



Original article

Factors impacting pediatric allied health professionals' confidence and interest treating functional neurological disorder in the United States: A survey study

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Abstract

Allied Health Professionals (AHP) are integrated members of the multi-disciplinary Functional Neurological Disorder (FND) care team and include physical therapy, occupational therapy and speech therapy. The objective of this survey study is to determine factors impacting AHPs interest and confidence treating pediatric patients with FND in the United States. An 11-question survey was developed by pediatric AHPs at St. Louis Children's Hospital and distributed over an 8-month period via pediatric interhospital listserv; as well as American Occupational Therapy Association and American Physical Therapy Association community boards. Respondents were required to be licensed AHPs working in a pediatric setting. In total, 239 respondents from 32 hospitals across 18 states participated in this study. Respondents were 110 physical therapists, 92 occupational therapists and 37 speech therapists. For AHPs with 0-5 years clinical experience, 40% reported to be neutral to extremely not interested in FND, with 49.5% reporting neutral to extremely not confident treating FND. For AHPs with 6+ years of clinical experience, 48.6% reported neutral to extremely not interested in FND and 45.8% reported neutral to extremely not confident in treating FND. AHPs with more general clinical experience report higher levels of confidence and lower levels of interest treating pediatric FND compared to those earlier in their career, regardless of AHP type. Non-clinical exposure did not have a significant impact on confidence treating FND. Though, experiential exposure was observed to correlate with highest levels of confidence at 75.8%, regardless of years of experience.

Key words: Functional neurological disorder, Occupational therapy, Pediatric, Speech therapy

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Functional Neurological Disorder (FND) is a diagnosis at the intersection of neurology and psychiatry that is characterized by dysfunction across multiple brain circuits, which impacts the brain's ability to send and receive infor-

mation¹. Diagnosis includes an inconsistency and incongruence of symptom presentation that is emphasized through positive neurological features². This dysfunction leads to physical symptoms that impact an individual's functional movements, bal-

ance, strength, activity tolerance, mental health and overall functional independence. The incidence rate of FND is reported as 18.3/100,000³, but recent literature has suggested that inconsistent coding, lack of training and decreased awareness of FND may lead to under-reporting in the pediatric population⁴. FND has been observed in patients ranging from 4-94 years old⁵, though limited research has focused on the pediatric population and those providing rehabilitative care. The focus of this study is to better understand factors that lead to increased levels of interest and improved confidence treating the pediatric FND population by Allied Health Professionals (AHPs) in various settings.

Evidence-based treatment for FND recommends a multidisciplinary team, including AHP such as occupational therapy (OT), physical therapy (PT) and speech therapy (ST) who provide physical interventions combined with psychological approaches to promote functional progress. This is referred to as psychologically-informed physiotherapy^{6,7}, but similar tenants are utilized with OT and ST. The gold standard of care for patients with FND is a holistic approach focusing on biological, psychological, and social (biopsychosocial) factors to create a patient centered care plan^{7,8}. Treatment often utilizes different therapeutic approaches such as: redirected attention, use of self-management strategies, functional task engagement, graded task exposure and education on diagnosis/treatment, becoming mainstays of treatment for AHP^{9,10,11}. Having education, experience and training treating patients with functional symptoms allows for therapists to utilize techniques such as these to improve effectiveness and consistency of care. Diagnosis acceptance and consistency following treatment recommendations is required by both the patient and caregiver. This understanding of care is especially important while treating the pediatric population.

Unlike traditional neurological treatment where attention to impairments is necessary, excessive attention paid to movements for those with functional movement disorders (FMD) may increase symptoms. Patients with FND, therefore, can benefit from therapy techniques which take attention away from the movement¹². This variation in treatment approach greatly impacts a therapist's level of interest, confidence and bias toward treating patients with FND. Respondents from a survey of neuro physiotherapists in the UK highlighted a moderate interest in the diagnosis of FMD, but reported a low self-judged knowledge of how to treat these patients¹³. According to a study by Barnett et

al, themes of fear have also been noted by healthcare professionals (HCP) in regards to saying the wrong thing to patients, offending their patients or breaking therapeutic trust with their patients highlighting room for improved education of HCP¹⁴. Kozłowska aptly described the culture of FND care stating, "Clinicians working in the outdated culture experience a complex mixture of feelings when faced with the problem of FND: a sense of helplessness; feeling out of their depth; feeling threatened, overwhelmed, or fearful; feeling irritated, angry, affronted, or duped. In turn, the child and family respond to the clinical encounter by feeling offended, dismissed or discounted, helpless, and angry"¹⁵.

