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- **1** Barriers & enablers to providing community-based occupational therapy to
- 2 people with Functional Neurological Disorder: An interview study with

3 occupational therapists in the United Kingdom

- 4
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26 **Research Ethics**

- 27 Approved by the School of Health Sciences Ethics Committee, City University of
- London (REC reference number: MRes/16-17/10) on the 24 February 2017 and
- 29 appropriate local authorities.
- **Declaration of conflicting interests:**
- 31 None
- 32 Contributorship
- 33 CN was the primary investigator for this study, researched the literature and applied
- 34 for ethical approval. CN, FL, JF contributed to the methodology. CN and FL

- 1 interpreted the data. CN wrote the first draft of the paper. All authors reviewed and
- 2 edited the manuscript.

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1 INTRODUCTION

Functional Neurological Disorder (FND), also known as conversion disorder, is 2 characterised by altered sensory or motor function that is inconsistent with known 3 structural neurological disease (Espay et al., 2018). Symptoms are diverse and may 4 include movement disorder, weakness, sensory symptoms, cognitive dysfunction and 5 dissociative seizures (Stone, 2009). Functional symptoms are common, with an 6 estimated 30% of neurology outpatients and 10% of neurology inpatients presenting 7 with symptoms that are 'somewhat or not at all explained by disease' (Stone et al., 8 2010). The symptoms of FND can be highly disabling and are associated with high 9 levels of distress, reduced quality of life and high health and social care utilisation 10 (Carson et al., 2011; Gelauff et al., 2019; Merkler et al., 2015). 11

Inpatient multi-disciplinary (MDT) rehabilitation involving occupational therapy is 12 currently considered the gold standard treatment for FND. There is growing evidence 13 to support this treatment approach, which includes several large cohort studies 14 15 (participant numbers 26–78) (Demartini et al., 2014; Jacob et al., 2018; McCormack et al., 2014; Saifee et al., 2012) and a small randomised study (n=60)(Jordbru et al., 16 2014). Yet, there are limitations to inpatient MDT rehabilitation for FND. Inpatient 17 settings do not suit all individuals; inpatient rehabilitation is costly, resource intensive 18 and in the UK, it is oversubscribed resulting in long waiting times. An alternative 19 treatment model is outpatient and community-based therapy, which has the advantage 20 of lower costs. However, evidence for occupational therapy in this context is lacking; 21 anecdotally clinicians can lack experience, confidence and expertise in FND with many 22 community occupational therapists working in isolation with reduced MDT support. 23

24 People with FND are commonly seen by neurological occupational therapists in the UK and abroad in a variety of settings (Gardiner et al., 2018; Paget and Rigby, 1996; 25 Ranford et al., 2020a), but little is known about the experiences or interventions of 26 occupational therapists working in community settings. A systematic review of studies 27 of physical interventions for people with FND from 2013 found no examples of 28 occupational therapy or home-based treatments (Nielsen et al., 2013). Our search of 29 the literature for examples of barriers / enablers to community occupational therapy 30 practice for people with FND found only a single case study from 1996. This paper 31 described ongoing compensation claims and non-acceptance of the diagnosis as 32 barriers to therapy engagement in a patient with functional overlay following traumatic 33

brain injury (Paget and Rigby, 1996). Barriers to the treatment of people with FND in 1 settings other than the home have been identified by other health care professionals, 2 and have relevance to occupational therapy practice. Perceived barriers include lack 3 of knowledge of the condition and its treatment; stigma about the diagnosis; reduced 4 5 confidence in discussing psychological aspects of the diagnosis; reduced access to mental health support and lack of continuity of care from hospital to community 6 7 environments (Ahern et al., 2009; Barnett et al., 2021; Demartini et al., 2014; Edwards et al., 2012; Kanaan et al., 2009; Nielsen et al., 2018). 8

Despite the growing recognition of the role of occupational therapy in FND, the lack of 9 published guidance and limitations of community therapy frameworks leave many 10 services feeling unable to accept referrals (Barnett et al., 2020; Demartini et al., 2014). 11 12 As a result, a large group of patients with high levels of distress and disability are unable to access treatment. We therefore sought to explore the barriers and enablers 13 14 to delivering community-based interventions to people with FND, from the perspective of neurological occupational therapists in the UK. This exploration was supported by 15 the application of a behavioural science framework; the Theoretical Domains 16 Framework (TDF) (Phillips et al., 2015). The TDF provides a framework in which 17 influences on behaviour (delivery of occupational therapy intervention) and behaviour 18 change (changes in clinical practice) can be systematically explored. Published 19 descriptions of occupational therapy interventions for FND are limited (Gardiner et al., 20 2018; Nicholson et al., 2020; Ranford et al., 2020a, 2020b) and it remains unclear as 21 to whether occupational therapy interventions vary between practice settings, hence 22 this study also sought to review the practice of neurological occupational therapists 23 working in community settings. 24

25

26 METHODS

27 Research Design

This was a UK based, qualitative, semi-structured interview study modelled on the Theoretical Domains Framework (TDF) (Michie et al., 2005).

The TDF is a behavioural and implementation science framework that synthesises constructs from 33 behaviour change theories into 12 theoretical domains, representing the range of individual, sociocultural, and environmental influences of

behaviour and behaviour change (e.g. knowledge, motivation and goals, beliefs about 1 capabilities, social influences, social identity/role) (See Table 1) (Francis et al., 2012; 2 Roberts et al., 2016). Applying the TDF during data collection enables a systematic 3 and comprehensive exploration of possible influences on practice and provides a 4 5 systematic method for selecting change strategies to support change to clinical practice (Phillips et al., 2015). The TDF has informed data collection and analysis for 6 7 a number of international studies exploring the barriers and enablers to healthcare professional behaviour change across a range of clinical contexts, including 8 9 occupational therapy (Francis et al., 2012; Sakzewski et al., 2014).

10 Materials

The interview topic guide was based on the TDF and was informed by the researchers' 11 12 (CN) clinical knowledge and experiences as an occupational therapist working with people with FND and was developed in collaboration with behavioural scientists (FL, 13 JF). The target behavior of interest was the delivery of community-based neurological 14 occupational therapy for people with FND. The topic guide includes at least one 15 question per domain of the TDF. Table 1 presents definitions of each domain alongside 16 an example question for each domain. Flexible open-ended follow up questions and 17 prompts were used to further elaborate upon participant responses. The topic guide 18 was piloted with three community neurological occupational therapists and refined to 19 ensure question clarity and flow. The final interview guide is available in supplementary 20 21 file 1.

TDF Domain	Domain Content	Exemplar Interview Question			
Knowledge	Knowledge (including knowledge about condition / specific rationale) Schemas + mindsets + illness representations Procedural knowledge	Could you tell me what your understanding of the diagnosis of FND is and how you have developed this understanding?			
Nature of Behaviours	Routine / automatic / habit Direct experience / past behaviour Representation of tasks	What sort of interventions do you routinely use with people with FND in the community?			
Social / Professional Role & Identity	Professional identity, boundaries & roles Group / social identity Alienation / organisation commitment	As a neuro OT to what extent do you consider providing therapy to people with FND to be part of your role?			

22 Table 1. Example of interview questions allocated to the TDF domains (Atkins et al., 2017)

Social Influences	Interpersonal interactions that can influence clinicians' thoughts, feelings and behaviours. Social support Team working Supervision, learning and modelling Inter-group conflict	Do you feel any pressure from internal or external colleagues to accept or decline referrals for people with FND?
Emotion	Emotions and reactions experienced by the clinician in relation to their working role.	Do you enjoy working with people with a diagnosis of FND?
Memory, Attention & Decision Making	Memory Attention Decision making (factors influencing decision making)	As an OT how do you decide what to work on with the patient? Do you follow a sequence of steps?
Beliefs About Capabilities	Self-efficacy Perceived Competence (of self & others) Optimism / pessimism	As an OT how easy or difficult do you find it to provide OT to people with FND?
Beliefs About Consequences	Outcome expectancies Perceived risk / threat / benefit Attitudes Appraisal / evaluation	If people with FND were not able to access OT services in a timely fashion what do you think might happen?
Skills	Competence / ability, skills assessment Interpersonal skills (including written & verbal communication skills) Coping strategies	What do you think are the specialist skills or knowledge that are important for OTs to have when working with people with FND?
Motivation & Goals	Goal setting / targets Intrinsic motivation Commitment (commitment to achieving set goals)	Compared to other things you have to do as part of your role, where would you rank providing OT to people with FND in terms of priority?
Environmental Context and Resources	Resources / material resources Environmental stressors, constraints or facilitators Organisation culture / climate	What resources do you feel are necessary to provide quality therapy to people with FND in the community?
Behavioural Regulation	Reflexivity Feedback (given or received) Moderators of intention – behaviour gap Guidelines / Evidence Base Barriers / facilitators	How is your approach to treating people with FND different to what you may use when treating someone with another neurological condition e.g. MS or stroke?

