Factors used by the general practitioner for referring patients with chronic musculoskeletal pain.

A qualitative interview study - Region Twente

Annemiek Mossink (s2256444)
Behavioural, Management and Social Sciences
University of Twente, Positive psychology and Technology
1st supervisor: Dr. ing. G. Prosman
2nd supervisor: Drs. E. S. Slatman
Co-supervisor: Drs. J. Broeks
Date: April 25, 2021

Abstract

Around 20% of the Dutch population is suffering from chronic musculoskeletal pain, which is a multifactorial problem. The complexity of chronic musculoskeletal pain makes it hard to define a classification system which results in non satisfactory referring from the general practitioner. Chronic pain is often explained using the biopsychosocial model in which biological, psychological and social factors are causing and maintaining the pain. The present study aimed to investigate these factors related to a referral from the general practitioner for patients with chronic musculoskeletal pain to further treatment within mono- or multidisciplinary care. Using convenience and purposeful sampling 10 semi-structured interviews were conducted among 10 general practitioners. The interviews were transcribed and coded using an iterative process. Analysis of the interviews demonstrated that there were diverse features for referring, which resulted in 90 codes. Psychological complaints were often mentioned in relation to the practice nurse mental health or mental health care and a differentiation between these two referrals was made based on the complexity of the complaint. Patients who were mostly suffering from physical complaints, were often referred towards monodisciplinary treatment. A referral towards multidisciplinary treatment was made when the patient had received monodisciplinary treatment in the past, there was a comorbidity within the complaints and when the general practitioner was familiar with the treatment. The results indicated that the general practitioners are mostly focussing on the physical and psychological factors, which indicates that they lack of focus on the social factors. It is recommended to increase the familiarity of the general practitioners with the different types of treatments available. Future research should investigate the features for referring patients with chronic musculoskeletal pain to identify significant differentiating features for mono- and multidisciplinary treatment.

Keywords: chronic musculoskeletal pain, referral, general practitioners, semi-structured interviews.

Table of contents

1. Introduction

The experience of pain is often subjective and the application of the word is learned early in life. The widely accepted definition of pain of the International Association for the study of Pain (2020) is: "*An unpleasant sensory and emotional experience associated with, or a resembling that is associated with, actual or potential tissue damage"*. Pain is a multifactorial problem. Physical, psychological and social factors can increase or decrease the amount of pain someone experiences (Mittinty, Vanlint, Stocks, Mittinty, & Moseley, 2018). The duration of pain can be variable, within this research the focus lies on chronic pain. The complexity of chronic pain makes it hard to determine a single definition. The definition of chronic musculoskeletal pain used in this research is formulated by the Dutch general practitioners association (NHG-werkgroep Pijn, 2018): "*chronic musculoskeletal pain is a persistent, multifactorial health problem in which physical, psychological and social factors contribute to varying degrees and varying mutual correlations to pain perception, pain behaviour, perceived limitations in daily functioning and perceived reduced quality of life*" (p. 1). For the pain to be chronic, it has to exist longer than the average time to recover or longer than three months (NHG-werkgroep Pijn, 2018). There is not a clear cut-off point for normal recovery because of the complexity of the pain (Vereniging Samenwerkingsverband Pijnpatiënten naar één stem, 2017; Cheng, & Cheng, 2019). When analysing the physical, psychological and social factors, the cause of the pain and also the burden of the pain on the quality of life might be discovered.

Around 20% of the Dutch population is suffering from chronic musculoskeletal pain, this percentage increases with age (Werkgroep Pijnrevalidatie Nederland, 2017). Patients with chronic musculoskeletal pain are known to have a lower quality of life and the expenses for the society are estimated around four billion euros every year (Convenant Health Deal 'Chronische Pijn', 2016). These expenses consist of costs for direct care and indirect costs, for example being absent from work. One way to lower these expenses is to refer as efficient as possible to the suited chronic pain treatment. An early start with a fitting treatment is also decreasing the burden of the disease for the patients (Convenant Health Deal 'Chronische pijn', 2016).

Chronic pain is often combined with symptoms of depression and anxiety (Gupta, et. al., 2007; Bair, Robinson, Katon, & Kroenke, 2003), higher pain levels are correlating with more symptoms of depression and anxiety, more sleeping problems and lower mental functioning (Gupta, et. al., 2007). Also a post-traumatic stress disorder (PTSD) and chronic pain often co-occur (Fishbain, Pulikal, Lewis & Gao, 2017). Patients with this comorbidity report more symptoms of anxiety, depression and greater pain. PTSD and chronic pain have similar coping

mechanisms such as avoidance and catastrophizing, these mechanisms maintain both conditions (Kind, & Otis, 2019). These combinations of physical and psychological complaints makes it complex for primary care physicians to accurately diagnose and advise a fitting treatment (Bair, Robinson, Katon, & Kroenke, 2003).

