nor epilepsy, nothing” (Laura)
	Explicit	1.11. “They asked me if I had a relative, but no . . . Because they say it’s hereditary” (Inés)
Organic causes	Drugs	1.12. “My mom was convinced it was because of drugs. Doctors said it was not” (Juan)
	“Something clinical”	1.13. “The psychologist told me that he didn’t find anything psychological. He told me that I had already assumed what happened (the rape), or something like that. And then he told me that it had to be something clinical” (Ana)
	Vagus nerve	1.14. “My mother-in-law and many others told me something about the vagus nerve. They say it has something to do with seizures” (Laura)
Folk/Popular causes	Magic (*Daño*)	1.15. “My mom thought someone had done me a *daño*, so she sent me with my aunt in Cochabamba to be cured. It was nonsense to me, but I had nothing to lose, so I went there” (Juan) 1.16. “I know I believe in certain things . . . I know there’s good and evil. And sometimes my mom comes and say ‘someone has done something bad to you (*daño*), for sure” (Ana) 1.17. “They went to my house, they made a ritual to see if there was a spell (*daño*) in any object in the house, in a present or something like that” (Laura)
	Witchcraft	1.18. “People tell me ‘go, try’. Perhaps someone did bad things to you. Bad things. How do you say? Witchcraft or something like that (. . .). They told me that there is a woman who cures epilepsy and headaches, everything. And she charges you with money. But she tells you everything you have and then gives you an herbal remedy. ‘You are going to take all of these and you will be cured’, she told me. I did everything she said, and nothing. That’s why I don’t believe in anyone anymore” (Sonia)
	Energy	1.19. “It happens to me sometimes. I feel too much negative energy in my house. I think it is because my dad and my grandma died there” (Inés)

Table 5
Prototypes.

Theme	Subtheme	Statement
Epilepsy	Seizures and medication	2.1. “I have a cousin who has epilepsy, confirmed. (. . .) when he has seizures he takes medications” (Juan) 2.2. “I came to this hospital because of the recommendation of my sister. Her ex-husband was epileptic and he attended this hospital. So she recommended this hospital to me, she told me to come here (. . .). Her ex-husband used to take lots of medication, because he had lots of seizures. It was very similar to my condition” (Laura)
	Seizures	2.3. “Yes, I have a neighbor, he has epilepsy. He has something similar to me, he has a seizure and then he falls” (Sonia) 2.4. “(The difference is that) I don’t hurt myself, because sometimes I sit before, or I hold on to anything, so I don’t fall” (Sonia)
	Illness label	2.5. “I recently knew, after it happened to me, about my grandfather and my mother’s sister. They both had epilepsy also. My grandfather was treated . . . he knew when he was quite old, when he was thirty-something . . . he already had children. And he was treated. He just took one pill . . . I don’t remember the name now” (Ana) 2.6. “I know how the little girl’s seizures are. They told me recently, because they thought it could be epilepsy, similar to mine. She makes strong movements, and then she has absences . . . she doesn’t know who she is” (Ana)
Attacks	Self-experience	2.7. “I had an attack in my house, and then I had to leave, because I was feeling bad, I had a lot of pain, and I left. I had my lips white, blue . . . I couldn’t talk” (Sonia)
	Death	2.8. “My mom. She had an attack and died. Eleven years ago” (Sonia) 2.9. “My mother’s brother (. . .) he got nervous, then he had an attack and died (. . .) A heart attack” (Sonia)
	Mental Illness	2.10. “He had different kinds of attacks. He had attacks, like seizures, his body was stiff. He started to tremble, and he cried. He had crying jags very often. He cried, and cried, or something like that” (Laura)
	Nerves	2.11. “I can relate (my attacks) with my brother’s nervous breakdown (ataques de nervios)” (Inés)
	Panic	2.12. “They have panic attacks. I mean, we are nine brothers and sisters. Four of them are my dad’s, and most of are taking sleeping pills because they have problems. They are full of problems. I don’t know what happens to them” (Inés) 2.13. “Yes, but I told my mom: ‘Either I’m going crazy or I have a panic attack’. Until I had my first seizure . . . ” (Inés)
It was not epilepsy	Trauma	2.14. “My partner has a cousin who is under treatment. I don’t know what she has, because at first they thought that she had epilepsy. She had absences, or something like that. But then they found that it was not epilepsy. Her father had kidnapped her when she was little, and for about two years her mother couldn’t find her. And they say something could happen at that time, and . . . She could not get over it. She’s under treatment now. And then they said it was not epilepsy” (Ana)

explanations: causes related to magic (*daño*) and witchcraft (traditional medicine) and causes associated with energy (Eastern or New Age thinking). Four patients said their relatives held these beliefs and said they did not hold the beliefs themselves. For example, Juan mentioned that his mother took him to a folk healer in Bolivia, her country of origin, because she believed that he had been cursed. Juan said he did not agree with her theory, but he agreed to go [1.15]. Ana mentioned that she believed in "certain things," but did not link these ideas to her illness. Her mother strongly believed she had been cursed [1.16]. Laura said the elders of her church thought she, too, was under a curse and carried out rituals to undo it [1.17]. Sonia said that several people had told her that her illness was the result of witchcraft. She said that she had visited healers in her country of origin, Paraguay, and in Argentina, but thought they were "all nonsense" because none of the rituals eliminated her illness [1.18]. Even though participants denied holding these beliefs themselves, each had been treated by traditional or religious healers.