2 Participants and Sampling

Participants were neurological occupational therapists experienced in providing 1 treatment for people with FND in the community in the UK. Those without experience 2 or who were unable to read and write in English were excluded. Purposive sampling 3 via the Royal College of Occupational Therapists (RCOT) Specialist Section for 4 5 Neurological Practice (SSNP) was undertaken. The RCOT SSNP is a special interest group which had approximately 950 members at the time of recruitment. The use of 6 7 RCOT SSNP UK members aimed to capture occupational therapists with various levels of experience and ensured that data could be gathered from across the UK. 8 9 Based on recommendations for sample sizes in qualitative research (Francis et al., 2010), an initial sample of 10 participants were recruited. Following analysis of the first 10 10 participants, the initial data set was assessed for thematic saturation. If no new 11 themes emerged, data saturation was deemed to be achieved and no additional 12 participants would be recruited. If saturation was not achieved, a further three 13 participants would be recruited, saturation re-assessed, in an iterative manner until 14 saturation was reached. 15

16 **Procedure**

An email invitation to participate in a 60-minute telephone or face-to-face interview 17 and a participant information sheet was sent by the RCOT SSNP to all registered 18 members. Interested participants were asked to contact the researcher, at which time 19 their eligibility for participation was confirmed. Those meeting the inclusion criteria 20 completed a consent form and the interviews were then scheduled at a date, time and 21 location convenient to participants. The interviews were undertaken by the lead 22 23 researcher (CN). Audio-recordings were transcribed verbatim and anonymised so that no individual or organisation could be identified. 24

25 Data Analysis

Interview transcripts were analysed in accordance with published guidance for using
the TDF, using a six-step combined content and framework analysis approach (Atkins
et al., 2017) (see figure 1). This process is:

Familiarisation with the data: The lead researcher transcribed a sub-set of the
 interviews, reading and re-reading the interview transcripts and listening to each audio
 recording at least once. This process allowed the researcher to familiarize themselves

with the data, gain a 'sense' of each participant and record emerging themes and
subjects of interest (Smith et al., 2009).

2. Developing a coding agreement: Two researchers (CN, FL) independently coded 3 the first interview, using the TDF as a coding framework by categorising participant 4 responses according to the domain they were judged to best represent. Results were 5 compared and coding heuristics were developed (Atkins et al., 2017). Both 6 researchers coded the second interview separately and compared the results to 7 ensure coding consistency (Patey et al., 2012). The agreed strategy was then 8 employed to code the remaining transcripts. This ensured consistency between 9 researchers and minimised subjective bias (Atkins et al., 2017; Thompson et al., 10 2004). 11

12 3. Deductive Coding of interview transcripts into theoretical domains: The lead researcher coded the remaining interview transcripts independently. Participant 13 responses were coded into the TDF domains they were judged to best represent. 14 Responses were deemed to be relevant if they were directly related to the research 15 question or target behaviour (e.g., "And I'm also much more comfortable at saying, 16 "Look, I'm here to support you but this is actually your problem and if you don't take 17 ownership of it, I can't help you" (P03), coded into the domain Behavioural Regulation 18 as the therapist is trying to encourage the person to be an active participant in their 19 own rehabilitation. Participant responses that were thought to address more than one 20 domain were allocated to multiple domains (e.g., "This is why we've had a very big 21 education programme drive going on with the GPs... because they've only got ten 22 23 minutes, they want that person out of the door" (P08) coded to both Skills and Environmental Context and Resources. The coding was reviewed between CN and 24 25 FL regularly in order to cross-check agreement, improve analytical rigour and minimise researcher bias (Nowell et al., 2017). 26

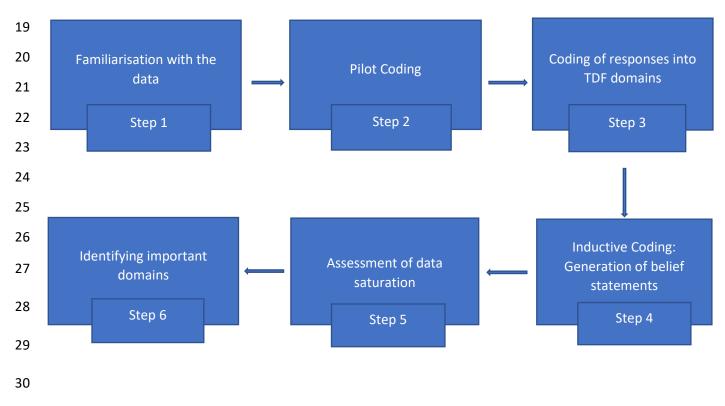
4. Inductive coding: Identifying belief statements within each domain: Next, similar
responses coded to the same domain were grouped, and a belief statement (theme)
was inductively generated. Each belief statement summarised the shared meaning of
the grouped participants responses and represented a specific belief that one or more
of the participants had shared (See Table 3). Belief statements were then classified

as a barrier, enabler, or mixed (i.e., a barrier to some participants but enabler to
others), to delivering occupational therapy.

5. Data Saturation: Data saturation was assessed in terms of thematic saturation.
Thematic saturation is reached when the data fails to contribute new information that
may have influence over the target behaviour (Atkins et al., 2017).

6. Assessing domain importance: The domains of greatest importance to influencing 6 7 occupational therapy intervention with people with FND in the community were 8 identified using criteria proposed by Atkins et al., 2017 and Francis et al., 2009: (1) Frequency of each belief statement across all interviews/participants. Higher 9 10 frequency equated higher importance. (2) Presence of discordance / conflicting beliefs. (3) Expressed importance; domains that had specific beliefs at either high or 11 12 low frequency can be considered important if participants reported that they were key factors that guided their practice or behaviour, as expressed with definitive language. 13 (See Table 2) (4) Domain Elaboration, number of belief statements identified within 14 each domain, with more belief statements representing greater elaboration and thus 15 greater importance. 16

Figure 1. 6 Stage Data Analysis Process (Amended from (Atkins et al., 2017; Roberts et al., 2016)



1 **RESULTS**

2 **Recruitment and data saturation**

Sixteen occupational therapists expressed an interest in participating. Ten met the
inclusion criteria and consented to participate. One face-to-face and nine telephone
interviews were undertaken. The mean interview duration was 72 minutes (SD 8,
range 46-83).

7 Participant characteristics

8 All participants were female with 9 to 32 years of occupational therapy experience 9 (mean 19, SD 9) and 1.5 to 25 years of experience working in community neurological 10 rehabilitation settings (mean 10.7, SD 6.8). Seven participants were employed at band 11 7-level and three were employed at Band 6. Two participants worked in London, five 12 elsewhere in England and three in Scotland.

13 Data Saturation

No new belief statements were generated after participant nine therefore thematic saturation was deemed to have been achieved and the sample size of ten was considered sufficient to ensure content validity. (See supplementary file 2: Data Saturation Table.)

18 Assessment of Domain Importance

When applying the importance criteria of *frequency of specific beliefs*, *discordant themes* and *expressed importance*, the top five domains deemed to be important in affecting the delivery of occupational therapy intervention to people with FND in the community were; (i) Beliefs About Consequences; (ii) Memory, Attention and Decision Processes; (iii) Nature of Behaviours; (iv) Environmental Context and Resources; and (v) Social/Professional Role and Identity (Table 2).

25 Table 2. Assessment of Domain Importance

TDF Domain	Level of Elaboration (number of themes)	Number of Participants Coded to Domain	Discordant Themes	Expressed Importance	Expressed Importance Quote Examples
Beliefs About Consequences	31 (+ 3 sub- themes)	10	Yes (n=3)	Yes (n=9)	'We'd need support from the MDT as well, because I think that's very key, that

					it needs to be an MDT approach'. (P03, pg. 20)
Memory, Attention and Decision Processes	24	10	Yes (n=1)	Yes (n=1)	'and it's always, it's always, it's always OT and physio, it always is, it just always is'. (P08, pg. 12) (Professionals who see people with FND in the community).
Nature of Behaviours	17	10	Yes (n=1)	Yes (n=4)	'I think obviously things like pain and fatigue management again, and best routine and structure are fundamental in trying to help'. (P03, p.10)
Environmental Context & Resources	17	10	No	Yes (n=6)	'I think having access to clinical psychology is very helpful, whether it is directly with the individual or whether it is advice and support for the OT and physio colleagues. (P09, p.g 26)
Social / Professional Role & Identity	15	10	Yes (n=2)	Yes (n=2)	'so I think the bottom line is that this is a disorder that affects the way the nervous system functions and therefore is totally appropriate to see within the context of neuro rehab'. (P05, pg. 23)
Social Influences	14 (+ 1 sub- theme)	10	Yes (n=1)	Yes (n=2)	'I don't know how I'd manage without them'. (P06, pg., 6) (support of Psychologist on the mainland)
Knowledge	14 (+ 4 sub- themes)	10	No	Yes (n=2)	'the knowledge that's needed, so that's first and foremost'. (P08, pg. 28) (Knowledge of FND)
Skills	12 (+3 sub- themes)	10	No	Yes (n=4)	'There is only so much college can do but I think what sets OT apart from everyone else are functions and activity analysis'. (P06, pg. 35)
Emotion	8	10	Yes (n=1)	Yes (n=1)	'Absolutely love it; absolutely love it'. (P08,

					pg. 25) (Working with people with FND)
Beliefs About Capabilities	7	10	Yes (n=4)	Yes (n=1)	'It's making a demarcation between where I feel competent and able to practice and saying, "No, I can't do that" and feeling the confidence to turn around and say I can't do that, because that can be quite challenging as well'. (P06, pg. 29)
Motivation & Goals	7	10	Νο	Yes (n=3)	'So, it is very much a client centred approach, and that is the only way to work for me'. (P05, pg. 16) (Client centred goal setting)
Behavioural Regulation	6	9	No	No	

1

2 Coding interview transcripts into theoretical domains

In total, 2646 responses across interviews were coded into the theoretical domains.
The domains with the most responses were Beliefs About Consequences (n=467);
Environmental Context and Resources (n=381); Memory, Attention and Decision
Making (n=363). The domains with the least responses were Emotion (n=84),

