Individual treatment goals for patients with conversion disorder (functional neurologic symptom disorder) from the perspective of clinicians: A concept mapping study

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Preface

Dit onderzoek kon binnen het tijdbestek van een master thesis niet volledig uitgevoerd worden. De student heeft wel alle stappen gezet die deel uitmaken van dit onderzoek. Een tweede stap in het Delphi gedeelte van het onderzoek en een kaartsortering in een grotere groep zaten er echter niet in. Omdat concept mapping ook in kleine groepen uitgevoerd kan worden, heb ik de student aangemoedigd om het onderzoek toch als een volledig onderzoek te presenteren met een opmerking hierover in de methodologische beperking paragraaf van de discussie.

Rinie Geenen

…

Writing this master's thesis was a pleasure. A big thanks goes to prof. dr. R. Geenen, a professor who is at all times dedicated to his students, research, and passion. An incredibly hard-working man, who wants you to be the best you can be. Thank you prof. dr. R. Geenen for your work. It was a pleasure writing a thesis under your supervision. All the best for your retirement!

Next to my supervisor, this study would have been impossible to conduct without the national working group for conversion disorder. A big thanks goes to you for your contribution to this research. A special thanks goes to the physical therapist who invited me and my fellow student to join her at work for a day. We were able to see patients during therapy. It was a special day learning so much. Thank you!

Lastly, thanks goes to all other experts, clinicians, and researchers, who participated in the interviews, online surveys, Delphi procedure or the card-sorting task. I very much appreciate your effort; a big thanks to all of you. Hopefully, I will meet (some of) you in the work field.

I hope to care as much for patients in my future work as my supervisor and the participants from this study do. I saw their passion, that sparkle in their eyes, for these patients, diagnosed with conversion disorder (FND). If only we would all care about each other like that. It inspires and encourages me for the future. I am excited!

Lisa van Biert

Abstract

The complexity of conversion disorder (functional neurologic symptom disorder) requires personalized, tailored, and goal-driven therapy. The literature, however, lacks knowledge while conversion disorder remains to be a mystery, effective treatment methods are still unknown, and the treatment goals set with a patient with conversion disorder are unidentified. The aim of this preliminary study is to identify and structure encompassing sets of individual goals in patients with conversion disorder (functional neurologic symptom disorder), established through shared decision making within therapy. Using concept mapping, first a diverse group of clinicians were either (online) interviewed or they completed an online questionnaire. Second, a one-round Delphi procedure was fulfilled by the national working group of conversion disorder. Third, a card-sorting task was completed by researchers and clinicians. Fourth, a hierarchical cluster analysis was conducted with the final set of 43 treatment goals. This resulted in a seven-cluster solution combined in three overarching categories: therapeutic context (including the clusters psychiatric comorbidity and psychoeducation), empowerment (involving resilience, stress regulation, and retrieval of body control), and function improvement (consisting of symptom and function improvement and ADL). The diverse set of clusters resembles the diversity of clinicians used in this study; ranging from psychiatrists and psychologists to various physical therapists and a nurse and neurologist. Limiting the results of the study is the relatively small sample size and only one round of the Delphi procedure. The follow-up study, as this is a preliminary study, is advised to extend the sample size and conduct at least three rounds. Nevertheless, the results of this study add to our knowledge of conversion disorder. In clinicals practice, the results can be used during an intake, while setting individualized treatment goals through shared decision making, or an evaluation session.

Keywords: concept mapping; conversion disorder; functional neurologic symptom disorder (FND); shared decision making; treatment goals

Introduction

Conversion disorder (functional neurologic symptom disorder), defined by the fifth edition of the DSM (American Psychiatric Association, 2013), challenges the intersection of the mind and brain; the physical and the mental (Perez et al., 2020). The disorder is characterized by a syndrome displaying neurological symptoms that affect bodily movements and senses, causing significant distress, however unexplained by a neurological, or other medical, condition, or health disorder (Vermeulen & Willems, 2015). Conversion disorder is amongst the most common reasons for referral to a neurological clinic (Stone et al., 2010). It features a high chance of psychiatric comorbidity, such as depression, dissociative disorders, and borderline personality disorder (Sar et al., 2004). The complexity of the disorder, including the comorbidity, requires personalized, tailored, and goal-driven therapy (Glennon, 2011). A variety of therapies have been used to treat conversion disorder, such as psychotherapy (Cottencin, 2014), family therapy, and EMDR (Diseth & Christie, 2009; GGZ, 2021).

