Clinical Physiologists experiences of working with people with Non Epileptic Attack Disorder: A qualitative study

Olivia McNicholas

Sir Jules Thorn Telemetry Unit, The National Hospital for Neurology and Neurosurgery, University College Hospitals London NHS Foundation Trust, London, UK.

Helen Pryce*

Audiology Department, College of Health and Life Sciences, Aston University, Birmingham UK B47ET

*Corresponding author at Audiology Department, College of Health and Life Sciences, Aston University, Birmingham UK B47ET
0121 204 3000

h.pryce-cazalet@aston.ac.uk

Abstract

Objectives: To explore the perspectives of clinical physiologists on working with patients with Non-epileptic attack disorder (NEAD).
NEAD is a medically unexplained symptom frequently encountered by clinical physiologists in the field of neurophysiology. Studies in healthcare professionals show that they often find patients with medically unexplained symptoms challenging, uncomfortable, and frustrating to interact with. Clinical physiologists spend a substantial amount of time with patients and are key to the assessment of the condition. It is not known how physiologists experience working with patients with NEAD.

Methods: Semi-structured interviews were conducted with clinical physiologists who frequently work with these patients. Interviews were recorded, transcribed, and analysed according to grounded theory methodology.

Results: Twelve participants including current trainees and qualified clinical physiologists working in neurophysiology were interviewed for the study.
Participants described the experience of working with people with NEAD as anxiety provoking and unpredictable. The sources of this anxiety were the nature of the psychological aspects of the condition, the need to preserve professional boundaries and a lack of preparedness to manage conversations about distress or the psychological factors impacting the NEAD.

Conclusions: There is a risk that patient care is compromised by the lack of preparation and skills training of physiologists.

Practice Implications: Physiologists need further training in counselling skills to increase tolerance to emotionally laden content in patient accounts and knowledge of suitable referral routes.

Background

Medically unexplained symptoms are common in healthcare, with patients with medically unexplained symptoms accounting for 20-25% of all frequent attenders to medical centres, [1]. Healthcare professionals find patients who demonstrate these symptoms challenging, uncomfortable, and frustrating to interact with, [2]. Patients with medically unexplained symptoms feel disregarded and dismissed, [2].These negative relationships between healthcare professionals and patients ultimately have consequences on health outcomes, and can lead to worsening of the patients' symptoms [2, 3].

Non-epileptic attack disorder (NEAD) is a complex functional neurological condition characterised by clinical seizures which may be mistaken for epilepsy, [2]. Unlike epileptic seizures, non-epileptic attacks are not associated with abnormal electroencephalogram (EEG) changes, [4]. NEAD is classed as a medically unexplained symptom, and is believed to have a psychological origin, which manifests itself as somatic symptoms, [5]. NEAD poses a diagnostic challenge, with an average delay to diagnosis of 7.2 years,[6]. Approximately 20% of people with diagnosed epilepsy have concurrent non-epileptic attacks, which complicates the diagnostic process further, [6]. The gold-standard for diagnosis is simultaneous EEG and video recording during a typical clinical episode, [7]. These EEG recordings are performed by clinical physiologists, and due to the nature of the investigation, these healthcare professionals spend several hours with these patients, [7].

The current literature portrays negative interactions between patients with NEAD and healthcare professionals, [8]. A common misunderstanding of NEAD is that the patient has control over their seizures, and they are performed rather than genuine, [8]. Yon et al, (2015) explored junior doctor's experiences with managing patients with medically unexplained symptoms. An aspect of the study explored the doctor’s descriptions of the patients. Here they described patients as falling into different subtypes, with one subtype being individuals with 'made up' symptoms who sought personal gain, [9].

There is a lack of clear guidelines and education for the management of this patient group, [10]. The biomedical model of health is widely accepted in healthcare and is centered around biological explanations of illness, secondary to disease, [11]. It does not take into account psychological, environmental, and social influences on disease, [12].

Patients who experience NEAD often suffer from concurrent mental health problems, and often report a history of trauma and sexual abuse, [13]. Therefore, these patients may require more emotional support, and explanation than patients with a physical diagnosis, [9]

Most patients with NEAD will spend time with physiologists in their diagnostic work-up (1 hour plus).They may be closely monitored by physiologists several times a day over several days. Often patients undergo repeat investigations due to the diagnostic uncertainty of the condition, [7, 3]. This time provides an important opportunity for communication. It is important to understand what informs the way physiologists feel about working with this patient group, and if there are any barriers to the delivery of effective healthcare to these patients.

Objective

The aim of the research study was to examine the viewpoints, attitudes and beliefs of physiologists' who are experienced in working with patients with NEAD. Furthermore we aimed to explain the mechanisms that contribute to patterns of care.