Motivation and Goals (n=87), and Behavioural Regulation (n=30). Responses were
synthesised into 174 belief statements (themes). Of these, 30% were deemed to be

9 barriers, 34% enablers and 36% mixed. Beliefs About Consequences presented the

10 most barriers (n=8), enablers (n=11) and mixed themes (n=12). See Supplementary

11 File 3 for a full table of TDF domains and associated belief statements (1-12). See

12 Table 3 for coding interview transcripts (examples from each domain).

13

14 **Table 3. Coding Interview Transcripts (examples)**

TDF Domain	Example Belief Statement (theme)	Example Utterance (Statement)	Barrier / Enabler / Mixed
Emotion	Patients with FND find the symptoms and resulting disability distressing	'I think that sometimes people, and completely understandably are	Barrier (6 participants)

		frightened and	
Environmental Context & Resources	We don't have access to the resources that are needed to treat patients with FND effectively.	frustrated'. (P02) 'It's difficult. It's frustrating. You know you could make a difference with a great many but you don't have the time or the energy or the resources to do it'. (P06)	Barrier (9 participants)
Knowledge	Guidelines would help to develop the knowledge of OT's practice in this area.	'most people who work with people with functional symptoms aren't specialist OTs like me, they're OTs in social services who've been referred somebody and don't know which end to start with'. (So guidelines would be helpful). (P04)	Barrier (2 participants)
Skills	Working with patients with FND requires specialist skills	'I think neuro OTs are well placed to see them, but I think that the OT has to realise that the techniques and the therapy techniques that they are using with this group are not going to be the same as somebody for example with a stroke, or another brain injury'. (P09)	Mixed (10 participants)
Beliefs About Capabilities	OT's feel that they (do not) have the capabilities to manage distress, anxiety and mental health issues in patients with FND	<i>iwe don't</i> <i>necessarily feel we</i> <i>have the skill to deal</i> <i>with some of the</i> <i>psychological</i> <i>elements of the</i> <i>condition'</i> (P07)	Barrier (5 participants)
Beliefs About Consequences	Patients require access to community OT in a timely fashion to maximise their potential for	'increased dependency, possibly greater need for package of care, greater carer burden on family and friends and	Barrier (10 participants)

[1
	recovery (outcomes are worse without it).	social isolation with potentially their mood deteriorating'. (P02)	
Social Influences	Working collaboratively with other healthcare professionals is essential in providing quality care for patients with FND.	'I think in the team that I am working in now it works very well as we tend to all take the same approach'. (P02)	Mixed (10 participants)
Social Professional Role & Identity	Community neurological OT's do (do not feel) that they should see patients with FND.	'I absolutely think it is part of my role, and it is a funny thing because there has been this big debate over should neuro therapists be seeing these cases, and I find it quite difficult to see why they are not all neuro cases'. (P05)	Mixed (9 participants)
Motivation & Goals	Not all OTs want to work with patients with FND.	' I think it depends on the training and the expertise of the OT, and also the willingness because I can see that this group would not be every OTs preferred group to work with'. (P09)	Barrier (2)
Nature of Behaviours	Intervention strategies for working with patient with FND are (are not) different to those used with patients with organic illness.	'one of the things I do is I acknowledge that I believe that their symptoms are real, and that I don't think they are making it up, and that they have a genuine problem. So, that is something I would probably never discuss with any other client group'. (P05)	Mixed (9 participants)
Memory, Attention & Decision Making	Community neuro OTs have to clinically reason whether to provide aids and adaptations	'Because there is a kind of, "Oh, we shouldn't give equipment to functional patients",	Mixed (7 participants)

	to patients with FND.	it can be a challenge at home because actually sometimes they need that bit of equipment because they're not actually able to achieve their goal otherwise'. (P01)	
Behavioural Regulation	OT's need to employ reflexive strategies within clinical practice to improve their practice.	'I think we've been quite good as a service at reflecting on things that haven't worked, and just maybe adjusting them, tweaking them a bit, but I think one of the big things that has probably changed is us identifying quite early on either people that we don't think are going to benefit from rehab, or we're going to have very limited results with'. (P09)	Enabler (5 participants)

1

A narrative summary of findings within each domain is presented below. Where
participant quotes are provided these are denoted with the participant number e.g.,
P1-10.

5 Nature of behaviours

All participants indicated that there are routine strategies and interventions that they 6 7 use when working in the community with people with FND (e.g., education about the diagnosis, fatigue and pain management, re-training of activities of daily living, graded 8 goal setting, graded task practise, anxiety management and relaxation strategies). 9 Discordant beliefs were reported when the participants were asked if the intervention 10 strategies and/or skills used with people with FND were different to those used when 11 treating people with other neurological conditions. "It's interesting, if I've got a patient 12 with a stroke or a patient with a functional illness who mimics a stroke. I would still 13 treat them in the same way," (P10) versus; "So, definitely there are distraction 14 techniques and the use of rhythm that are quite exclusive to this group." (P04). Two 15 other participants also indicated that a point of difference with FND rehabilitation 16

versus standard neurological rehabilitation was the provision of psychoeducation and
assistance to identify symptom triggers.

3 Beliefs About Consequences

Beliefs About Consequences was the most elaborated domain (n=31 beliefs: 8 barriers, 11 enablers and 12 mixed). All ten participants thought that timely access to community occupational therapy is essential to prevent chronicity of symptoms and dependency. However, timely access and the quality of interventions provided was often prevented by resource restrictions; *"It's difficult. It's frustrating. You know you could make a difference with a great many but you don't have the time or the energy or the resources to do it"* (P06).

Most (n=9) felt that, as a general rule, better therapeutic outcomes are achieved when treatment occurs in home / community environments with MDT support. However, it was widely acknowledged (n=10, barrier) that for some, inpatient treatment may be the best option; "...somebody who has a very high level of disability and...a high level of traumatic manifestation just needs a whole team approach..." (P08).

16 Memory, Attention & Decision Making

Many beliefs in this domain concerned decision making regarding whether to accept referrals. One participant reported that their team as a whole has FND as an exclusion criterion, citing lack of resources and specialist skills as the reason. Two participants, who regularly saw patients with FND, indicated that an important barrier was that psychologists within their team and the local mental health service would not see people with FND.

The decision of when to discharge people with FND was highlighted as challenging by
 nine participants. Flexibility in the intervention period was identified as being beneficial.

25 Environmental Context & Resources

Environmental Context and Resources was a highly elaborated domain (n=17 beliefs: 8 barriers, 4 enablers and 5 mixed). Lack of resources (staff and time) had resulted in barriers to MDT working secondary to different waiting times for different professionals. Participants from London and parts of Scotland reported better MDT access and fewer restrictions on commissioning of services. Lack of funding for key therapies such as physiotherapy, speech and language therapy and psychology were
identified as a barrier in parts of rural England and Scotland. In one region in rural
England, the neurological rehabilitation service and mental health service were unable
to see people with FND citing lack of commissioning. Those working in specialist MDT
FND pathways (n=2) cited better clinical outcomes.

Two participants indicated that working in the community limited their access to supervision and professional support. Whilst staff in under-resourced areas or working in isolated geographical locations had developed cross professional competencies to meet the needs of their patients.

10 Social / Professional Role & Identity

All but one participant indicated that they felt community-based neurological occupational therapists should see people with FND. In teams where there was little support from psychology, occupational therapists often adopted a dual role as there is a need for psychological services but no-one to refer onto. This was a concern to some who worried about working outside of their professional boundaries.

16 Knowledge

Lack of understanding of the condition (n=9) amongst other clinicians and a lack of evidence base to guide treatment were identified as barriers (n=5). Whilst access to the website <u>www.neurosymptoms.org</u> and key papers in the field supported FND related knowledge (n=10).

21 Skills

Training in FND was identified as beneficial, however, financial constraints and lack of availability (n=9) made access difficult. Training access was greater in London and parts of Scotland. Whilst one participant reported the benefits of undertaking a training program with their local GPs about FND and MDT treatment options; *"This is why we've had a very big education programme drive going on with GPs…because they've* only got ten minutes, they want that person out the door" (P08).

Participants recognised that their dual physical and mental health training and core
 occupational therapy skills (activity analysis / rehabilitation through function) enhanced

their ability to work with people with FND.

1 Motivation and Goals

The participants (n=8) stressed the importance of establishing client-centred goals in order to maximise functional outcomes. Goal achievement was seen as motivating (n=8) for both patients and clinicians whilst professionally, participants identified FND as an area that they were motivated to improve their skills in.

6 Social Influences

Working collaboratively with other healthcare professionals was seen as essential in 7 providing quality care for people with FND. One participant indicated that GPs were 8 their most frequent referrers for all other neurological conditions, yet their team rarely 9 10 received referrals from GPs for people with FND. Concern was raised about the knowledge of some GPs regarding FND and its management. Most participants (n=9) 11 also reported that they routinely invite significant others to be involved in the 12 rehabilitation process, most commonly in; education about the diagnosis, symptom 13 triggers and symptom management strategies. 14

Regarding the provision of mentorship and professional supervision, eight participants reported that they do not have direct access to a senior occupational therapist, but rather draw support from peers or other AHPs such as psychologists.

Beliefs About Capabilities

Concerns were raised (n=6) about abilities to effectively treat people with FND; *"Well, I don't feel competent or skilled. I just look and I think, "Oh, god, how am I going to get through this one?"* (P10). Participants (n=5) also highlighted that they lacked the necessary mental health skills to effectively work with some people with FND (in the absence of psychology support). Whilst concerns were also raised about the abilities of some medical staff (GPs and neurologists) to recognise, diagnose and manage the condition in a sensitive and comprehensive manner.