Certain types of therapy, provided to these patients, presuppose a number of treatment goals. Behavioural modification, for example, aims at diminishing unhelpful behaviours and strengthening helpful behaviours (Ness, 2007). Psychotherapy aims to reveal the underlying trauma and learn new coping skills to express the emotions underneath without expressing those physically (Diseth & Christie, 2009). Cognitive-behavioural therapy (CBT), proven effective in cases of conversion disorder (Dallocchio et al., 2016; Jasmine & Deeba, 2017), focuses on the reduction of symptoms, return to activities, development of skills and tools, improvement in educational achievement, and increase in understanding and confidence (McFarlane et al., 2019). A case study, by Jasmine and Deeba (2017), involves a 21-year-old woman who was treated with CBT. The goals, she set -through shared decision making- with her therapist, included learning skills to function within her capabilities, learning to talk, being assertive, and diminishing somatic symptoms. In contrast, Pierre Janet, a French psychologist, physician,

philosopher, and psychotherapist, suggested to aim any therapy for conversion disorder at simplifying one's life by reducing stressors and maintaining a minimized and structured life (Habil et al., 2011).

As with the 21-year-old woman, treatments are not necessarily focused on complete removal of all symptoms but rather better quality of life, better functioning, and less intense crisis's (Cottencin, 2014). Patients tend to aim for goals focusing on the return to daily activities, active involvement in personal relationships, and their day-to-day independence. Ness (2007) reviewed three inpatients' cases who were admitted to the St. Mary's Hospital (USA, Minnesota). The first patient was a 20-year-old woman with total sensory and motor loss in all limbs and the torso. Her goal was to be able to go to college and a dog guided training program, as well as to live independently. The second patient, a 18-year-old, was impaired in coordinated movements. As a senior in high school, her goal was to graduate, attend prom, return to her boyfriend, and play basketball again. Lastly, a 34-year-old mother of three children experienced weaknesses and tremors in her limbs. Her goal was to independently walk and jog again, along with return to work (Ness, 2007).

All things considered, overarching treatment goals tend to concentrate on improving quality of life, learning skills to express emotional needs and cope with stressors, and achieving certain independence, with some highly specific treatment goals that bring these closer. However, evidence-based and successful treatments for conversion disorder continue to be elusive (Butler et al., 2020). Meanwhile, symptoms persist or worsen over time (Butler et al., 2020) and the aetiology of the symptoms is still a mystery (Kozlowska et al., 2015). Any perspective of what-to-do-next seems missing (Adams et al., 2018; Butler et al., 2020). Both the literature and the Dutch guidelines seem to lack knowledge of effective and goal-driven therapies. The literature also lacks insight with respect to (un)commonly used treatment goals, the key problem in conversion, personalized care for these patients, and more (Prihor et al.,

2021; Schmidt et al., 2021). Therefore, to the best of knowledge this study is first in aiming to identify and structure encompassing sets of individual goals in patients with conversion disorder (functional neurologic symptom disorder), established through shared decision making. Even though the client's perspective is at least of equal importance, this study will focus on the perspective of clinicians. Due to the intended explorative and unbiased, open nature of this study, and the bottom-up process which it entails, hypotheses will not be formulated. However, it is expected to find a variety of treatment goals including the reduction of symptoms and improvement of quality of life and daily functioning.