Methods

Participants were recruited during the COVID-19 pandemic. The study was advertised through a poster on the Association of Neurophysiological Sciences (ANS) social media page, a group consisting of clinical physiologists and scientists in neurophysiology. Participants were asked to contact the researcher (OM) to express their interest in the study and to provide demographic details.

Twelve volunteers expressed an interest in the study, and some of their demographic details were collected. Grounded theory methodology prescribes a sampling approach to ensure that the constant comparison of accounts include a range of relevant features, [14, 15]. Firstly, purposive sampling aims to direct the generation of data by providing the maximum variation of participant experiences to answer the research question, [14, 15].

Our purposive characteristics were age, gender, training route and level of experience. In this case, seven volunteer participants were purposively sampled who provided this range of contrasting characteristics to enrich the data set (i.e. age 23-67; BSc (undergraduate), MSc (masters level), ECNE (a professional qualification), BTEC (business and technology education); current trainees, newly qualified, highly specialised and lead clinical physiologists), [14, 15].

After conducting and analysing seven interviews, five further participants were interviewed to clarify uncertainties and test developing theories i.e. participants with a greater number of years of experience were interviewed to clarify if their experiences were different, [14, 15, 17]. Additionally, a colleague in a non-UK based system was recruited to compare if their experiences contrasted to those in the UK, [17]. By the end of the study, all of the volunteers who expressed an interest were recruited as participants.

Due to the COVID-19 pandemic, interviews were performed over video-call software and telephone, or face to face (following social distancing guidelines) over a period of 7 months. An interview guide was prepared ahead of time (see figure 1) based on the findings of the studies conducted by Yon et al. (2015) and Brownell et al. (2016) on doctors and junior doctors' experiences of working with patients with medically unexplained symptoms, [9, 16]. The questions asked related to their experiences of working with these patients, their feelings of working with these patients, training they had received, how confident they felt when working with these patients, and recommendations for future training. Questions were then guided by the individual participant’s responses.

Figure 1: Interview questions.

- Tell me about working with people with medically unexplained symptoms.
- Can you share with me a memorable patient encounter you have had?
- Tell me about the training you have had for working with these patients.
- Do you feel comfortable with your skills in working with these patients?

**Questions were then asked to explore individual participant's responses in more depth – e.g.

- What was it like, hearing that from a patient? (when discussing an emotional patient history)
- How did you react when that happened? (when discussing a witnessed non-epileptic attack).
- What are the challenges in explaining this to a patient? (when explaining what NEAD is).

Interviews were audio-recorded with an encrypted dictaphone and transcribed verbatim by researcher (OM). To ensure anonymity, all personal identifiable information was removed at transcription and pseudonyms were assigned to each participant. Audio-recordings were deleted once they were transcribed and checked for accuracy by the researcher (OM).

Ethical considerations

This study was approved by the Aston University Research Ethics Committee on 2 June 2020 (REC REF: #1638). All participants were provided with a detailed participant information sheet, consent form and the contact details of the researcher (OM). Written informed consent was sought from the participants prior to the day of interview. Additional verbal consent was gained from the participants prior to initiating audio-recording.

Data Analysis

Grounded theory informed the use of theoretical sampling, constant comparison, coding and memo writing, [14].

There were three stages to the coding. Firstly, open coding of all content. This involved line by line analysis using the participants' own language ('in vivo ' codes) to form many codes which described the data set. The open codes were then grouped into broader thematic categories. To consider how these categories operate we grouped themes into a framework. This is in keeping with grounded theory methods [15]. We describe the process by which the phenomenon (experience of working with NEAD) occurs within a framework of pre-conditions and informed by context and action/interaction strategy and finally, as leading to consequences. Our categories were:

1. Pre-conditions – what experiences were in place that led to the phenomenon
2. The phenomenon itself – the experience of working with people with NEAD
3. The context within which this phenomenon occurred and which was critical to the interpretation of the experience
4. The action or interactional strategies that were described to modify the phenomenon
5. The consequences of the phenomenon.

Finally, in keeping with grounded theory approaches we examined the categories to consider whether there was a determining theme that impacted the phenomenon (experience) most substantially.

The categories were formed from different properties (sub-themes), and direct participant quotes were used to describe the dimensions of the categories. After each interview, themes were refined to mirror the properties and dimensions of the subsequent interviews. The transcripts were reviewed by two researchers (OM & HP) to check interpretations. The researchers compared their analysis to explore the data thoroughly. Each interview was transcribed and analysed prior to the next interview so that future interviews were directed based on the findings of previous interviews. This allowed interview questions to be adapted to explore promising topic areas directly in future interviews. The final descriptive framework was agreed by the researchers. A contrasting case was sought to test the developing framework, [18]. In this case an individual working in a different health system context was included to examine the themes against a different account.