26 Emotion

When asked whether they enjoyed working with people with FND there were mixed responses. Only one participant stated definitively that they did not enjoy it, citing patient complexity and lack of resources as reasons. Other emotions expressed by participants were feeling frustrated at having to offer sub-optimal care due to limited resources, being scared to treat people with the condition and feeling overwhelmed from managing the complex physical and psychological aspects of the condition.

5 Behavioural Regulation

This was the least cited domain. Three participants indicated that guidelines would help to facilitate occupational therapy practice with people with FND. Others (n=3) highlighted the benefits of joint working with junior staff to enhance their knowledge and skills about FND.

Guiding people with FND in the use of self-management strategies was also identified
by three participants as integral to their practice.

12

13 **Discussion**

The results of this study have highlighted individual, professional and service-level barriers and enablers to the delivery of community-based neurological occupational therapy to people with FND in the UK. Lack of resources, reduced access to timely interventions, lack of professional role clarity, and reduced understanding of the condition and treatment modalities were deemed to have the greatest influence on the delivery of occupational therapy interventions.

Within clinical practice there is often conjecture about which professionals are best 20 placed to treat people with FND; neurological or mental health specialist clinicians. 21 The results of this study have indicated that participants were enthusiastic about the 22 potential benefits of community-based neurological occupational therapy interventions 23 for FND with the majority of those interviewed citing that it was appropriate for 24 neurological occupational therapists to see people with FND in the community. 25 Reasons identified for this belief were: that it is a condition that affects the way that 26 the neurological system works and the symptoms impede a patient's occupational 27 performance. Similarly, Edwards et al., 2012 reported in their survey of neuro-28 physiotherapists working with people with functional movement disorder that 82% of 29 respondents felt that physiotherapy was an appropriate treatment with more than 10% 30 of their time being spent with this patient group. In contrast, Ahern et al., 2009 found 31

in their study of neuro-sciences nurses that 34% of those surveyed felt that neurology
wards are not best placed to manage people with FND, whilst Ricciardi and Edwards,
2014 highlighted long-standing ambiguity about which physicians (neurologists or
psychiatrists) should treat people with FND.

Resource availability was unsurprisingly identified as a major barrier to the provision 5 of effective and timely treatment. Others have previously reported barriers to 6 accessing community therapy teams for people with FND in the UK (Demartini et al., 7 8 2014). Lack of funding is usually cited as the main issue, as well as prioritisation of people with other neurological conditions. Similar themes have also been 9 highlighted in the US where a recent economic evaluation reported that despite 10 acute healthcare costs for people with FND being comparable to those of other 11 12 neurological conditions, funding for rehabilitation and psychiatry input for FND remains low (Stephen et al., 2020). In a review of commissioning for 13 14 neuropsychiatric conditions (including FND) in London, services were found to be disjointed and variable (Bhattacharya et al., 2015). In 2019, the national 15 neurosciences advisory group highlighted that people with the most complex 16 needs often get the most fragmented care from the NHS (National Neurosciences 17 Advisory Group, 2019). Fragmented care was reported in the current study. 18

The importance of close MDT working and harnessing the skills of a mix of allied 19 health professionals (AHPs) within neurological rehabilitation settings is widely 20 acknowledged (Chard, 2006; Health Improvement Scotland, 2012; Turner-Stokes, 21 2008; Wade, 2015). However, participants noted that MDT working with people with 22 23 FND was often prevented by lack of resources (staff, time and funding), resulting in varying waiting times for different professions, meaning that many occupational 24 25 therapists often saw people with FND in isolation, before or after their physiotherapy 26 and psychology colleagues. This problem was amplified in the teams who had limited 27 access to psychological services or who were working in rural and geographically 28 isolated areas where resources were diluted. Insufficient resources to provide timely 29 treatment may lead to worse outcomes. Chronicity of symptoms has been linked with worse functional outcomes, greater rates of unemployment and uptake of disability 30 31 related benefits (Carson et al., 2011; Sharpe et al., 2010). Participants also highlighted the benefits of joint working with GPs to improve continuity of care across the treatment 32 pathway. This included offering training to GPs about FND management which has 33

been shown to result in a reduction in GP visits for people with somatoform disorders
(Rief et al., 2006).

3 Participants working in services with limited psychological support raised concerns regarding lack of professional role clarity between occupational therapy and 4 psychology. It was common for occupational therapists to inadvertently take up 5 aspects of the psychology role (e.g., strategies for managing anxiety and low mood), 6 in order to move forward with their own treatment plan. Edwards et al. (2012) also 7 8 highlighted this as an issue for neuro-physiotherapists, indicating that they needed to take a greater supportive role for patients when psychology was unavailable within 9 However, it was widely recognised by the occupational therapy 10 their service. participants that they felt unable to manage people with significant psychiatric illness, 11 12 such as post-traumatic stress disorder. This stance is supported by Nicholson et al., 2020 who highlighted that although occupational therapists are dually trained in 13 14 physical and mental health rehabilitation, not all are well equipped to manage the sequalae of serious mental health problems and psychological trauma. Additional 15 training, accreditation and onward referrals to mental health services may be required. 16

This study highlighted significant variability in the provision, quality and access to 17 community-based neurological occupational therapy for people with FND depending 18 on geographical location. Similar problems have also been found in the provision of 19 community services for people with long-term neurological conditions in London, with 20 service provision between boroughs being inconsistent and inequitable (Siegert et al., 21 2014). Occupational therapists working within specialist FND pathways reported the 22 23 least number of barriers to effective service delivery. Within these services, referrals 24 were received directly from a neurologist post diagnosis and after having received a 25 thorough explanation. The teams had ongoing access to multidisciplinary support including neurologists, psychiatrists and psychologists. Intervention periods were 26 27 flexible with discharge determined by the therapists and patients, based on patient 28 identified goals and goal achievement. Participants from these services reported 29 feeling more confident and competent in their abilities to provide quality care to people with FND, citing a high degree of job satisfaction. Neuro-science and mental health 30 31 experts in the UK agree that it is important for community services to have access to specialists in neurology and mental health as it helps to facilitate the development of 32 integrated and holistic treatment pathways whilst 'operating and delivering services in 33

silos results in poor patient experience' (National Neurosciences Advisory Group,
 2019).

Although occupational therapists reported high motivation to work with people with 3 FND, they found the work challenging due to limitations in knowledge and a lack of 4 published information to guide practise. The absence of occupational therapy 5 treatment guidelines and limited access to affordable specialist training for FND was 6 highlighted as a barrier. Participants reported that their knowledge of other 7 neurological conditions is greater as there are established guidelines to direct their 8 practice e.g. National Clinical Guideline for Stroke, 2016 (ISWP, 2016). To support 9 10 FND specific knowledge and learning occupational therapy consensus recommendations for FND have recently been published (Nicholson et al., 2020) and 11 12 The Functional Neurological Disorders Society (https://www.fndsociety.org/) has been established. Despite having a lack of documented guidance at the time of this study, 13 practice descriptions as described by participants are largely in line with those 14 suggested in recent publications specific to occupational therapy for FND (Gardiner et 15 al., 2018; Nicholson et al., 2020). Similarities were also found between the 16 interventions undertaken by the community neurological occupational therapists in this 17 study and occupational therapy interventions for FND described in in-patient settings 18 (Demartini et al., 2014; Jacob et al., 2018; Jordbru et al., 2014; McCormack et al., 19 2014; Saifee et al., 2012). 20

21

22 Implications for Policy and Practice

The study has highlighted barriers and enablers to effective community-based 23 neurological occupational therapy, including reduced MDT support, lack of guidelines 24 and evidence base to guide interventions and delays to treatment which may lead to 25 worse patient outcomes. Despite these challenges, community-based neurological 26 occupational therapists remain largely positive about the benefits of occupational 27 therapy interventions for people with FND. The findings suggest that there is a need 28 for better access to education about FND and /or specialist community treatment 29 pathways for FND which include occupational therapy. Integral to this model of care 30 would be timely and co-ordinated MDT treatment by clinicians who have developed 31 an interest, specialist knowledge and skills in FND. A more coordinated approach to 32

commissioning physical and mental health services is required to adequately address the bio-psychosocial components of this condition and to improve the disjointed access to services that has been highlighted in the findings. Finally, there is a need for improved channels of communication between neurology, psychiatry, general practice and allied health professionals for patients with complex needs in order to improve continuity of care throughout the treatment pathway.

7

8 Strengths and Limitations

9 The structured and systematic approach of the TDF has uncovered individual and 10 sociocultural barriers that may not have been otherwise identified with other methods 11 (e.g., blurring of roles between occupational therapy and psychology, reduced 12 opportunity for MDT working secondary to the holding of separate waiting lists).

A limitation of this study is a small sample size that was confined to UK-based clinicians. However, thematic saturation was achieved. Recruiting participants via the OT special interest group SSNP UK, enabled targeted purposive sampling of key stakeholders. This, along with inclusion of occupational therapists from different geographical locations increases the generalisability of the findings, ensuring that variations in knowledge, scope of service and funding provision within the UK are captured.

The nature of interventions described in the study are largely in line with recently published occupational therapy consensus recommendations for FND which was a collaboration of international clinicians, representing England, Scotland and the US. This suggests that findings may have some international relevance.

The results could be strengthened through exploration of the barriers and enablers to community occupational therapy from the perspectives of people with FND and their significant others. Future work should explore the content and evidence for occupational therapy in different settings, including inpatient rehabilitation, acute and community care services.