Some HCPs find FND challenging to understand and manage, holding varying and often negative attitudes towards these conditions. This was supported in a study of Italian Psychiatrists within which 89% hypothesized that their patients' FND symptoms were feigned¹⁶. A study of nurses also highlighted similar views denoting 1 in 6 not believing symptoms were real and 70% reporting these patients to be manipulative or annoying¹⁷. Negative attitudes toward FND perhaps reflect the limited formal training that many HCP receive on FND management and can impact treatment decisions and patient health outcomes^{18,19}. A shift was reported in Italian neurologists denoting variations in practice based on years of clinical experience. Those with 25 years or more of clinical experience were less likely to refer to physiotherapy, whereas those with less than 10 years clinical experience was more likely to exclude pharmacological prescriptions²⁰. These findings led to our current study with the aim of exploring whether AHPs hold similar perceptions and if those were moderated by their profession, education or years of clinical experience.

Materials and methods

A survey was designed with the goal of assessing AHP's understanding, education, experience, and confidence treating pediatric patients with FND. The survey consisted of 11 questions asking about profession, treatment setting, years' experience and knowledge/interest in FND (Table 1). The survey was active from August, 2022 to April, 2023 and took an average 4 minutes to complete. The survey was written and distributed in English, using Microsoft Forms®, an online survey platform, for AHP's completion across the United States. An inter-hospital listserv of pediatric hospital systems nationwide, provided by Saint Louis Children's Hospital Department of Therapy Services leader-

ship, was the primary source for survey distribution. The survey was also posted to the American Occupational Therapy Association (AOTA) and American Physical Therapy Association (APTA) community boards on 2 separate occasions over the 8-month period. Respondents were not compensated and no identifiable information was obtained through this survey.

Inclusion criteria required respondents to have an active license in occupational therapy, physical therapy or speech therapy while actively treating pediatric patients at time of survey completion. Respondents were not required to have prior experience treating or knowledge of FND.

Review through the Washington University St. Louis Institutional Review Board (IRB) found this survey study to be exempt from IRB approval.

Table 1: Survey questions completed by AHP's for this study (n=239)

Questions asked in the survey are as follows

- 1 What is your profession?
- 2 How many years' experience do you have in your profession?
- 3 What setting do you currently work in?
- 4 What pediatric hospital system or organization are you employed by?
- 5 Have you heard of Functional Neurological Disorder?
- 6 Where did you first learn about Functional Neurological disorder?
- 7 Have you ever treated a patient with Functional Neurological Disorder?
- 8 How confident are you in treating patients with Functional Neurological Disorder?
- 9 What is your level of interest treating patients with Functional Neurological Disorder?
- 10 What words do you associate with the diagnosis of Functional Neurological Disorder?
- 11 Does your setting have processes in place for treating patients with FND?

Results

This survey was completed by 242 pediatric AHP's from 32 different hospitals across 18 states in the United States. Three respondents were excluded from data collection due to missing data. Of total respondents, 46% were physical therapists, 38.5% were occupational therapists and 15.5% were speech therapists. Respondents were subdivided

into a group with 0-5 years clinical experience (n=95) and 6 or more years clinical experience (n=144) to denote trends in relationship to FND, as it pertains to clinical experience. A total of 216 (90.4%) respondents reported being familiar with the diagnosis of FND and 79.5% reported experience treating patients with FND. Across all disciplines, it was found that 46.4% of respondents reported neutral to no confidence treating pediatric FND. Similarly, 45.2% of respondents reported neutral to no interest in treating pediatric FND.

Variability in the initial source of FND education was highlighted by survey participants (Figure 1). Reported sources of exposure to FND included: during postgraduate education, continued education course, employee in-service, discussions with fellow AHP or experiential exposure during clinical practice.

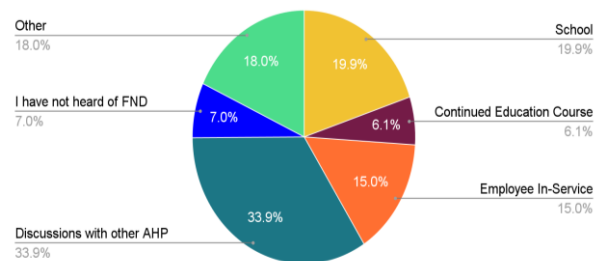


Fig 1. Source of initial functional neurological disorder education

0-5 years' experience

The subdivided group of pediatric AHP with 0-5 years of clinical experience (n=95) denoted 90.4% reporting familiarity with the diagnosis of FND and 82.1% reported having treated patients with FND. This translated into 40% reporting being neutral to extremely not interested in FND and 49.5% reporting neutral to extremely not confident treating patients with FND (Figure 2). ST reported the lowest levels of confidence treating and the highest level of interest in the pediatric FND population. Whereas PT, within this subset, self-reported having the highest level of confidence treating and lowest interest in the pediatric FND population. A total of 42.1% highlighted first learning about FND in postgraduate education. It was reported that 45.3% first learned about FND through "on the job" exposure or fellow AHP in-services/discussion.