Results

Participant Demographics

Twelve participants were interviewed for the study; these were all clinical physiologists with experience of working with patients with NEAD in UK neurophysiology departments. A mixture of current trainees and recently qualified, highly specialised and lead clinical physiologists participated. They were aged 23-67 (mean age 40) consisting of ten females and two males. All participants were strong English speakers and had the capacity to provide informed consent. Interview times ranged from 29-63 minutes (mean 46 minutes). Participant demographics can be seen in table 1. The participants consisted of a mixture of current trainees (band 6), recently qualified (band 6), specialised (band 7) and lead clinical physiologists (band 8).

Pseudonym	Age	Sex	Band	Training route	Description
Rachel	26	F	6	MSc (STP)	Rachel is a newly qualified clinical scientist in neurophysiology who completed a masters level postgraduate training route. She described emotional encounters she has had with these patients and the impact this has on her, and expressed frustration towards her lack of training when working with these patients.
Clara	31	F	7	BSc + MSc	Clara is a highly specialised clinical physiologist in neurophysiology with 8 years of experience. She trained abroad before moving to the UK to work. She feels unprepared when working with these patients and is concerned about the lack of awareness and guidance available when working with patients with medically unexplained symptoms.
Peter	65	M	8	ECNE + MSc	Peter has worked in neurophysiology for 45 years. After being a lead clinical physiologist in the UK, he moved abroad to manage his own practice. He has many years of professional and life experience which he said is beneficial when working with these patients.
Lottie	23	F	6	MSc (STP)	Lottie is currently completing postgraduate training in neurophysiology. She discussed feeling uncomfortable working with these patients and uses avoidance as a strategy. She reflected on gaps in her training in having discussions around previous trauma and mental health and does not feel prepared to have these conversations.
Eleanor	67	F	8	ECNE	Eleanor is a previous service manager with over 50 years of experience in the NHS. She described feeling comfortable and confident working with these patients due to her many years of experience both in neurophysiology and in life. However, she expressed concerns around overstepping professional boundaries.
Sophie	24	F	6	MSc (STP)	Sophie is a currently completing postgraduate training in neurophysiology. She reported feeling unconfident and unprepared when working with these patients. Additionally, she expressed uncertainties as to how to help these patients further in the limits of her role.
Flora	29	F	6	MSc (STP)	Flora is a qualified clinical scientist with 7 years of experience in neurophysiology, having completed her postgraduate training. She described mixed feelings of working with these patients; some she finds interesting due to the psychological nature of the events and others she described as frustrating to work with due to time pressures.
Michelle	42	F	8	BTEC	Michelle is a lead clinical physiologist with 26 years of experience in neurophysiology. She described a change in feeling towards working with these patients throughout her career, from originally believing that these patients were faking these events to now appreciating the psychological element of the condition.
David	35	M	7	BSc + MSc (STP)	David is a clinical physiologist who completed both the undergraduate and postgraduate training routes. He expressed feelings of frustration on behalf of the patients as he believes a more specialist approach is required for them.
Janet	52	F	8	BSc + ECNE	Janet is a lead clinical physiologist with 30 years of experience in neurophysiology. She described working with these patients as challenging due to the extra support and reassurance that some patients may require.
Kate	51	F	7	BTEC + ECNE	Kate is a highly specialised clinical physiologist and the lead for long-term monitoring at her trust with over 30 years of experience. She reflected on time and resource pressures when discussing these patients and how these can be challenging.
Bella	37	F	7	BSc	Bella is a highly specialised clinical physiologist with 14 years-experience in neurophysiology currently leading the long-term monitoring service at her trust. She reflected on a feeling of unpreparedness and a lack of support in working with these patients. Additionally, she described concerns around negative reactions from the patient when explaining about the psychological causes of the symptoms.

Table 1: Participant demographics (note: pseudonyms were used for all participants).

To describe the framework and process by which the experiences of working with people with NEAD occur we have described the central phenomenon first and then present tabulated descriptions of the pre-conditions, context, strategies and consequences of the phenomenon.

The phemomenon – the experience of working with NEAD

Physiologists described the presentations of NEAD as unpredictable and anxiety provoking due to the increased frequency of the seizures compared to epileptic seizures. Physiologists worry that they will have a seizure in the department. Bella explained that she ' still gets that nervous feeling' when she witnesses an event, and described the attacks as 'daunting' and 'frightening'. The physiologists are left with a feeling of professional insecurity and uncertainty if they have fulfilled their professional role, 'you feel like you want to do more for them' (Bella); ' we still see them, and I think we should learn more about them so that we know how to deal with them properly'. (Lottie). 'you never really quite know what to expect' (Flora). 'The only thing with non-epileptic and query non-epileptic is you kind of worry that they're going to have an event. Which isn't nice for anything. It isn't nice for them, it isn't nice for their family, and it isn't nice for me' (Sophie).