29 **Conclusion:**

Functional Neurological Disorders are common, disabling and associated with high 1 levels of health care utilisation, yet funding for rehabilitation remains relatively low. 2 This study has identified multifactorial, inter-dependent barriers and enablers to the 3 delivery of neurological occupational therapy to people with FND in the community. 4 5 There was significant variability in the provision, quality and access to occupational therapy depending on geographical location. Although the participating occupational 6 7 therapists reported that they enjoyed working with people with FND, resource limitations limited the quality of the service that they were able to provide. The findings 8 9 suggest that many existing community service structures are inadequate and additional resources are required to support occupational therapists delivering 10 treatment to people with FND in the community. 11

12

13 KEY FINDINGS:

- 14 Key Enablers to community occupational therapy for people with FND were:
- 15 Access to training to increase knowledge and skills
- 16 Access to the website www.neurosymptoms.org and key papers
- Teaching patients self-management strategies to decrease reliance on
 therapists
- 19 Dual mental and physical health training
- 20 Core occupational therapy skills and values
- 21 Key Barriers were:
- 22 Lack of available resources (staff and funding)
- 23 Varying waiting times for different professions limiting access to MDT working
- Lack of access to psychological services leading to role blurring between
 occupational therapy and psychology
- Lack of guidelines and evidence base for occupational therapy assessment
 and treatment

28 What the study has added:

- Key barriers and enablers to the delivery of occupational therapy interventions
 for people with FND are identified together with areas of need for future
 service provision and commissioning.
- An identified need for the development of guidelines/recommendations to support occupational therapy assessment and treatment of people with FND.
- Illustrates a theory-based approach to exploring influences on clinical practice
 as a basis for designing healthcare quality improvement interventions.
- 36
- 37

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1 Supplementary Files

- 2 Supplementary File 1:
- 3 Final Interview Guide
- 4 **Topic Guide**

5 Reported barriers and enablers to providing community-based occupational therapy

- 6 to patients with functional neurological symptoms: an interview study with occupational 7 therapists in the UK.
- 7 8

9 Knowledge and guidelines:

- 10 1/ Could you tell me what your understanding of the diagnosis of FNS is and 11 how you have developed this understanding?
- 2/ Have you come across any resources that you have used for your own
 knowledge or for use with patients regarding FNS? (Can you tell me about
 those and whether you found them helpful? What information would have been
 more helpful?)
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183/ Are you aware of any guidelines or evidence base about Occupational19Therapy intervention for patients with FNS? (If so, what do you think of them /20are they helpful? If not, what do you think they should recommend?)

22 Referrals:

- 4/ Approximately how often would you say your team receive referrals for
 patients with this diagnosis?
- 5/ As an OT how frequently do you see patients with this diagnosis in thecommunity?
- 6/ What professionals in your team see patients that are referred with a diagnosis of FNS?
- 32 7/ Who do you routinely receive referrals from for patients with FNS?
- 8/ When you receive a referral to see a patient with FNS, how do you and your
 team decide whether to accept the referral or not? (Are there any factors that
 influence this decision? Do you make that decision alone or is it a team
 decision?)
- 9/ Are there other professionals or teams that you think should be involved that
 currently are not? (*Can you tell me a bit more about that*?)
- 41
 42 10/ Do you feel any pressure from internal or external colleagues to accept or
 43 decline referrals for patients with FNS? (*If yes, can you elaborate on that a*44 *little*?)

1 11/ Within your team are referrals to see a patient with FNS well received? 2 (*Please elaborate.*)

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4 Interventions:

- 12/ When treating patients with FNS do you generally do this in isolation or as
 part of an MDT? (Why is this?) If part of an MDT is there a team process or
 pathway in place for patients with FNS? Can you tell me a bit more about that?)
- 9 13/ Before seeing a patient with FNS how do you know if they are involved with 10 any other health care professionals or if they have been in the past? (*Can you* 11 *tell me a bit more about how you come to that knowledge? If so, does it change* 12 *your interventions at all?*)
- 14 14/ As an OT how do you decide what to work on with the patient? Do you followa sequence of steps?
- 15/ What sort of interventions do you routinely use with patients with FNS in the
 community? (How did you come to the decision as to what type of interventions
 to undertake?)
- 16/ When delivering therapy do you tend to include the patients' significant others in the process? (*If so, how so? If not, why not?*)
- 17/ In your experience how do you think the patients social and physical
 environment impacts on their ability to participate in therapy? (*Can you tell me a bit more about that?*) Does this change your intervention approach at all?)
- 18/ What challenges have you encountered when delivering occupational
 therapy to patients with FNS? (*Can you talk me through these....how did you overcome these?*)
- 19/ As an OT how easy or difficult do you find it to provide occupational
 therapy to patients with FNS? (*What in particular do you find easy/difficult? Is*this for all patients with FNS or does it vary across patients?)
- 20/ Do you enjoy working with patients with a diagnosis of FNS? (*If so why, if not, why not? If not do you think that it influences your therapeutic relationship or ability to develop rapport with your patient?*)
- 21/ As a neuro OT to what extent do you consider providing therapy to patients
 with FNS to be part of your role?
- 43 22/ Compared to other things you have to do as part of your role, where would
 44 you rank providing occupational therapy to patients with FNS in terms of
 45 priority?
- 47 23/ Is providing care for this patient group something you would like to do more
 48 or less of? (*Can you please elaborate on that...*)
- 49

1 2	24/ Do you think your intervention methods with this patient group have changed over time? (If so, can you tell me a bit more about why you think this
3	is the case?)
4	
5 6	25/ What do you think helps or hinders patients with FNS to carry out their set OT goals in the community?
7	
8	26/ How is your approach to treating patients with FNS different to what you
9	may use when treating someone with another neurological condition e.g MS or
10	stroke?
11	
12	27/ What do you think are the specialist skills or knowledge that are important
13	for OT's to have when working with patients with FNS? (To what extent do you
14	feel you are equipped with such specialist skills/ knowledge?)
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16	28/ What do you think would be the best way to help OT's build their skills and
17	knowledge around working with patients with FNS?
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19	
20	Community Therapy:
21	29/What do you think are the advantages of delivering occupational therapy to
22	patients with FNS in the community setting?
23	1 5 5
24	30/ If patients with FNS were not able to access occupational therapy services
25	in a timely fashion what do you think might happen?
26	
27	31/ What resources do you feel are necessary to provide quality therapy to
28	patients with FNS in the community? (Do you feel that you have access to these
29	resources?)
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31	32/ Can you tell me your thoughts about the benefits and disadvantages of the
32	provision of in-patient vs community therapy for patients with FNS?
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35	Support:
36	33/ If a patient with FNS is distressed about their condition, how does this
37	impact your intervention?
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39	34/ Can you tell me who you would go to if you were experiencing difficulties
40	managing a patient with FNS?
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43	Supplementary File 2:
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45	Data Saturation Table
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47	Table showing theme presence in each transcript with data saturation
48	achieved by participant 9
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Γ	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
	PI	PZ	P3	P4	P5	P6	P7	P8	P9	P10
Domain: Emotion										
T denotes theme (belief statement)										
T1 Therapists find lack of access to care for patients frustrating and upsetting	х	x						x		
T2 Seeing patients with FNS is anxiety provoking for OTs	х								х	
T3 Patients and families fear the diagnosis of FNS		x		х						x
T4 I do (not) enjoy working with patients with FNS	х	х	х	х	х	х	x	x	х	х
T5 Patients with FNS find the symptoms and resulting disability distressing	х	х				х		x		x
T6 Working as an OT in the community can be stressful						х				x
T7 Working with patients with FNS is tiring				х				x		
T8 OT's enjoy working in the community setting with patients with FNS								х		
Domain: Environmental context & resources			•					<u> </u>	<u> </u>	
T1 We have access to the resources that are needed to treat patients with FNS	х	x	x	x	x	х	x	x	x	x
T2 We don't have access to the resources that are needed to treat patients with FNS effectively.	х	x	x	x		x	x	x	x	x
T3 Community neuro OT's in under-resourced teams have to be multi-skilled to meet the needs of the patient.						x		x		
T4 The patient's physical environment impacts on their ability to participate in therapy	х	x	x	x	x	x	x	x	х	х
T5 The patient's social environment can prevent engagement in therapy or encourage it.				x	x	x	x	x	x	x
T6 Working in the community limits access to professional support	х					х				
T7 Staffing levels vary from service to service		x		х	x	х	x	x		
T8 Patient information is shared amongst services via an electronic notes system		x	x		x	х	x	x	х	
T9 GP's are influential in funding community services		x								
T10 The duration of the intervention period varies across services	х	x	х		x	х		x	x	х
T11 There are no OT guidelines for treating patients with FNS				х	x	х	x	x		х
T12 Resource pressures hinder MDT working in the community		x		х	x					x
T13 Different waiting times for different services hinder MDT working in the community			x	x				x	x	x
T14 Delivering OT to patients with FNS in the community is resource intensive				х						
T15 Therapy delivered within the community is more embedded in the patient's real life					x	x	x	x	x	
T16 OTs would like effective standardised assessment tools and outcome measures to use with patient with FNS				x	x					
T17 Psychologists in some services will not see patients with FNS due to funding, resources, inadequate intervention periods.		x								x
Domain: Knowledge				1		1				1
T1 OTs are able to explain the diagnosis of FNS	х	x	x	x	x	x	x	x	x	
T2 I am not aware of OT guidelines	x	x	x		x	x	x	x		x
T3 There is a lack of evidence to inform practice	х			x	x	x			х	$\left \right $
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T4 Guidelines would help to develop the knowledge of OTs practice in this area	x			x						
T5 Knowledge of the way that neurological symptoms arise and present is essential when working with patients with FNS to aid diagnosis and treatment	x		х	x	x	x	x	x		x
T6 A patient's lack of understanding of the diagnosis and symptoms can impede recovery.	x		x		x	x	x	x	x	x
T7 Understanding of the condition is important for OTs to deliver effective interventions (OT's are able to explain the diagnosis)	x	x	x	x	x	x	x	x	x	
T8 There is an identified need to increase knowledge about FNS amongst OT staff	х				x					
T9 FNS is a difficult diagnosis to understand for both clinicians and patients	х		х	x	x			x		
T10 Community OTs must have knowledge of other services to link patients in with to provide holistic care		x				x				
T11 Some neurologists do not have the knowledge to provide a diagnosis of FNS		х			x					
T12 Some GPs do not have good knowledge of the condition						x		x	х	
T13 Available guidelines are not always helpful when treating patients with FNS								x		
T14 Community neuro OTs have developed their understanding of FNS via a number of avenues	X	x	х	x	x	x	x	х	X	x
T15 The mind and body are linked in FNS				x	х	x			х	х
Domain: Skills					_	_	1	1	1	
T1 Training has helped OTs to increase their knowledge and skills around FNS	x	x	x	x	x	x	x	x	х	x
T2 Working with patients with FNS requires specialist skills	x	x	x	х	x	х	х	x		x
T3 The identification of FNS requires specialist skills	х			х		x	х	x		х
T4 OTs have identified training needs regarding working with patients with FNS	x	х	x	x	х	x	х	х	х	x
T5 OTs do not feel they have the psychology skills to see patient's with FNS without psychology support						x	x			
T6 Core OT skills mean that OTs are well placed to treat patients with FNS					x	x			х	x
T7 Some OTs feel that they have to work out of their skill set to treat patients with FNS									х	x
T8 Training opportunities are limited	х									х
T9 There is an overlap of some skills between professionals when working with patients with FNS					х	х				
T10 Specialist skills are required to work with patients with functional overlay			x				х			
T11 Explaining the diagnosis requires specialist skills					х		х			х
T12 Senior staff try to dispel negative beliefs and attitudes about patients with FNS through providing education to less experienced staff					x					
Domain: Beliefs About Capabilities										
T1 OTs do (not) feel confident to question if a patient with FNS is suitable for the team to treat	x						x			
T2 Community neuro OTs (do not) feel confident in their abilities to work with patients with FNS	x	x	x	x		x	x	x	x	x
T3 Community neuro OTs (do not) feel confident in their teams' abilities to work with patients with FNS.	x	x	x	x				x	x	x
	•	•	•	•	•	•	•	•		·