Inés suggested her illness might have been produced due to negative energy in her home, after her grandmother's and father's death. In contrast to the other interviewees, she believed this hypothesis and said it was her own idea [1.19].

2.1.2. Prototypes

2.1.2.1. Epilepsy. Four of the interviewees explicitly used family members' or acquaintances' epilepsy as a prototype. Their descriptions of epilepsy were quite general, and they had a difficult time describing how epilepsy was similar to or different from their own illness. Long silences followed these questions. Because these patients had been treated and medicated for epilepsy for an average of 8.4 years, a belief that their illness was similar to epilepsy was expected.

Three patients focused on seizures and medication to illustrate their epilepsy prototypes. For example, Juan said a cousin of his had epilepsy and seizures and that he was taking medication [2.1]. Laura also compared her illness to a former brother-in-law's, focusing on the presence of seizures and the effects of medication. In fact, she attended the Epilepsy Center at her sister's suggestion [2.2]. Sonia said that a neighbour who had epilepsy fainted as she did [2.3]. However, she did not get hurt when she had an attack, as he did [2.4].

Ana made reference to her relatives' epilepsy, but could not describe their symptoms, because her grandfather had already died and she was not close to her aunt [2.5]. She also referred to an acquaintance's daughter who had uncontrolled movements and absences. The girl was thought to have epilepsy, as Ana had been diagnosed originally [2.6]. The comparison appeared to be guided by the diagnosis of epilepsy (as an illness label) and the medical treatment she had received, rather than by the causal explanations for the illness or an understanding of the nature of the disease.

2.1.2.2. Attacks. Three patients referred to having "attacks" similar to other people's experiences. The participants repeatedly used the term "*ataque,*" although it meant something different for each of them.

Sonia called her own episodes "attacks" [2.7]. She used the same term to refer to episodes that were followed by death, in the case of her mother [2.8], and her uncle, who died after a heart attack [2.9]. Laura used the term "attacks" for the episodes of crying and shaking that her father had when her own episodes began [2.10]. Inés referred to her brother's nervous breakdown (*ataque de nervios*) as an "attack" [2.11]. She also compared her current disease to other relatives' panic attacks [2.12, and to the panic attacks she had experienced before her seizures began [2.13].

2.1.2.3. "It was not epilepsy". Ana referred to a case similar to hers in which epilepsy was ruled out, wherein suspicions of epilepsy were related to the presence of similar symptoms (absences). She explained that this diagnosis was discarded after a traumatic event in the girl's childhood was identified [2.14].

3. Discussion

Each participant had a variety of speculations regarding their illness, reflecting the complexity of how PNES are experienced by patients. Several themes emerged, related to both explanatory models and prototypes.

3.1. Themes related to explanatory models

None of the patients reported an explanation that linked together their own or other peoples' perspectives and beliefs with regard to their illness. Karterud et al. [38] stated that the usage of a biopsychosocial approach to describe the aetiology of PNES can help patients accept the interaction between psyche and soma. In this manner, patients may identify the diagnosis as relevant to them and make associations between their seizures and their personal histories. The way the diagnosis is communicated is essential to help patients to establish these associations. Many authors [39–41] point out that the way neurologists communicate the diagnosis is a "stepping stone" [42] for a good outcome. In fact, Mayor et al. [40] reveal that a clear and supportive discussion of the diagnosis stops PNES in at least 15 to 30 percent of cases. One of the main limitations of the current study is the lack of a standard in how neurologists communicate the diagnosis. This could be significant, given the fact that the way neurologists convey the diagnosis might affect the way patients understand PNES and, therefore, their outcomes.

In general, studies report that patients have a difficult time accepting the psychological origin of PNES [22,43] and that they cling to biological explanations [44]. In this small sample, however, psychosocial causes were mentioned frequently. Psychotherapy is common in Argentina and, far from being stigmatized, is an openly accepted practice [45,46]. Such circumstances could favour the acceptance of psychological explanations. Previous experience with psychotherapy would probably make it easier to accept the idea of psychological causes of PNES and might enhance patients' ability to communicate emotional distress. An understanding of therapy could also help patients integrate the diagnosis into their personal narratives [15] or increase their feelings of being understood or believed by their healthcare providers [34,38].

Nevertheless, considering psychosocial factors as possible causes of disease does not necessarily mean accepting a psychiatric diagnosis [47]. Moreover, the labels doctors use to explain and name people's suffering have to be acceptable to patients [48]. As an example, one of our patients had a negative reaction to the doctor's diagnosis of "hysteria," possibly due to the negative connotation of "hysterical" as a derogatory description of women.