The anxiety was also associated with the psychological aspects of the condition 'In the psychiatric world there's so much out there that we don't know, and the doctor's don't know, no one knows and there's no specific treatments, there's no diagnosis… and that's a tricky situation' (Clara).

Psychological distress might be communicated during a test. 'Patients reveal huge amounts of very sensitive emotional stuff' (Peter). This has an emotional impact on them, with Rachel describing a patient encounter as 'one of the hardest days' as the patient 'made quite a disclosure to me that was quite traumatic from her past'.

The anxiety was also around overstepping professional boundaries, with physiologists feeling powerless in their role when providing support for these patients. Bella stated that 'it's difficult to judge what you can actually do ...you want to do what's best for the patient but you've got to take a step back and see if it's your place'. This feeling of being powerless was further represented by David; ' I guess in our role as a clinical physiologist we've got very limited things we can do really, apart from a range of EEGs...we certainly can't suggest anything extra ' (David). 'I've always had a little bit of anxiety about boundaries ...I've got a lot of life experience, a lot of resources, and you know, it feels wrong for me to withhold that' (Eleanor). The anxiety is part of feeling unprepared when working with patients with NEAD. Lottie described her initial thoughts and feelings when encountering a patient, 'I think the very first thing I feel is oh gosh, what should I do? I feel a bit nervous, how should I approach the patient? How should I start testing?'.