T4 OTs feel that they (do not) have the capabilities to manage distress, anxiety and mental health issues in patients with FNS	x			x	x	x	x			
T5 OTs find it difficult to see patients when they do not have an official diagnosis	х	х								
T6 Community neuro OTs (do not) feel confident in the abilities of medical staff to diagnose and discuss the diagnosis of FNS				x		х		х	х	
T7 OTs and teams with more experience of working with patients with FNS are more confident in their abilities to manage them successfully				x	x	x			x	x
Domain: Social, Professional Role & Identity		1		1	1	1	1	I	I	
T1 There is a lack of professional role clarity between OT and psychology in teams where there is little or no psychology support				x		x	x	x		x
T2 OTs are (not) clear about when they need to seek the support of other health care professionals	x	x	x	x	x	x	x		х	x
T3 Community neurological OTs do (do not feel) that they should see patients with FNS	х	х	х		х	х	х	х	х	х
T4 Community psychologists do (do not) see it as their role to see patients with FNS		x				x	х			
T5 There are certain interventions that are recognised as being in the realm of OTs		x	х	x	x	x	x		x	
T6 Community neuro OTs take on an advocate role for patients with FNS	х	x	х			x	x	x	х	х
T7 Community neuro OTs are aware of the roles that other professionals play in treating patients with FNS			x	x		x	x	x	x	x
T8 Community neuro OTs feel that it is important to maintain professional identity when working with patients with FNS					x					
T9 OTs and Physiotherapists are most often involved with patients with FNS in the community		x			x	x	x	x	x	x
T10 Community neuro OTs feel that it is a neurologist's role to provide and discuss the diagnosis		x	x	x	x	x				x
T11 There is a blurring of roles between professionals working with patients with FNS in the community						x		x		
T12 Community neuro OTs that work in isolated areas feel pressure to take on more professional roles than those in more well serviced areas						x				
T13 Patients with FNS are often seen as complex cases by community neuro OTs					x	x	x			x
T14 In some services, junior staff will not see patients with FNS	x				x					
T15 GPs see patients with FNS	x	x				x				
Domain: Beliefs About Consequences		1		1	1	1	1	I	I	
T1 Patients require access to community OT in a timely fashion to maximise their potential for recovery (Outcomes are worse without it)	x	x	x	x	x	x	x	x	x	x
T2 There are benefits of in-patient treatment for some patients with FNS	x	х	х	x	x	x	x	x	x	x
T3 Better patient outcomes are achieved when delivering therapy in the community	x	x		x	x	x	x	x	x	х
T4 When OTs run a mixed caseload it is difficult to develop expertise in any one area	x	x								
T5 Patient's mental health issues and FNS are often related and may / may not be related to past physical or emotional trauma	x				x	x		x		x
T6 Providing a diagnosis in a sensitive manner and way that patients can understand will lessen the chance of relapse and improve outcomes	x			x	x	x		x	x	x
T7 Psychological input can be very beneficial for some patients with FNS	x	x								x

T8 There are more patients in the community with FNS than the number that are referred for therapy	x									x
T9 Patients without a diagnosis of FNS may not fit the criteria required for community therapy / some pts with FNS do not meet some team's criteria	x		x				x			x
T10 It is difficult to deliver the right care to patients with FNS when teams or team members are generalists not specialists	x			X	x	X		x	x	
T11 It is easier to deliver care to patients with FNS when teams are specialists not generalists	x				x			x	x	x
T12 Having FNS will mean that the likelihood of recovery is poor (good)	x					x			x	x
T13 Patients with FNS who have good insight and motivation are likely to have better outcomes	x		X	X		X	x			x
T14 Some referrals lack adequate information / finding out additional information from other professionals about a patient that has been referred for therapy can be time consuming and unproductive (productive)	x		x			x		x		x
T15 It is easier (more difficult) to work with patients with FNS if they and their significant others understand and are (not) on board with the diagnosis / supportive of treatment	x	x	x	x	x	x	x	x	x	
T16 Adapting a patients' home (who has FNS) or providing equipment / care services / benefits can be beneficial (unhelpful)	x		x	x	x	x		x		x
T17 It is important for OTs to be able to recognise when a patient is (is not) ready for therapy	x	x		x	x					x
T18 Some patients with FNS will not do well (will do well) with a short intervention period	x	x		X				х	x	x
T19 It is important for Neuro OTs to learn about FNS so that they can effectively treat patient's and share their knowledge with other staff	x			х	x	х		х	x	x
T20 It is difficult for OTs to work with patients with FNS when they have not received an official diagnosis / easier to work with them when they have had a diagnosis		х	x	x	x					
T21 OTs need to be careful with the language that they use when working with patients with FNS	x				x	x				x
T22 Close MDT working and having MDT support is important when treating patients with FNS (organisational issues sometimes prevent this)		x	x		x	x	x	x	x	x
T23 OTs find it difficult to treat patients with FNS without the support of psychology / mental health professionals		x	x			x	х	x		x
T24 A lack of understanding of FNS can result in a negative view of patients with the condition and result in misinformation to the patient		x	x	x	x	x	х	x	x	
T25 Some patient's mental health symptoms can make it difficult to engage in daily activities and community OT		X		x	x					x
T26 Group interventions can be useful for patients with FNS		х		x						
T27 Engaging in therapy can be very stressful for some patients with FNS and compliance can be affected				x						
T28 Adjunct therapies can be helpful for some patients with FNS				x		x				
T29 Outcomes for patients with FNS participating in community neuro OT vary from patient to patient				x	x	x	x	x	x	x
T30 Therapeutic use of self and taking time to build the therapeutic relationship is important when working with patients with FNS					x	x		x		x
T31 Treating patients with FNS can be taxing on the mind and body for community OTs					х			х		