Methods

Design

The design of the current study is concept mapping. It involves interviews and an online survey with open questions, a Delphi-procedure and card-sorting task, combining evidence-based procedures and expert-knowledge to quantitatively analyse qualitative data. These procedures are often used to identify concepts and develop instruments (e.g. Klemm et al., 2018; Péladeau et al., 2017). First, clinicians working with patients diagnosed with conversion disorder at different institutions participated in an in-depth interview or answered the same open-questions in an online questionnaire. After gathering all treatment goals that were suggested by the respondents, there was an in-between round wherein treatment goals were selected according to predefined criteria. Second, the treatment goals, derived from the interviews, and questionnaires, were then reviewed and selected in a one-round Delphi procedure. Third, items were randomly written on a set of numbered cards. Experienced clinicians and researchers were asked to sort these cards as to their resemblance of contents and meaning. Criteria were in place to assure that the items were sorted in a varied number of themes and to avoid cards to be singled out. Lastly, the fourth step consisted of a hierarchical cluster analysis to structure the outcome of the card-sorting task. Ethical approval was provided by the Ethical board of Social and Behavioural Sciences at the Utrecht University (21-336). All participants provided informed consent before participating.

Participants

The aim was to find clinicians with diverse backgrounds, professions, workplaces, and experience through the national working group of the conversion disorder. Based on experience, information-richness, availability, and willingness, participants were asked to participate via email, using purposive sampling. Participants needed to have minimal two therapeutic

(assessment or therapy) contacts on a weekly basis with patients with conversion disorder to be included. The interviews were aimed at around 20 participants, more if possible, with varied professions. The Delphi procedure was conducted by five registered psychologists or psychiatrists and experienced researchers, all members of the national working group conversion disorder. Lastly, the card-sorting task was aimed to be completed by ten researchers, clinicians (in training), and master students collaborating in a project group.

Data collection and analysis

Step 1: Interviews. The participants were given the choice to complete the online questionnaire or participate in an (online) interview. Both the questionnaire and the in-depth interviews began with questions about the demographics such as age, years of experience, and what type of therapy they use. In the online questionnaire, participants were able to tick boxes of the types of therapy they apply in their daily work. During the interview, the researchers went through the list together with the interviewee. The types of therapy listed are mentioned in the Dutch national healthcare guidelines for conversion disorder (GGZ, 2021). When ticking the box 'other', they were able to write down what other type of therapy they use. Subsequently, open-ended questions about treatment goals were asked. These were guided by the question 'what individual treatment goals would you formulate together with a patient?'. The (online) interview or questionnaire continued with similarly formulated open questions, for example, by asking about one's last five patients or the most and least complex patients one treated. The interviewee was stimulated to think of as many different treatment goals as possible. The interview, as well as the questionnaire, took around 30 minutes. A face-to-face interview was held at the clinicians' workspace. The online and face-to-face interviews were taken by two interviewers; one interviewer asked questions, while the other took notes. No recordings were taken to assure anonymity.

Following the interviews and questionnaire, after successfully gathering all treatment goals, a first screening was done accordingly; duplicated treatment goals, non-indicative words and incomprehensible or double-barrelled wording were removed or excluded. Similar formulated, or similar in meaning, treatment goals were combined if it seemed accurate and consented over by two researchers.

Step 2: Delphi procedure. A one-round Delphi procedure was used to reach consensus over the final items selected for the card-sorting task. The items were scored and cross-referenced by members of the national working group. The members rated a third of all items to be included (score 1), another third to be excluded (score 3), and a third as questionable, unknowing whether to include or exclude the item (score 2). They were asked to keep the set of final items as diverse and small as possible. All scores were then added up. The items rated a nine were selected in the final set of items, as well as two items rated a ten, resulting in 43 items. Besides rating, the panel could comment on each item. The feedback, for example suggestions on the formulation of items, were reviewed by the researchers and discussed until consensus was reached.

Step 3: Concept Mapping. The card-sorting task was used to structure the treatment goals into themes. Participants were invited to participate in the card-sorting task via email. Once consented, they received the card-sorting task and an instruction booklet. In the booklet participants were asked to individually complete the card-sorting task according to the following four criteria: 1) all observations were to be placed on a pile, 2) each observation can be placed on one pile only, 3) a minimum of 4 and a maximum of 12 piles have to be formed, and 4) each pile can contain at least 2 and at maximum 20 items. This way, no cards were singled out and not too many piles were created with just a few cards. The card-sorting task included the cards with the numbered items on them, which the participants printed and cut out themselves. When the cards were sorted, the participants wrote down on a form, that was

included in the instruction booklet, which cards they sorted to which pile. After completing the card-sorting task, the participants sent the booklet via email back to the researchers.