The framework

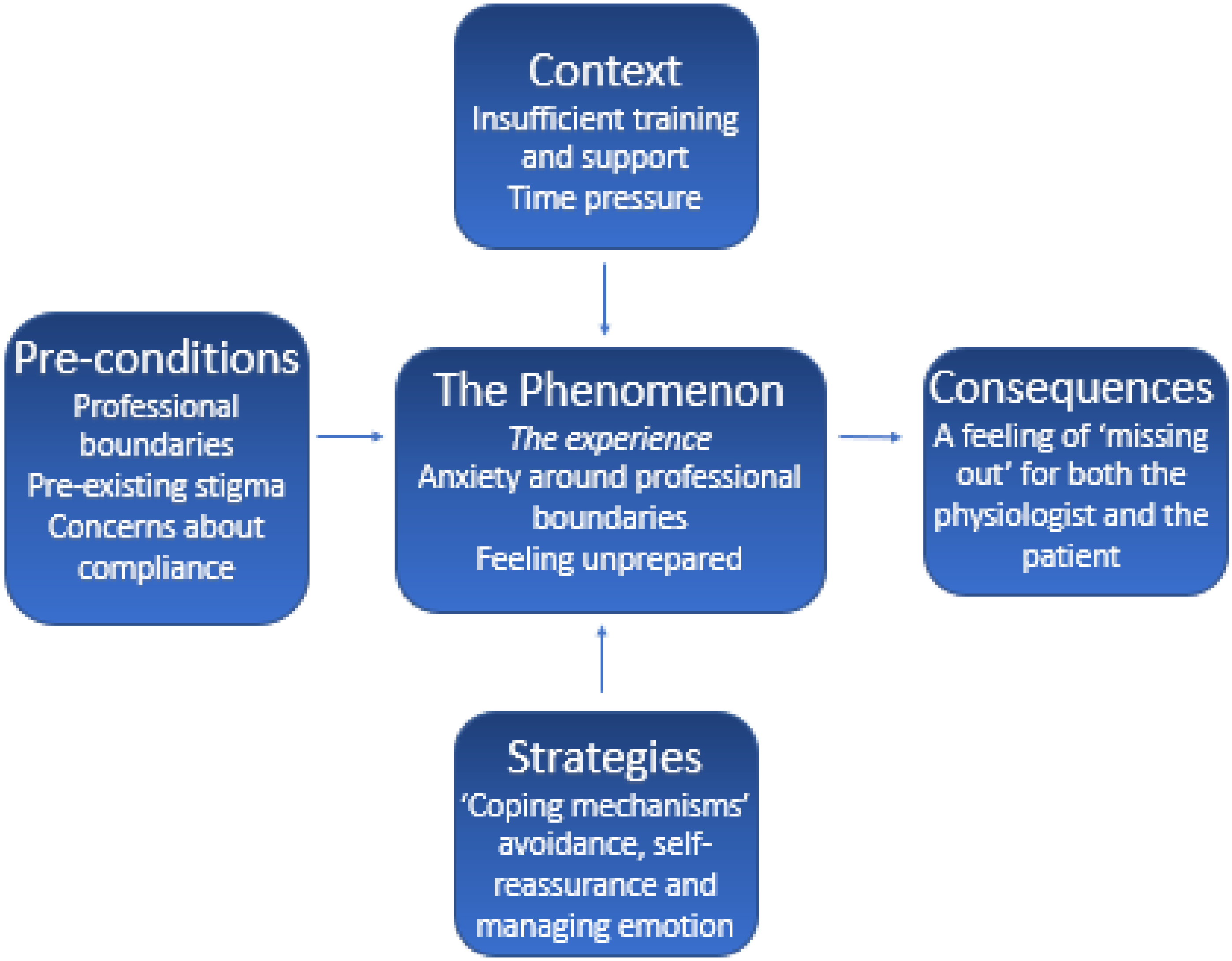

Figure 2: A framework to understand the clinical physiologists' perspectives of working with patients with non-epileptic attack disorder.

To develop a theoretical understanding of these reactions, we examined the process by which the experiences of working with people with NEAD are formed and maintained. The ‘pre-conditions’ here refer to some of the salient factors that participants describe as causes of the experience. The pre-conditions here are professional boundaries and the insecurities about the clinical role; the stigma towards medically unexplained conditions that inform the individual views; the concerns about compliance and the time pressures people are working under.

Table 2 Pre-conditions that influence the experience.

Pre-condition Theme	Properties of the theme	Illustrative quotations
Professional boundaries	Tension between diagnostic and support roles in clinical care Sense that diagnostic role should be paramount	'we are scientists, we shouldn't really be doing this' (Clara)
	Dilemma between diagnostic tasks and need to provide care	'I had a patient who again was sort of disclosing some things to me, really upsetting, and normally I am sat, you know, quite a way away from the patient, by the EEG, watching the EEG, and I just felt for this one I just needed to go and sit with her and hold her hand but I was like, is this ok? Because I should be watching the EEG' (Rachel)
Pre –existing stigma	Suspicion that patients control their attacks Clinical tools hold superior interpretation	'if they had any understanding of the EEG, you think they wouldn't do it, because it catches them out' (Eleanor).
	The invisibility of symptoms make them less credible.	‘I feel like you're much more patient with someone that's got a very clear disability or illness …when its medically unexplained, I think it's a little bit harder to make those exceptions' (Lottie).
	Suspicion that symptoms are exaggerated	'sometimes you're thinking no, you're absolutely fine here, you could get up, you really could....your sympathy can sometimes wain a bit on that'(Kate)

	People who present with NEAD are doing so for secondary gain	'that's horrible to say but there are people who take advantage and abuse the system…they get away with loads of things' (Bella).
concern about compliance	Patients are less willing to be helped	'...whereas the NEAD ones tend to come with a lot more complex, just around it, there can be a lot more effort involved even just to get them to come to the appointment. they will throw up barriers on why they can't come, why they shouldn't come why they've got to be treated differently ... you make those changes to facilitate as much as you can to get them to come' (Janet)
	These patients need more support	'They wanted a lot more reassurance. They wanted a lot more explanation' (Janet)
		'I had a lady that, I can't even remember the name of the sort of anxiety disorder she had, but she was sort of very distressed as she came into the appointment, and it was sort of very challenging to even get her into the room, let alone have the test done' (Rachel).
Time Pressure.	The risks of attacks increase during clinical encounters – these can cause delays.	'although it's the job, you never want anybody to actually have a seizure, a) for them...but equally it's sort of time pressures with sort of being, not unkind, but when you've only got an hour to do a test, the time pressures are challenging' (Kate)

The broader context that explains how these pre conditions arise and how the phenomenon occurs. The lack of training and support in how to have conversations that might involve either discussing medically unexplained symptoms or elicit distressing personal histories are attributed as creating the later discomfort in clinical encounters.

Table 3 Context that influences the experience - Insufficient Training.

Context theme	properties	Illustrative quotations
Insufficient training	Lack of any formal training or teaching on the topic of medically unexplained symptoms or NEAD, despite all encountering these patients consistently throughout their careers.	' I can't really think of a single time that we've ever had any training or any conversation on what to do if a patient has a non-epileptic attack' (Rachel)
		'it's probably like a vicious circle, I wouldn't feel confident going and teaching anyone about non-epileptic attack disorder because I've not received the training' (Rachel).
		'experiential learning is the most effective ...it isn't something we are trained in. It's something we learn almost osmotically, organically, by experience watching over people' (Eleanor).
	The gap is in communication skills	'I know what to do with the EEG, I know how to keep that running , I know how to fix the wires, but how to actually talk to someone and make them feel ok, that can be quite hard' (Rachel).
		'not really about difficult conversations and how you handle that, you know, when you are talking to patients. I don't think training in the NHS is geared up to that' (Michelle)
		'The more skills you have in interaction and the more comfortable you are with managing difficult conversations, the

		better' (Eleanor).
	This inhibits conversation and physiologists do not ask about past history for fear of causing emotional distress.	'I just think at the moment I'm not really... I'm not trained. I wouldn't want to put myself in a position like that' (Lottie).
Insufficient Support	The lack of clear guidance in training continues into lacking clarity in how to signpost patients for further help	'I think again that is something that we could have more support for in the hospital, like how to deal with someone who might offload quite a load of trauma ' (Lottie).