Domain: Motivation & Goals										
T1 Not all OTs want to work with patients with FNS					x				x	
T2 Some patients are very motivated to participate in therapy and make gains and some are not	x		x	x			x		x	x
T3 Some staff members are keen to learn more about FNS and develop their skills	x	x	х							x
T4 Seeing patients make functional improvements is highly motivating for OTs	x			x	x	x	x	x	x	x
T5 OTs prefer to see patient's with FNS as part of a mixed caseload				x	x				x	
T6 Flexible client driven OT goals are important for successful outcomes			х	x	х	х	x			
T7 Goal setting is routinely undertaken by community neuro OTs			х	x	x	x	x	х	x	х
Domain: Memory, Attention & Decision Making										
T1 Only adequately funded services will accept referrals for patients with FNS	x	x	х	x		x				
T2 Some services will see patients with functional overlay but not pure FNS			х							
T3 Some mental health teams and psychology services will not see patients with FNS			х				x			
T4 Community neuro OTs have to be able to explain their clinical reasoning when making clinical decisions	x								x	
T5 Community neuro teams feel (do not feel) pressure to take on patients with FNS	x	х			х	x			x	
T6 Community teams sometimes have to make decisions about whether to accept a patient or not based on little referral information or without a diagnosis	х	х		x		x		х		x
T7 Undiagnosed patients with suspected FNS will be referred by community OTs for further consultations and tests	x		x		X	x			x	x
T8 The decision of when to discharge a patient with FNS is multi-factorial	x	x	х	x	х	х	x		x	x
T9 There are various sources of referrals of patients with FNS to community OTs	х	x	х	x	х	х	x	x	x	x
T10 The number of referrals of patients with FNS varies across community OT services				x	х	х	x	x	x	х
T11 Referrals are more likely to be accepted from trusted sources	x			x	х				x	
T12 Team members on rota triage referrals and decide which referrals to accept and which waiting list to put them on	х				x	х	x			x
T13 Those triaging the referrals may seek a second opinion from a colleague before accepting the patient					x					
T14 When reviewing a referral, the decision is made as to whether that patient should be seen independently or jointly with another colleague	х	x	х	x	x	x	X	х	x	x
T15 Consultations between community OTs and other HCPs may (may not) alter the treatment plan			x	x			X		x	x
T16 Community neuro OTs have to clinically reason whether to provide aids and adaptations to patients with FNS	x		x	x	X	X		x		x
T17 Treatment plans are often developed after discussions with the MDT	x			x		x	x			x
T18 Community neuro OTs make decisions around prioritisation of patients	x	x	х		х		x	x	x	x
T19 Deciding if a patient with FNS requires specialist in-patient care or specialist community services (e.g. psychiatry) requires complex consideration	х	x			x	x		x	x	x
T20 When a patient with FNS is very distressed, community neuro OTs need to make a clinical decision as how that may be best managed	x	x			x	x		x	x	x
T21 The patient's clinical need determines which clinicians in the team will review them		х	х		x		х	х	х	x
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T1 Intervention strategies for working with patient with FNS are (are not) different to those used with patients with organic illness	х	x		x	x	x	x	x	x	x
T2 OTs explain their intervention methods to patients in different ways					x					x
T3 The intervention strategies used by OTs with patients with FNS have changed as they have gained experience		X	x	X	x	X		x	Х	x
T4 Education about the diagnosis and management strategies is a large component of OT intervention with patients with FNS	х		x	x	x	x	x	x	x	x
T5 The way that OTs explain the diagnosis may be different if it is to a patient or a clinician					x					
T6 There are some routine OT practices and techniques that are undertaken in the community with patients with FNS	х	х	х	x	x	x	x	x	x	x
T7 Community neuro OTs see patients with a variety of neurological and health conditions, as well as FNS			x	X	x					
T8 FNS can be intertwined with other organic symptoms	х							x		
T9 The presentation of FNS and recovery rates are different from patient to patient	х			х		х		x	х	x
T10 OTs routinely seek the advice and expertise of their colleagues when working with patients with FNS	х			x		x		x	x	x
T11 Community work means that community neuro OTs have to be able to work autonomously and creatively	x			x		x			x	
T12 Community neuro OTs are regularly seeing patients with FNS but also routinely run mixed caseloads		x	x	x						
T13 Community neuro OTs involve significant others in the rehab process in various ways		x		X	x	X	x		X	x
T14 The community environment influences the practice methods and approaches of community neuro OTs		х		x					x	
T15 Patients often have had input from a number of different specialities before coming in contact with their community neuro rehab team				X	x			x	x	x
T16 Some OTs see patients with FNS for maintenance sessions over time						x		1	x	x
T17 FNS are common and a huge problem in the community						x		х		
1										

3 Supplementary File 3:

4 TDF domains and associated belief statements (1-12). Three examples from

5 each domain are provided only.

6 NOTE: For ease of representation sub-themes are highlighted in green

7 1/ Knowledge

Theme (global)	Sub-themes	B/E/M	Freq	Quotes	Exp Imp
1/ Understanding of the condition is important for OTs to be able to deliver effective interventions.	OTs lack understanding of the condition	E B (sub- theme 1)	9	I think that kind of often with people that have these conditions, have lots of physical symptoms as well, and I am not sure that mental health teams always have the necessary experience and	the knowledge that's needed, so that's first and foremost. (P08, pg. 28)

2/ Guidelines would help to develop the knowledge of OT's practice in this area.	There are currently no OT guidelines to inform OT	В	2	knowledge to be able to treat these people, which I think is a bit of a shame, really. (P03, pg. 5) I think having a good understanding of other factors, other than the physical symptoms, and having a good understanding of the influence of psychological and emotional factors, and social factors. (P09, pg. 22) most people who work with people with functional symptoms aren't specialist OTs like me, they're OTs in social services who've been referred	
	practice with patients with FNS in any setting.			somebody and don't know which end to start with. (So guidelines would be helpful) (P04, pg. 28)	
3/Community neuro OTs have developed their own and their patients understanding of FNS via a number of avenues.		E	10	My colleagues and I use the Neuro Symptoms website. We've used it for our own training purposes, and originally gathering knowledge, and we would use it with clients. (P09, pg. 3)	

2/ Skills

Theme	Sub-themes	B/E/M	Freq	Quotes	Exp Imp
(global)					
1/ Training has helped OTs to increase their knowledge and skills around FNS		E	10	we as a team have done loads of training to make sure that we always share in our understanding, so it's a common district wide understanding. (P08, pg. 12)	I think that having that training available so that you know that you are doing the best thing for that patient group. (P02, pg. 18)
2/ Working with patients with FNS requires specialist skills	Some staff members do not have those specialist skills	M B (sub- theme)	10	I think many of the staff in the unit don't feel that they have the necessary skills to manage, so I think lots of people come, the junior staff that come to the service to work here, haven't come across it before and don't know anything about it.(P03, pg. 9)	I think often the diagnosis is the make or break place, how it's given, and can be done wonderfully and supportively, or could actually make people fearful of professionals for life. (P08, pg. 4)
				I think neuro OTs are well placed to see them, but I think that the OT has to realise that the techniques and the therapy techniques that they are using with this group are not going to be the same as somebody for example	

			with a stroke, or another brain injury. (PO9, pg. 21)	
3/ Core OT skills mean that OT's are well placed to treat patients with FNS	E	4	But I think it draws on our mental health skills, I think it definitely draws on our neuro skills as well. (P10, pg. 15)	There is only so much college can do but I think what sets OT apart from everyone else are functions and activity analysis. (P06, pg. 35)

2 3/ Social / Professional Role & Identity

Theme (global)	Sub-themes	B/E/M	Freq	Quotes	Exp Imp
1/ There is a lack of professional role clarity between occupational therapy and psychology in teams where there is little or no psychology support.		В	5	so as OTs we've always got this tension between how much psychological intervention do we provide within the context of our profession and you know, I'd like that quite clarified as well, especially when working with the people who have got more trauma issues, how far do us OTs go with that. (P04, pg. 6)	
2/Community neurological OTs do (do not feel) that they should see patients with FNS		E B (do not feel)	9	If I could I would hand it on to a mental health team. (P06, pg. 32) I absolutely think it is part of my role, and it is a funny thing because there has been this big debate over should neuro therapists be seeing these cases, and I find it quite difficult to see why they are not all neuro cases. (P05, pg. 24)	so I think the bottom line is that this is a disorder that affects the way the nervous system functions and therefore is totally appropriate to see within the context of neuro rehab. (P05, pg. 23)
3/ Community neuro OTs feel that it is important to maintain professional identity when working with patients with FNS		E	2	I think ultimately, we must remember that we are actually still trying to enable people to achieve the occupations that they want and need, and are expected to do. (P05, pg. 5)	I think we would have to go back what it is we are trying to do as Occupational Therapists and not to lose sight of that (P05, pg. 5)

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4 4/ Beliefs About Capabilities

Theme (global)	Sub-themes	B/E/	Freq	Quotes	Exp Imp
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1/ Community neuro OTs (do not) feel confident in their abilities to work with patients with FNS	E B (do not)	9	I don't find it any more challenging than any other patient group. (P02, pg. 12) Well, I don't feel competent or skilled. I just look and I think, "Oh, god, how am I going to get through this one?" but it doesn't matter. (P06, pg. 30)	
2/ OTs feel that they (do not) have the capabilities to manage distress, anxiety and mental health issues in patients with FNS	E B (do not)	5	I think we're all quite equipped with the ability to manage the initial distress, in a sense, and how to question it and pick it out but I think you don't want to take it all on your own. (P01, pg. 31) we don't necessarily feel we have the skill to deal with some of the psychological elements of the condition(P07, pg. 15)	It's making a demarcation between where I feel competent and able to practice and saying, "No, I can't do that" and feeling the confidence to turn around and say I can't do that, because that can be quite challenging as well. (P06, pg. 29)
3/ OTs find it difficult to see patients when they do not have an official diagnosis.	В	2	it's when patient's don't have a clear diagnosis is when there can be problems(P02, p.g 12)	

2 5/ Environmental Context & Resources

Theme (global)	Sub-themes	B/E/M	Freq	Quotes	Exp Imp
1/ We don't have access to the resources that are needed to treat patients with FND effectively.		В	9	So, sometimes people have to wait until the other waiting list has come down a bit before we can see them jointly, or try and see them individually which sometimes creates a bit of a barrier really, and not always the best for that person. P03, p.g 20)	So I think there needs to be a bit more funding, and there needs to be a bit more training and I think, and we'd definitely need a consultant for MDT really, to support these people. (P03, p.g 12)
2/ Working in the community limits access to professional support and can be isolating		В	2	Whereas in the community, you haven't got that luxury; you're on your own, you're in the moment and you might have to wait a week before you see the person again and you might not see a senior for two days because you're at one office hub and in and out. (P01, p.g 29)	