Step 4: Hierarchical cluster analysis. A hierarchical cluster analysis, performed in IBM SPSS Statistics 26, was used to classify the individual sorts of goals. This way similar sorted items were statistically grouped resulting in a number of clusters. The data was first restructured (by the varstocases command), followed by a numbered ordering, resulting in an overview of the sorted cards per participant per pile. Followed by a proximity analysis, a matrix of items was created indicating the number of times that two items were not sorted in the same pile. Squared Euclidean distances were computed to calculate distances between each pair of items (Berthold & Höppner, 2016; Keogh & Kasetty, 2003). Ward's method, the best choice among these methods according to Ferreira and Hitchcock (2009), accounted for the hierarchical structure of the items. It did so by following two criteria; the between-cluster distances should be maximised, while the in-between-cluster distances should be minimised (Strauss & Von Maltitz, 2017; Ward, 1963). The hierarchical cluster analysis resulted in a dendrogram and an agglomeration schedule, the latter demonstrating each stage of the cluster analysis. The results were discussed by five researchers until consensus was reached of the final cluster solution, aiming to find a distinct and complete set of clusters. Not only the cluster solutions, but also the labels of the clusters and the overarching categories were discussed in this group to reach consensus.

Results

Participants

Interviews were held with 22 participants, whereof 13 completed the online survey, eight requested an online interview, and one participant asked for a face-to-face interview. Characteristics of these participants can be seen in table 1. All participants were female, aged from 22 to 66 years. Diversity can be seen in their professions, as there were psychologists, psychiatrists, physical therapists, and more. The participants and their employers provided mostly secondary and third-line care (see table 2). Also, various types of therapies were provided by the participants. Half of the participants indicated their care involved multi- and interdisciplinary care. A little less than half of participants provided cognitive behaviour therapy (CBT), psychosomatic physiotherapy, and psychopharmacotherapy. Many other types of therapy were also mentioned and added to the list by the participants, such as catalepsy induction, occupational therapy, and mentalization based therapy.

Table 1

Characteristics of participants of the interviews and online surveys

	(Online) Interviews (*N* = 9)	Online surveys (*N* = 13)
Sex, *n* (%)		
Male	0	0
Female	9 (100%)	13 (100%)
Age in years, *n* (%)		
20-29	0	1 (7.7%)
30-39	3 (33.3%)	7 (53.8%)
40-49	3 (33.3%)	3 (23.1%)
50-59	2 (22.2%)	2 (15.4%)
60 or older	1 (11.1%)	0
Profession, *n* (%)		
Clinical psychologist	0	2 (15.4%)
Registered psychologist	0	5 (38.5%)
Psychologist	0	1 (7.7%)
Psychiatrist	3 (33.3%)	1 (7.7%)
Neurologist	1	0
Nurse	1 (11.1%)	1 (7.7%)
Physical therapist	1 (11.1%)	1 (7.7%)
Exercise therapist	2 (22.2%)	0
Occupational therapist	1 (11.1%)	0
Speech therapist	0	1 (7.7%)
Healthcare manager	0	1 (7.7%)

Table 2

Types of healthcare provider and therapies

	Selected by the participants (N = 22)
Type of healthcare provider, *n* (%)	
Primary care	6 (27.3%)
Secondary care	11 (50%)
Third-line care	11 (50%)
Therapy or diagnostics, *n* (%)	
Diagnostics	14 (63.6%)
Cognitive Behavioural Therapy	10 (45.5%)
Hypnotherapy	13 (59.1%)
Psychosomatic physiotherapy	7 (31.8%)
Psychodynamic psychotherapy	6 (27.3%)
Multi- or interdisciplinary	12 (54.5%)
Eye Movement Desensitization and Reprocessing	6 (27.3%)
Schema therapy	2 (9.1%)
Psychomotor therapy	5 (22.7%)
Virtual Reality	1 (4.5%)
Psychopharmacotherapy	7 (31.8%)
Other	
Catalepsy induction	4 (18.2%)
Exercises	2 (9.1%)
Speech therapy	1 (4.5%)
Stress management	1 (4.5%)
Occupational therapy	4 (18.2)
Mentalization based treatment	2 (9.1%)
Acceptance and Commitment Therapy	2 (9.1%)
Mindfulness	1 (4.5%)

Note: Participants were able to select more than one answer. The therapies following 'other', were suggested by the participants.