In order to cope with the uncertainties in the clinical experience participants describe a range of coping strategies.

Table 4 Strategies: Physiologists describe using coping mechanisms

Strategies themes	Properties	Illustrative quotations
Avoidance	Avoid discussing past histories	'I don't want to upset anyone. Like if one of their triggers is talking about this really horrible event, I would not ever want to talk about it with them because I don't feel comfortable doing that' (Lottie).
	Avoid discussing possible diagnosis and reasons behind symptoms	'I think for me it would probably be daunting to, I'd have this conscience on my head I think, that you know, how is the patient taking it?' (Bella).
	To discuss psychological causes could be stigmatizing.	'never hint it could be psychological' (Sophie)
Self-reassurance	Physiologists respond to the difficult stories and distress described by NEAD patients by reassuring themselves	'you're sort of thinking, no it's fine, what I'm doing is fine' (Janet)

		‘sometimes you do have to go, no, you can do this, you're alright'(Kate)
		'sometimes we hear very sad stories and that makes you think. And then you come home, and you bring that home with you. I've bought that home with me many times and I feel that. it consumes me a little bit…but I try to push that aside and move on with my life because my life continues and if I see that patient again that might...you know those feelings might come again but again you need to push that aside’ (Clara)
		'some stories take a bit longer to get over, but ultimately you develop your own coping mechanisms over the years' (Kate).

The consequences of these experiences are a risk that patients miss out on appropriate care. The resistance to discussing the possible psychological causes or managing distress mean that there is a recognised risk of patients be re referred into the system at a later time.

Table 5 Consequences – missing out on care

Consequences themes	Properties	Illustrative quotations
Missing out on care	The physiologists described feeling insecure and uncertain whether they had done a good job, and if there was more than could have been done.	Patients are ‘missing out on a diagnosis’ (David)
	Referring on – the risk of being re referred	'if she gets referred to another neurologist at some point, I'm sure they will also get

		nervous and think of sudden unexplained death in epilepsy and we will probably get another referral' (David)
Vicious circle	Not having answers makes symptoms harder to live with	'if you have this and you don't have the right kind of intervention you know, you might have more attacks' (Clara).
	Diagnosis does not lead to appropriate intervention	'I do think in general the system doesn't work very well for them at all. I don't know how anyone in our position would fix that …it's interesting the amount of patients that, even though we've told the doctors that it's non -epileptic when we report them, are still on anti-epileptics when they come back a few years later...what's the point? Why am I doing this if they're not going to be treated properly?' (Flora)

Discussion

This research aimed to address the gap in the knowledge of how clinical physiologists feel about working with patients with NEAD. In line with previous research, [9, 16, 19, 20], the findings reflected negative experiences of the physiologists and the challenges they faced when working with these patients. These negative experiences were multi-factorial; beginning prior to the patient encounter, where physiologists described insecurity and uncertainty around their professional boundaries and role. Physiologists in the UK reported insufficient training and support when managing these patients, and described a set of patients which confound the typical patient model they expected to encounter. Time constraints, patient barriers, and family involvement contributed to this experience, which hindered their ability to perform a successful diagnostic test. The physiologists employed coping mechanisms when interacting with these patients, such as avoidance, self-reassurance and managing their own emotion. Ultimately, physiologists were left with a feeling of professional dissatisfaction; both with their own performance and concerns for the management of these patients.

These problems derived from uncertainties around physiologists’ professional boundaries from the role as the diagnostic scientist to providing support. People working in healthcare often naturally take on the role of the helper, and therefore face a tension in their values when faced with these professional boundaries, [21]. In some accounts, this anxiety around overstepping boundaries appeared to take priority over the patient care itself, with physiologists stating that they wanted to do more for the patient. Fear of 'overstepping the mark' resulted in the uncertainty of clinicians to their own scope of practice. This consequently had further impacts on the quality of patient care given, [22, 23].

Several physiologists believed the patients purposively induce their events for secondary gain such as attention or additional monetary support. This resulted in physiologists reporting that they felt less sympathetic towards patients with NEAD. Unfortunately, this is a common misunderstanding shared by healthcare professionals, and can potentially have an adverse impact on the patients they are working with, [8, 9, 24]. It is evident that awareness of the psychosomatic manifestations of disease and addressing stigma amongst healthcare professionals is required.