6+ years' experience

The subdivided group of pediatric AHP's with 6 or more years clinical experience (n=144) denoting 89.7% reporting familiarity with the diagnosis of FND and 77.2% reported having treated patients with FND. This translated into 48.6% reporting

neutral to extremely not interested in the FND diagnosis and 45.8% of respondents reporting having neutral to extremely no confidence in treating FND (Figure 3). ST reported having the lowest level of confidence treating and level of interest in the pediatric FND population. PT reported having the highest level of confidence treating, while OT reported the highest level of interest in the pediatric FND population. A total of 13.8% respondents reported having learned about FND in post-graduate education. It was reported that 68% first learned about FND through “on the job” exposure or fellow AHP in-services/discussion.

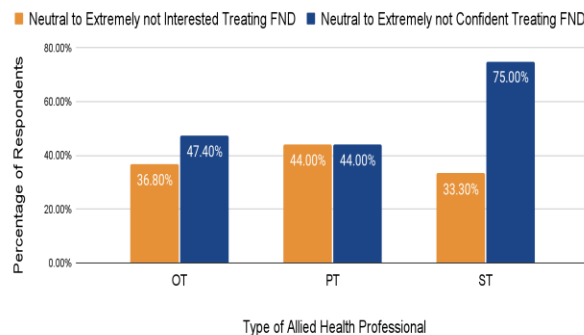


Fig 2. Interest and confidence treating FND by AHP with 0-5 years clinical experience

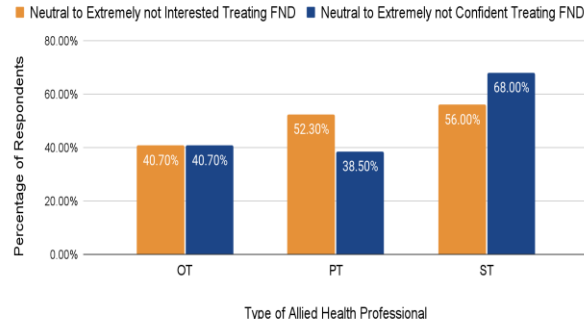


Fig 3. Interest and confidence treating FND by AHP with 6+ years clinical experience

Discussion

Variability in confidence and interest amongst pediatric AHPs is multifactorial due to various sources of post-graduate education, medical center orientation process, treatment population and AHP specializations. With an increase in FND diagnosis post COVID-19, specifically in the pediatric population²², potential for clinical exposure for AHPs is higher than ever. In this study, those reporting experiential clinical exposure as the initial source of education on FND reported the highest level of confidence treating this pediatric population at 75.8% regardless of clinical years' experience.

Education source

Sources of education greatly varied within pediatric AHPs in this study. Forty-two percent of AHPs with 0-5 years of clinical experience reported first learning about FND in post graduate education. This is compared to 13% of AHP with 6+ years' experience. This 29% increase in post graduate education could be in response to the increasing rate of FND diagnosis, prevalence across the life span, burden on the health care system and increased research highlighting treatment process and diagnostic criteria differentiating it from other neurological diagnosis.

Almost half (n=119) of respondents reported first learning about FND via in-service, discussion with fellow AHP or continued education courses. Of these AHPs, 43.7% reported neutral to extremely not confident treating patients with FND. In contrast, 41.7% (n=25) of those receiving their initial education during post-graduate education reported neutral to extremely not confident treatment FND. This brings to light similarities in confidence treating this patient population when excluding experiential clinical exposure. Experiential exposure resulted in nearly a 25% increase in confidence, as well as higher levels of interest in caring for this patient population.

Current sources of education regarding FND are focused primarily on the adult population and not directed toward all AHP types. Less focus on the pediatric population leads to difficulty generalizing recommendations for pediatric AHPs, greatly impacting reported interest and confidence in treating this population. An example of this difficulty applying adult population research to pediatrics was noted in a study by Maggio et. al. In a US-based adult outpatient therapy center, a univariable relationship between the number of sessions attended and clinical improvement was observed²³, but limited data is available to support this in the pediatric setting.

Source and timing of education have an impact on AHP confidence and interest in FND. This was observed through question 10 (Table 1) highlighting word association with FND by pediatric AHP, responses including but were not limited to: conversion, difficult, pain, complex, challenging and psychology. The way that AHPs think about FND greatly impacts their receptiveness to learn about changes in the diagnosis, engaging in clinical practice and willingness to advocate for evidence based pediatric FND care. Newly graduated AHP are beginning to be exposed to FND earlier in their

career which is hypothesized to be a driving factor for increased interest in this diagnosis.