The card-sorting task involved nine participants, three of which were male (see table 3). The age ranged from 22 to 66 years (*M*=31.67, *ST*=14.67). Five participants positioned as researchers, whereas one was registered psychologist, one was psychologist in training, and two were both registered psychologist and researcher.

Table 3

Characteristics of participants of the card sorting task

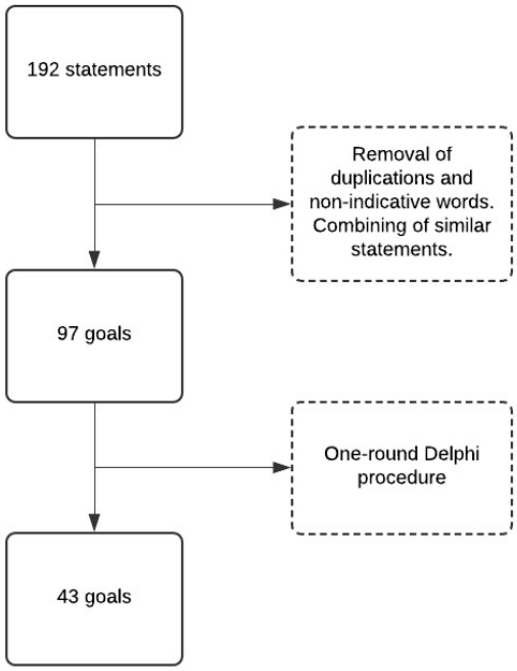
	Participants card-sorting task (*N*=9)
Sex, *n* (%)	
Male	3 (33.3%)
Female	6 (66.7%)
Mean age in years (min–max)	31.7 (22-66)
Profession, *n* (%)	
Therapist	1 (11.1%)
Psychologist in training	1 (11.1%)
Researcher	5 (55.6%)
Researcher and therapist	2 (22.2%)

Concept mapping analysis

The (online) interviews and completed surveys resulted in 192 treatment goals (see figure 1). Removing duplications and combining similar goals resulted in 97 treatment goals, at the start of the Delphi procedure. At the end of the Delphi procedure, 43 goals were selected for the final set of treatment goals used in the card-sorting task.

Figure 1

Flowchart of the selection procedure of treatment goals used for the card-sorting task



The dendrogram (see figure 3 in the appendix) resulting from the hierarchical cluster analysis, shows the schematic representation of the clusters of treatment goals. A seven-cluster solution was chosen (see figure 2), including the corresponding treatment goals (see table 4), combined in three overarching categories: therapeutic context (comprising the clusters psychiatric comorbidity and psychoeducation), empowerment (including resilience, stress regulation, and retrieval of body control), and function improvement (consisting of the two clusters symptom and function improvement and ADL). The eight and six cluster solutions were also considered. The six-cluster solution meant combining the clusters psychiatric comorbidity and retrieval of body control. Due to their distinct nature, the researchers reached consensus that these clusters seem best not to combine.

Eight clusters would have divided the psychoeducation cluster. The eight cluster would have included the treatment goals 29 (formulating one general biopsychosocial explanatory

model), 30 (reaching agreement over one explanatory model, and achieving, if needed, re-attribution), and 39 (applying cautious diagnostics by the assessment of positive signs (for FND)). The five items left would then create the seventh cluster. However, the former three treatment goals overlap with others in that cluster, for example, formulating and reaching agreement over one explanatory model also implies the patient has a certain understanding of the model and diagnosis. Besides, these three treatment goals are part of the first step in therapy, as well as the others in that cluster.