Peter is noteworthy as a contrast as his experiences and views differed from the other participants in the study, [17, 25]. Peter has previously worked in the UK system but now manages his own service in Australasia and is involved in the whole patient pathway, 'we deal with the patient right through the whole scheme and it's really good because, especially in cases like functional disorders, it means that because we are also dealing with the patient as a clinician, we have a bit more authority to dig in and talk to them about stuff that we would probably not talk about in the UK'. He has taken on extra courses in counselling and communication and feels confident with his skills in having sensitive conversations with patients due to his established support networks, 'I know a bunch of counsellors who are all good at particular things...you need to have that network if you're going to get into some of these discussions with the patient'. Peter also compared his current practice with prior NHS experience 'it was sort of an accumulation over the years of realising that quite a lot of the work we do was…

we weren't really achieving anything for the patient' . This contrasting report confirmed the themes as salient. It seemed that the increased training, broader role expectation and increased time to care helped his professional experience to differ from the UK sample.

This was the first in-depth qualitative study exploring the perspectives of clinical physiologists when working with patients with NEAD. The use of interviews strengthened the richness of the data, as real-life descriptions and accounts were given by the physiologists. A strong variation in participant demographics, ranging from current trainees to lead physiologists was achieved. The framework was explored further by contrasting the experiences of a different health system. This contrast highlighted the need for broader training in the UK, particularly in counselling and communication skills. In addition it is important to note that qualified physiologists do not directly work under supervision and thus do not discuss communication or ways of managing patient distress with colleagues.

Healthcare professionals share similar experiences when working with patients with NEAD, regardless of their professional role. This study identified novel findings in the area. The tension physiologists perceived of overstepping their professional boundaries into the remit of the consultant appeared to be of greater concern than the patient care. Additionally, this study identified self-reassurance and managing emotion as coping strategies when working with these patients, revealing the requirement for additional support for the physiologists. These negative interactions may hinder the quality of the healthcare provided to these patients. Previous research has shown that patients with NEAD reported challenging relationships with healthcare professionals, [27, 2]. This consequently discouraged them from seeking help, [2]. Therefore, it is imperative this patient care is improved.

Practical value

Based on the findings of this study, it is evident that there is a training requirement for physiologists when working with these patients. Physiologists require further support and guidance when managing non-epileptic attacks.

References

[1] Jadhakhan F, Lindner OC, Blakemore A, Guthrie E. Prevalence of medically unexplained symptoms in adults who are high users of health care services: a systematic review and meta-analysis protocol. BMJ Open. 2019 Jul 2;9(7):e027922. doi: 10.1136/bmjopen-2018-027922.

[2] Robson C, Lian OS. " Blaming, shaming, humiliation": Stigmatising medical interactions among people with non-epileptic seizures. Wellcome Open Res. 2017 Oct 24;2:55. doi: 10.12688/wellcomeopenres.12133.2.

[3] Chew-Graham CA, Heyland S, Kingstone T, Shepherd T, Buszewicz M, Burroughs H, Sumathipala A. Medically unexplained symptoms: continuing challenges for primary care. Br J Gen Pract. 2017 Mar;67(656):106-107. doi: 10.3399/bjgp17X689473.

[4] Shneker BF, Elliott JO. Primary care and emergency physician attitudes and beliefs related to patients with psychogenic nonepileptic spells. Epilepsy Behav. 2008 Jul;13(1):243-7. doi: 10.1016/j.yebeh.2008.03.001.

[5] Sheldon, R., & Agrawal, N. (2019). Functional non-epileptic attacks: Essential information for psychiatrists. BJPsych Bulletin, 43(4), 182-187. doi:10.1192/bjb.2019.34.

[6] El-Naggar H, Moloney P, Widdess-Walsh P, Kilbride R, Delanty N, Mullins G. Simultaneous occurrence of nonepileptic and epileptic seizures during a single period of in-patient video-electroencephalographic monitoring. Epilepsia Open. 2017 Sep 1;2(4):467-471. doi: 10.1002/epi4.12071.

[7] Kandler, R., Lawrence, S., Pang, C., Lai, M., & Whitehead, K. (2018). Optimising the use of EEG in non-epileptic attack disorder: Results of a UK national service evaluation. Seizure, 55, 57–65. https://doi.org/10.1016/j.seizure.2018.01.005.

[8] Dickson JM, Peacock M, Grünewald RA, Howlett S, Bissell P, Reuber M. Non-epileptic attack disorder: the importance of diagnosis and treatment. BMJ Case Rep. 2017 Mar 1;2017:bcr2016218278. doi: 10.1136/bcr-2016-218278.