Experience trends

As it pertains to clinical years of experience, it was observed that those with 6+ years of general clinical experience reported a higher level of confidence treating the FND population, but a lower level of interest when compared to peers earlier in their AHP career. A study by Lehn et. al. highlighted that HCP with more hours treating patients with FND correlated with increased treatment confidence regardless of years of clinical experience²¹. Differentiating from Lehn's research, this study found levels of self-reported confidence being higher in AHP with more years of general clinical practice, regardless of quantity of experiential exposure to pediatric FND.

Those later in their AHP career have a higher likelihood of exposure to patients with various functional diagnoses, depending on treatment setting and provider specialization. This, teamed with a higher level of self confidence in treating abilities acquired through general clinical engagement, explains higher self-reported confidence treating pediatric FND in AHPs with 6+ years clinical experience. Increased exposure to a patient population often correlates with increased confidence treating, which was observed through this study's data. It was also reported that AHPs more advanced in their career were 29% less likely to have exposure to FND during post graduate education. With a decrease in foundational education early in training, AHP are treating with outdated terminology and treatment approaches highlighting a conversion phenomenon vs a complex multi-system neurological disorder. Despite high levels of confidence treating FND, interest amongst AHP later in their career is affected by an inability to generalize "typical" neurological treatment approaches, leading to bias and a negative connotation toward the FND population. This teamed with the outdated conversion mindset leads to confusion, anxiety, uncertainty and an association with these patients being difficult, according to respondents' qualitative responses.

With increases in reported post graduate education on FND, as well as an increased focus on mental and physical health; AHPs earlier in their career are receiving new treatment information teamed with updated reasoning supporting treatment approaches. Consensus recommendations have highlighted treatment roles and approaches that are more accessible to HCP^{9,10,11}. This change in foundational training along with an increase in pe-

diatric FND diagnosis was observed to produce higher levels of interest in patient treatment and care. Despite these advantages, diagnosis bias, institutional barriers to FND care, treatment culture and outdated treatment models continue to be prevalent, greatly impacting AHP ability to obtain new treatment information and improve treatment approaches within their medical institutions. Often therapists treat this population without a proper diagnosis, consistent messaging to the patient and quick turnaround of care which impacts an AHPs ability to gain confidence through treatment exposure²⁴. As a result, AHP early in their career continue to have relatively low confidence treating this patient population.

Conclusion

The results of this survey study highlight that though a trend of exposure to FND during post-graduate education is more prevalent for pediatric AHPs with 0-5 years of general clinical experience, confidence in treatment was not concurrent. Regardless of clinical years' experience, OT and PT reported similar levels of confidence treating FND, though PT earlier in career reported lowest levels of interest in the FND diagnosis. ST reported having highest levels of interest, though were least confident treating this patient population. Our data highlights the importance of experiential treatment teamed with appropriate education, correlating with consensus recommendations, as the key factors leading to improved confidence in AHPs treating pediatric FND.

Other studies have outlined that increased exposure treating this patient population has a direct correlation to confidence in treatment delivery²¹. In the same way, patients with more consistent engagement in treatment by AHPs have been shown to make increased functional progress⁷. Ensuring that AHPs have the education and exposure to treating this pediatric population is paramount to improving multidisciplinary care, confidence in treatment abilities and increasing patient access to care by AHPs. With an ever-growing pediatric FND population, these opportunities for experiential exposure are readily accessible for AHPs in lieu of treatment setting.

Further research to support the benefit of OT, PT, ST within the pediatric FND care team is warranted. Our study highlights that despite an AHP initial source of education or years of clinical experience, confidence and interest in treating pediatric FND is multifactorial. With increased research, interdisciplinary discussion and a spotlight on pediatric FND, AHP engagement can be impacted by a va-

riety of types of exposure. This increased exposure can lead to decreasing associated fear in hopes of normalizing FND care within the pediatric healthcare community.

Limitations

Though this study explored factors impacting interest and confidence treating pediatric FND, multiple limitations existed. The credentials of AHP participants were not verified after survey completion. Distribution of the survey was mostly dependent on various hospital system dissemination to their AHP. This survey may have been forwarded to and completed by therapists primarily with awareness of and exposure to FND. The frequency of clinical exposure and use of evidence-based treatment by respondents regarding care for pediatric FND patients was not accounted for through this survey. Although qualitative data with word association was obtained, bias toward the FND population was not formally measured.

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