Figure 2

The seven clusters and their overarching categories

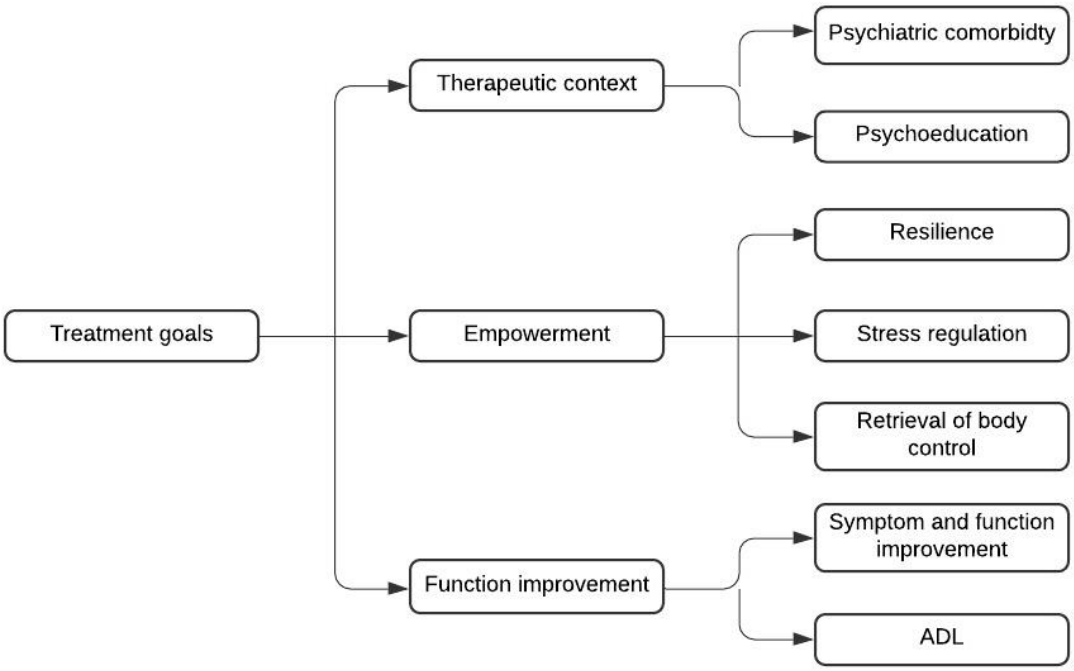


Table 4

Overview treatment goals and corresponding clusters

Cluster 1: Psychoeducation	**Cluster 6: Symptom and function improvement**
15. Prevent relapse	3. Improve language, speech, the voice, and breath
17. Provide psychoeducation	4. Improve certain physical functions, as eyesight, the control of limbs or chew- and swallow problems
18. Gain insight into the maintaining factors and triggers	5. During a certain time period being able to move without experiencing any symptom
19. Gain insight into one's own and others' emotions	7. Improve food intake; for example being independent of tube feeding and using a safe oral intake
29. Formulate one general biopsychosocial explanatory model	8. Reduce additional symptoms like pain and exhaustion
30. Reach agreement over one explanatory model, and achieving, if needed, re-attribution	9. Reduce dissociative reactions and specific symptoms such as tremors, involuntary movements, globus complaints or psychogenic non-epileptic seizures
38. Learn how to explain the diagnosis to others	13. Activate the patient and increasing one's activity level
39. Apply cautious diagnostics by the assessment of positive signs (for FND)	24. Learn contrary movements to the symptom
	40. Obtain physical fitness
Cluster 2: Resilience	
23. Adjust to enduring symptoms and restraints	**Cluster 7: ADL**
33. Improve the quality of life	1. Independently being able to move, such as walking, cycling, climbing the stairs, and getting out of the bed
34. Accept the disorder, symptoms, and situation	2. Independently being able to engage in general daily activities, such as brushing teeth and preparing lunch
35. Learn how to realize personal values	
36. Strengthening the self-image	
37. Develop compassion	
Cluster 3: Psychiatric comorbidity	
26. Treat of comorbid psychopathology, like depression, trauma or personality disorders	

27. Treat of problems in communication due to lessened attention, overburden, and cognitive impairment
28. Treat of traumatic events and impactful situations wherein the symptoms appeared