All participants mentioned traumatic events. This is consistent with studies on PNES that report a high rate of trauma among patients [49,50]. Even though the participants associated the onset of their seizures with psychosocial variables, they did not always link conflicts and violence with their disorder. A disconnect between traumatic events and current suffering has been reported in other patients with PNES [43].

Folk explanations were reported by all respondents. Patients referred to others' malignant intentions to harm them through magic (*daño*) and to witchcraft as a healing method. These ideas, linked to traditional medicine and shamanism [51], are similar to etiological theories for illness in some areas of Argentina and neighboring countries. It also highlights the importance of interpersonal relationships, religious beliefs and the sacred as perceived causes of disease [51,52]. The resistance of participants to openly agree with these ideas may relate to the cultural distance between professionals and patients, which can create conflicts in communication and care quality [28,53,54]. In Argentina, the majority of healthcare professionals belong to the urban middle class. Traditional medicine has a negative connotation among this population. Public hospital patients generally belong to low socioeconomic classes and, in many cases, are first- or second-generation immigrants from neighbouring countries. Therefore, patients may not feel comfortable openly acknowledging these beliefs and practices. This could reflect inequalities in Buenos Aires' health services as already acknowledged by other Argentine researchers [55,56]. On the other hand, the only interviewee who said her illness was due to "energy" believed in this theory, consistent with the fact that New Age and alternative therapies are more accepted by middle- and upper-middle class populations [57].

While there are cross-cultural studies that have investigated magic and witchcraft in epilepsy [58,59], we found no references to these domains in PNES studies. Studying these categories would allow other areas to be investigated, such as the role of traditional healers and how they might supplement healthcare providers [58], the reasons for the delay in treatment [60], and stigma [59,60]. These factors may have an impact on patients' health behaviours, especially in multicultural contexts.

3.2. Themes related to prototypes

Prototypes influence treatment expectations [33]; hence, it is essential to consider them to understand patients' therapeutic behaviours.

Epilepsy is a prototype reported in patients with PNES [33]. Semiological differences and similarities between epileptic seizures and PNES exist [61], although they are sometimes unclear to patients. In fact, none of the participants could explain the organic causes of epilepsy. This is possibly due to communication problems between professionals and patients [15,44], leaving patients without a clear understanding of epilepsy. This lack of comprehension of the aetiology of epilepsy has been reported in other studies [62].

Various participants used the expression *ataque* [attack] as a prototype, but the term implied different meanings for each subject: imminent death, mental disorders, or an idiom for distress [63]. This fact might be relevant, because studies conducted in other contexts [64] reported that the term *attack* was used by most patients as a synonym for *seizure*. This implies that prototypes may not be quite clear and may involve cultural and linguistic factors. Future research should investigate the meaning of each prototype for a better understanding of the patient's experience.

Finally, one patient, Ana, analogically related her experience to those of an acquaintance who had seizures due to childhood trauma. This prototype could hint at a possible agreement on the traumatic origin of seizures. Given that different authors emphasize the clinical relevance of traumatic events in PNES [50], this type of analogy could be useful in strengthening patients' understanding of the diagnosis when necessary.

4. Limitations

The sample size is not large enough to generalize our findings. In addition, since PNES is a complex heterogeneous experience [50,65], our participants may not be representative of others. The findings are consistent, however, with other work using a similar methodology [33,34].

Another limitation, as mentioned before, is that no guidelines were used to communicate the PNES diagnosis. In addition, no records were kept of these explanations. Nonetheless, all attending neurologists were epilepsy experts and had broad training in delivering differential diagnoses.

Efforts were made to minimize biases in data analysis through peer debriefing and discussion regarding the original materials [66]. Future research should also consider additional steps, such as checking with the original subjects to see if our interpretations squared with their intentions (member checking).

The hospital context may also affect the result of the interviews. Asymmetry of power between the interviewer and the interviewee in the biomedical environment could interfere with the patients' degree of openness in discussing beliefs about their health and illness, particularly with traditional explanations of illnesses.

5. Conclusion

This is the first qualitative study of the experience of patients with PNES in Buenos Aires. Our results suggest that these patients' illness perceptions are heterogeneous, both with regard to causal theories and illness models. Their explanatory models and illness prototypes express the cultural aspects of their social context. Most patients used psychosocial explanatory models; in contrast, in other studies, patients tend to favour somatic explanations. Our findings also highlight the use of folk and native beliefs related to traditional medicine in Argentina and its bordering countries. These ideas suggest that an interpersonal dimension is central for a better understanding of the illness; for example, a *daño* would be performed by someone who wanted to place a curse on someone else. This interpersonal context is absent from the biological explanations of disease.

Communication between patients and professionals is a major issue, because patients must understand PNES to obtain the best treatment outcomes. In addition, improving communication can minimize perceived inequalities in multicultural healthcare services.

Conflict of interests

We declare there are no conflict of interests.

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