3/ Different waiting times	В	7	"It always end up that physio has to opt	Because we have separate
for different services and			out for three months so why don't we	waiting lists for OT and
resource pressures hinder			just put you in first" dependent on	physio and speech, it
MDT working in the			resources. (P08, p.g 17)	doesn't always coincide
community				but with complex people
				we definitely try and do
				joint visits when we can
				and joint assessments
				because that's more
				beneficial. (P10, p.g 21)

2 6/ Beliefs About Consequences

Theme (global)	Sub-themes	B/E/M	Freq	Quotes	Exp Imp
1/ Patients require access to community OT in a timely fashion to maximise their potential for recovery.	Outcomes are worse without it.	M B (sub- theme)	10	I suppose, increased dependency, possibly greater need for package of care, greater carer burden on family and friends and social isolation with potentially their mood deteriorating. (P02, pg. 18)	
				people would return to work more quickly, they could return to a full and active life more quickly, they'd manage their families, they'd manage their responsibilities, they'd maintain their roles much more effectively and they wouldn't end up just kind of going round and round and round hospital appointments looking for an answer that they're not getting. (P04, pg. 30)	
2/ It is important for Neuro OTs to learn about FNS so that they can effectively treat patient's and share their knowledge with other staff.		E	7	If neuro OTs are trying to apply the same techniques in a "one size fits all", I think that that is why people that come to us who have been to other services in the past haven't benefited. (P09, pg. 21)	I think it's really important to be quite knowledgeable about this condition and understand some of these strategies that we might use, because sometimes the strategies just unlock the movement of the action you are really looking for. (P05, pg.12)
3/ Close MDT working and having MDT support is important when treating patients with FNS	(organisational issues sometimes prevent this)	E B (sub- theme)	7	I think it's because like with lots of conditions, people have very variable needs and I think that not one professional is more, has all the skills to meet all of those needs, so I think that there is lots of evidence for all	We'd need support from the MDT as well, because I think that's very key, that it needs to be an MDT approach. (P03, pg. 20)

	conditions an MDT approach can be more helpful. (P03, pg. 20)
	So, sometimes people have to wait until the other waiting list has come down a bit before we can see them jointly, or try and see them individually which sometimes creates a bit of a barrier really, and not always the best for that person. (P03, pg. 20)

2 7/ Motivation and Goals

Theme (global)	Sub-themes	B/E/M	Freq	Quotes	Exp Imp
1/ Not all OTs want to work with patients with FNS.		В	2	So, yes, I think it depends on the training and the expertise of the OT, and also the willingness because I can see that this group would not be every OTs preferred group to work with. (P09, pg. 21)	
2/ Some staff members are keen to learn more about FNS and develop their skills.		E	4	So, it's not a patient group that you think, "Oh, yeah, we're going to see really good gains for me"; it's a patient group that it's more that I just find interesting and want to develop my skills in. (P01, pg. 11)	So, it's quite good MDT availability and everyone is quite keen to learn, is the key. P01, pg. 7)
3/ Flexible client driven OT goals are important for successful outcomes.		E	5	well I think with any patient group you've got to really get it right with goal setting because you know, if people don't set the right goals for themselves it can just put them off and make them even more miserable and unhappy and feel even bigger failures and I don't want that, I want people to have really positive experiences and to feel that they're moving forwards. (P04, pg. 18)	I think that's really fundamental to goal setting because if it is clinician driven then obviously it's less likely to be as successful. (P03, pg. 10)

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4 8/ Memory, Attention & Decision Processes

Theme (global)	Sub-themes	B/E/M	Freq	Quotes	Exp Imp
1/ Some services will see patients with functional overlay but not pure FNS.		В	1	our service has decided that we don't commission people with that diagnosis alone, so it is only the overlay. (P03, pg. 5)	

2/ Some mental health teams and psychology services will not see patients with FNS	В	2	So, it's almost like, sometimes they don't want to take people with this diagnosis either and then there is a bit of a gap, really. (P03, pg. 5)	
3/ Variation in treatment duration across community services affects decision making around treatment plans	Μ	6	We do have some people that we can have very good results within eight weeks, but with others I think you would have to question whether getting involved at all is just a waste of time and money, if you can only provide six sessions, or eight sessions. (P09, pg. 12)	

2 9/ Social Influences

Theme (global)	Sub-themes	B/E/M	Freq	Quotes	Exp Imp
1/Community neuro OTs draw support from other team members if OT supervision is not available.		М	5	I've got very good mentors who are psychologists on the mainland who I can phone up and say, "I don't know what to do" and they're very, very supportive. (P06, pg. 6)	I don't know how I'd manage without them. (P06, pg., 6) (support of Psychologist on the mainland)
5/Participation of patients' significant others in rehab process is (not) beneficial		E B (not beneficial)	9	Yeah, I think when someone has got a social environment that is very supportive, it's a very positive thing but you want to make sure they're not too supportive and they're allowing the person freedom to engage and participate in things that may be considered risky or difficult but doing it in a safe way. (P01, pg. 19) sometimes I have found that family members can be quite negative in their feedback to the person, so when you are saying, "Look, let's try and do this, you want to be able to do this, so we'll take these steps and do this, this and this" and a family member is always, "Oh, but". There is always a negative involved in it, that they are only seeing the negatives rather than the positives. (P09, pg. 17)	
3/Working collaboratively with other healthcare professionals is essential in providing quality care for patients with FNS		М	10	I think in the team that I am working in now it works very well as we tend to all take the same approach and I think that that works well with any patient if everyone is being consistent but I think that that has worked really well with the team that I am working with now. (P02, pg. 9)	

10/ Emotion

Theme (global)	Sub- themes	B/E/M	Freq	Quotes	Exp Imp
1/ Seeing patients with FNS is anxiety provoking for OTs		В	2	I think that I know I felt anxious initially because in your head you're having this battle with, "They've got this weakness but it's not neurological", there's not an organic cause for it but you want the person to feel that you're there with them, you're on their journey and you're not trying to discredit what they're experiencing and what they're saying. (P01, pg. 12)	
2/ I do (not) enjoy working with patients with FNS		E B (not)	10	I worked with a lady recently that when we met her had been wheelchair bound for two years and she had intensive Physio and OT and within six weeks she was walking and I mean that is amazing and incredibly rewarding to be able to facilitate someone to be able to do that. (P02, p.13)	Absolutely love it; absolutely love it. (P08, pg. 25)
8/ OTs enjoy working in the community setting with patients with FNS		E	1	No, my heart sinks. (P06, pg. 30) To me it's the obvious place to treat them, but then I am completely biased, and I'll admit to this in this research, I am biased toward community because it rocks my boat really. (P08, pg. 29)	

11/ Behavioural Regulation

Theme (global)	Sub-themes	B/E/M	Freq	Quotes	Exp Imp
1/Formal guidelines would be helpful to guide OTs new to the area of FNS		E	3	I think a guideline would be useful just to have a brief overview of FNS and might also be useful to have a not a step by step but an idea of how you might work through as an OT working with someone who is newly diagnosed FNS or longer standing to actually help you with your initial assessments and the pathway you might take with that client group. (P01, pg. 3)	
2/ Supervision of junior		E	3	So, myself and a colleague, the other seven, are	
OT staff by more senior				just really keen for our juniors to have to access us, "Put something in my diary, book it in,	

OTs helps skill development			reserve it, we'll do joints, do doubles". (P01, pg. 29)	
3/OTs teach patient's with FNS self- management principles to reduce reliance on their therapists	E	3	So, we very much want it to be things that they can carry on with their family members, rather than having the image that you are going to be working on this goal, but you need a health professional to do it with you in your home. (P09, pg. 22)	

2 12/ Nature of Behaviours

Theme (global)	Sub-themes	B/E/M	Freq	Quotes	Exp Imp
1/Intervention strategies for working with patient with FNS are (are not) different to those used with patients with organic illness.		M Are different Are not different	9	I think also, I am very keen to acknowledge with them, one of the things I do is I acknowledge that I believe that their symptoms are real, and that I don't think they are making it up, and that they have a genuine problem. So, that is something I would probably never discuss with any other client group. (P05, pg. 11)	So, I'm very conscious of the language that I use around them. (P05, pg. 11)
				once we've worked out what it is then it becomes a case of restoring movement, restoring action, restoring confidence, restoring normal sleep patterns, reducing anxiety, whatever, and that can come through a fairly standard programme. (P06, pg. 32)	
2/Education about the diagnosis and management strategies is a large component of OT intervention with patients with FNS		E	9	I think we always continue to go back to discussing why this strategy might work, and why it might look like an unusual strategy to use, but why it will work, and always going back to the diagnosis and what keeps some of these symptoms going, and helping them to understand the whole way along why the intervention might work. (P05, pg. 11)	
3/There are some routine OT practices and techniques that are undertaken in the community with patients with FNS.		E	10	Um, the same that I would with any other patient group so it would depend on what their goals were, we might look at functional task practice, cognitive rehab, upper limb programs, community access so it would just depend on what their goal was. (P02, pg. 10)	I think obviously things like pain and fatigue management again, and best routine and structure are fundamental in trying to help. (P03, p.10)

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