Cluster 4: Retrieval of body control

21. Increase and improve of control of own functioning
22. Regain control over the body
25. Sense the early stages of symptoms and learning how to react and behave differently
31. Regain trust of bodily functions
32. Remove of anxiety for the body and little body control

6. Independently being able to work, study, and run a household without experiencing symptoms
10. Engaging in daily activities again
11. Achieve an useful day-to-day routine
12. Achieve a day-to-day routine varying between activation and relaxation

Cluster 5: Stress regulation

14. Reduce of stimuli in the brain
16. Learn how to recognize own limits and how to not exceed these
20. Improve the mentalisation of the body
41. Learn to recognize stress
42. Learn to regulate stress
43. Learn to relax; achieve a relaxation state

Note: every treatment goal starts with "*An individual treatment goals might be to…*"

Discussion

The current concept mapping study aimed at identifying structured sets of individualized treatment goals in patients with conversion disorder (functional neurologic symptom disorder) from the perspective of clinicians. The hierarchical structure analysis resulted in a seven-cluster solution combined in three overarching categories: therapeutic context (psychiatric comorbidity and psycho-education), empowerment (resilience, stress regulation, and retrieval of body control), and function improvement (symptom and function improvement and ADL). The expectations are thereby met, as the results show a variety of treatment goals including the reduction of symptoms and improvement of quality of life and daily functioning. To the best of knowledge, no concept mapping studies are published concerning conversion disorder. Studying the somatic symptom disorder, however, Hijne et al. (2022) and Klemm et al. (2018) found, amongst others, the categories empowerment and symptom reduction, as well as overlapping clusters and treatment goals as stress regulation, resilience, and active and structured lifestyle. Results of the cluster analysis are also in line with recent case studies (e.g. Rancourt & Darkes, 2018). McFarlane et al. (2019) found, through a series of case studies, similar categories of treatment goals such as an increase in understanding, strengthening one's confidence, reduction in symptoms, and more.

Noteworthy is the category therapeutic context as it stands out. This, or a similarly formulated, cluster, and its treatment goals, was not found by Hijne et al. (2022) or Klemm et al. (2018). This might indicate a difference between somatic symptom disorder and conversion disorder, or it might be explained by the different perspectives of patients versus clinicians in comparison with the study of Klemm et al. Nevertheless, the literature agrees on the importance of comorbidity and psychoeducation, the two clusters belonging to therapeutic context. Psychiatric comorbidity and trauma experiences are found to be a high risk for the development of conversion disorder and are part of its aetiology (Ali et al., 2015; T. R. J. Nicholson &

Kanaan, 2009; Sar et al., 2004). Willis (2020) firmly argues in favour of thorough psychoeducation in cases of conversion disorder by having a solid understanding of the disorder on the clinicians' part, as well as a skilful and adequate ability to communicate the diagnosis, its implications, and the available treatments. Doing this inaccurate might lead to misunderstandings and resistance to the diagnosis itself. Kranick, Gorrindo, and Hallett (2011) confirm that, due to its complexity, the neurological and psychiatric work fields, even when collaborating, are struggling to adequately diagnose and explain the diagnosis to patients, having serious consequences. Thus, even though these clusters might be a first finding and more research is needed, it suggests to seek and broaden our understanding of comorbidity and psychoeducation, as well as to adequately act accordingly.

Also worth mentioning is the cluster retrieval of body control. Hijne et al. (2022) did not find such cluster, which might be explained by the higher rate of physical therapists in the current study. However, the literature also does not mention retrieval of body control amongst conversion disorder patients or any matters of this kind. The overarching category, empowerment, on the other hand is in line with Hijne et al. (2022) and Klemm et al. (2018). Rommelfanger et al. (2017) strongly support the empowerment of these stigmatized patients. There is a need to deepen our understanding of the disorder and to give hope to the patients. Patient empowerment lessens the stigmatization and leads to better prognosis (Pierce & Albert, 2021). That being said, clinician empowerment cannot be overlooked. Clinicals should feel empowered to proactively diagnose and treat these patients (Molton et al., 2021). In short, next to the already known element of empowerment, the retrieval of body control might also serve as treatment goal in at least a part of the patients.