[9] Yon K, Nettleton S, Walters K, Lamahewa K, Buszewicz M. Junior doctors' experiences of managing patients with medically unexplained symptoms: a qualitative study. BMJ Open. 2015 Dec 1;5(12):e009593. doi: 10.1136/bmjopen-2015-009593.

[10] Tolchin B, Baslet, G, Dworetzky, B. Psychogenic seizures and medical humor: Jokes as a damaging defense. Epilepsy & Behavior. 2016 Nov 64: 26-28. doi:10.1016/j.yebeh.2016.09.016.

[11] Wade DT, Halligan PW. Do biomedical models of illness make for good healthcare systems? BMJ. 2004 Dec 11;329(7479):1398-401. doi: 10.1136/bmj.329.7479.1398.

[12] Farre A, Rapley T. The New Old (and Old New) Medical Model: Four Decades Navigating the Biomedical and Psychosocial Understandings of Health and Illness. Healthcare (Basel). 2017 Nov 18;5(4):88. doi: 10.3390/healthcare5040088.

[13] Beghi M, Beffa Negrini P, Perin C, Peroni F, Magaudda A, Cerri C, Cornaggia CM. Psychogenic non-epileptic seizures: so-called psychiatric comorbidity and underlying defense mechanisms. Neuropsychiatr Dis Treat. 2015;11:2519-2527 https://doi.org/10.2147/NDT.S82079.

[14] Strauss, AL, Corbin, JM. Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory. 2nd ed. Thousand Oaks, CA: Sage Publications Inc. 1998. ISBN O 8039 5939 7.

[15] Corbin, J, Strauss, A. "Basics of Qualitative Research." Techniques and Procedures for Developing Grounded Theory-. 3rd ed. London: SAGE. 2008.

[16] Brownell AK, Atkins C, Whiteley A, Woollard RF, Kornelsen J. Clinical practitioners' views on the management of patients with medically unexplained physical symptoms (MUPS): a qualitative study. BMJ Open. 2016 Dec 21;6(12):e012379. doi: 10.1136/bmjopen-2016-012379.

[17] Corbin, J, Strauss, A. Grounded Theory Research: Procedures, Canons, and Evaluative Criteria. Qualitative Sociology. 1990; 13:3-21.

[18] Hanson, A. (2017). Negative Case Analysis. The International Encyclopedia of Communication Re- search Methods. https://doi.org/10.1002/ 9781118901731.iecrm0165 .

[19] Howman M, Walters K, Rosenthal J, Ajjawi R, Buszewicz M. "You kind of want to fix it don't you?" Exploring general practice trainees' experiences of managing patients with medically unexplained symptoms. BMC Med Educ. 2016 Jan 25;16:27. doi: 10.1186/s12909-015-0523-y.

[20] Hanssen DJC, Ras A, Rosmalen JGM. Barriers and facilitators to the implementation of interventions for medically unexplained symptoms in primary care: A modified Delphi study. J Psychosom Res. 2021 Apr;143:110386. doi: 10.1016/j.jpsychores.2021.110386.

[21] Smith, M, K. (2008) 'Helping relationships', The encyclopaedia of pedagogy and informal education. [www.infed.org/mobi/helping-relationship-sprinciples-theory-and-practice/. [accessed 2 March 2021].

[22] Milson-Hawke S, Higgins I. The scope of enrolled nurse practice: a grounded theory study. Contemp Nurse. 2004 Jul-Aug;17(1-2):44-62. doi: 10.5172/conu.17.1-2.44.

[23] Niezen MG, Mathijssen JJ. Reframing professional boundaries in healthcare: a systematic review of facilitators and barriers to task reallocation from the domain of medicine to the nursing domain. Health Policy. 2014 Aug;117(2):151-69. doi: 10.1016/j.healthpol.2014.04.016.

[24] McMillan KK, Pugh MJ, Hamid H, Salinsky M, Pugh J, Noël PH, Finley EP, Leykum LK, Lanham HJ, LaFrance WC Jr. Providers' perspectives on treating psychogenic nonepileptic seizures: frustration

and hope. Epilepsy Behav. 2014 Aug;37:276-81. doi: 10.1016/j.yebeh.2014.07.001.

[25] Mays N, Pope C. Assessing quality in qualitative research BMJ 2000; 320 :50 doi:10.1136/bmj.320.7226.50.

[26] Glaser, B, Strauss, A. The discovery of grounded theory: strategies for qualitative research. Chicago: Aldine.1967.

[27] Rawlings GH, Reuber M. What patients say about living with psychogenic nonepileptic seizures: A systematic synthesis of qualitative studies. Seizure. 2016 Oct;41:100-11. doi: 10.1016/j.seizure.2016.07.014