The diversity of clusters and treatment goals found in this study might confirm the importance of the use of experts stemming from various disciplines. The diversity of clinicians potentially contributes to a complete and adequate overview of treatment goals, and visualizes

the differences in their approach. Physical therapists tend to focus on function improvement, while psychologists naturally are more prone to treat psychological comorbidity and underlying trauma. This suggests the importance of inter- or multidisciplinary treatment for conversion disorder, also mentioned in the Dutch national guidelines (GGZ, 2021). The growing body of literature is promising, studying the effectiveness of inter- or multidisciplinary teams, but in need of randomized controlled trials (Nielsen et al., 2017). The preliminary study of Jimenez et al. (2019) indicated that the Interdisciplinary Chronic Pain Rehabilitation Program (iCPRP), a multidisciplinary treatment model combining psycho-therapy, physical therapy, and drug therapy, reduces psychological distress, anxiety, depression, and physical pain, and improves physical functioning. The randomized controlled trial of Jordbru et al. (2014) is evident of the effectiveness of physical therapy including psychoeducation within a cognitive behavioural framework, making use of certain elements of CBT. These research findings are indications of the effectiveness of inter- or multidisciplinary teams, however, more specific and methodologically sound research is needed.

For clinical practice, the structured overview of treatment goals can be used as additional instrument or screening list to assist during an intake. Needless to say, defining treatment goals should be a shared decision making and tailored process, taking into account the patients' needs, wishes, and expectations. Further on in the treatment process, the overview could be used as additional evaluation form to monitor progress. Lastly, this concept mapping study contributes to our understanding of the conversion disorder. It shows the core of the problems and needs of these patients. A better understanding of this disorder can lead to better treatment guides and outcomes.

One remarkable strengths of this study is the use of multidisciplinary experts, clinicians, and researchers, while performing qualitative and quantitative analyses. The first input was provided by experts, followed by the well-known and valuable Delphi procedure, with its many

strengths (Fink-Hafner et al., 2019), and the card-sorting task. In other words, experts participated in every step of this study. Besides strengths, there are certain limitations that need to be considered. First, the sample size is small due to time limitations. During the data collection, participants rates were aimed higher than turned out to be possible within the time limitations. Noteworthy is the fact that this is an preliminary study. It is suggested for the follow-up study to enlarge the sample size, especially the samples of the participants completing the Delphi procedure and the card-sorting task. Even though, due to lack of agreement, sample sizes for the Delphi procedures are not yet defined, it should be between 10 and 100 experts (Akins et al., 2005). For the card-sorting task 10 to 15 participants are required (Lantz et al., 2019), however, a minimum of 30 is advised (Wood & Wood, 2008). Second, due to similar restrictions, only one round of Delphi was performed in this study. A Delphi-procedure should consist of at least three rounds. This way the experts can revise and improve the data, as every round has its own purpose (Fink-Hafner et al., 2019). Therefore, the follow-up study is advised to conduct at least three rounds of the Delphi procedure.

Future research could investigate the patients' perspective on individualized treatment goals. Similar but also different results are found when taking the perspective of the patient (Klemm et al., 2018). Both perspectives could contribute to formulating individualized treatment goals and adequately applying shared decision making. Furthermore, future research could study the effectiveness of the different therapies for conversion disorder, like Kim et al. (2021) recently did for physiotherapy and Nicholson et al. (2020) did for occupational therapy. Subsequently, the role of each clinician in an inter- or multidisciplinary team could be defined more specifically. The growing body of newly published research is already promising for the future of conversion disorder.

To conclude, the current preliminary study established a structured overview of treatment goals used in various types of treatment for conversion disorder from the clinicians'

perspective. Through shared decision making, individualized treatment goals can be set with the patient. In clinical practice, the results from this study can function as screening list or evaluation form. It also contributes to our understanding of conversion disorder (functional neurologic symptom disorder), however, a great deal remains to be done for these patients!

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Appendix

Figure 3 Dendrogram showing the abbreviated descriptions of treatment goals on the left and the hierarchical sorts on the right