The complexity of the request for care is in the Netherlands often based on the Workgroup Pain rehabilitation Netherlands – Levels (WPN-levels). Workgroup Pain rehabilitation Netherlands (2017) distinguishes four levels to categorise patients with chronic musculoskeletal pain. Patients in WPN-level one are experiencing pain and there is a limitation in activities without a limitation in participation and there are no or minimal psychosocial problems. These patients are often referred within primary care with guidance from a general practitioner. Patients in WPN-level two are experiencing pain and a limitation in activities and participation. There are no or minimal psychosocial problems. The preferred referral is a treatment in primary care exerted by a specialisation in chronic musculoskeletal pain. Patients in WPN-level three and four are suffering from sustaining psychosocial factors. The impact of these factors is less severe in level three than in level four. Patients with a classification in these levels are referred to specialised care, such as rehabilitation or psychiatry. Despite these WPN-levels the care and referring for chronic musculoskeletal pain patients is still not optimal. The WPN-levels are not explicit and measurable enough, as a result the interindividual classification between practitioners is large (Workgroup Pain rehabilitation Netherlands, 2017).

Waterschoot et. al. (2015) worked on a Case Complexity Index for the assessment of patients with chronic musculoskeletal pain. The score is based on ten factors: Psychiatric disorders, motivation, treatment-interfering personality traits, somatization, family system problems, life events, mentalization capacity, personal injury proceeding, financial and work-related problems and features of complaints. They state that this index covers almost 60% of the complexity, which means more factors to complete the complexity level have to be determined. Patients underline that involving their opinion and assuring their support for the referral is associated with a higher level of satisfaction about the treatment (Brekke, Hjortdahl, & Kvien, 2001). In conclusion there is a need for a classification system which will help to define the correct treatment approach and choose the appropriate care specialist for chronic musculoskeletal pain.

Healthcare in the Netherlands distinguishes between different treatment levels, the three different levels are primary, secondary and tertiary care (Kroneman, 2016). Primary care is directly available for people with a request for care, for example the general practitioner, physiotherapist or an occupational therapist. For a more specialistic and medical complaint, the patient will be referred to secondary care by the general practitioner. In the Netherlands this

referral from primary to secondary care is essential to obtain specialist medical care, examples are hospital care, mental health care or a specialised institution (Pijnpatiënten naar één stem, 2017). When people are suffering from both mental and physical health problems, highly specialized care called tertiary care is indicated. The general practitioner in the Netherlands is usually central in the patients' treatment, they are the gatekeepers within the Dutch healthcare (Kroneman, 2016). The treatment is coordinated by the general practitioner and therefore an understanding of chronic pain and the physical, psychological and social factors is required (Salduker, et.al., 2019). The principle of stepped care is mostly advocated in the referral of patients with chronic pain in the Netherlands. Stepped care is a system of delivering and monitoring treatments, so that the most effective yet least resource intensive treatment is delivered to patients first; only stepping up to specialist services, secondary or tertiary care, as clinically required (Vereniging Samenwerkingsverband Pijnpatiënten naar één stem, 2017).

The treatment options for patients with chronic musculoskeletal pain are diverse, as well mono- as multidisciplinary care and drug treatment is provided. Drug treatment is received by a substantial proportion of the patients with chronic pain (Bekkering, et. al., 2011). Patients who are presenting a combination of physical, psychological and social complaints are advised to follow a multidisciplinary treatment, because of its comorbidity (Tseli et. al., 2019; Peppin, Cheatle, Kirsh, & McCarberg, 2015). Patients who received a multidisciplinary treatment reported significantly less use of health services from the general practitioner (Brendbekken, Harris, Ursen, Eriksen, & Tangen, 2015). Multidisciplinary treatment of chronic musculoskeletal pain consists of different healthcare providers such as physicians, physiotherapists, psychologists and social workers. Examining the different components in a multidisciplinary rehabilitation and providing evidence is hard because of the complexity of the condition and the diversity in nature of the pain (Scascighini, Toma, Dober-Spielmann, & Sprott, 2008). Treatment of patients with somatic inadequate declared physical complaints is aims to learn how to cope with the complaints, to decrease the psychological complaints and to optimize the environment for the recovery from the complaints. The first step within this treatment is monodisciplinary care of the practice nurse or psychologist, the next step is a multidisciplinary treatment (GGZ standaarden, 2021). Within monodisciplinary care, almost all patients are once referred towards physiotherapy related treatment (Bee, McBeth, MacFarlane, & Lovell, 2016), and patients with psychological complaints are often referred towards mental health care for cognitive behavioural therapy (Cheng, & Cheng, 2019).

The complexity of chronic musculoskeletal pain and the comorbidity with psychological complaints makes it hard to define one single valid classification system. The lack of this

classification system increases an insufficient quality of referring (Verbunt, Swaan, Schiphorst Preuper, & Schreurs, 2019). Patients with the same kind of pain, a comparable cause and/or burden of the disease are classified differently and might be treated differently (Regieraad Kwaliteit van Zorg, 2011). This might lead to a diminished quality of care because of inadequate referral and sending patients back to their general practitioner when treatment is not successful. Over 30 percent of the chronic musculoskeletal pain patients in the Netherlands are referred back to the general practitioner after an unsuccessful treatment from a care specialist (Convenant Health Deal 'Chronische Pijn', 2016). Patients are consulting more than ten and sometimes even more than twenty-five care specialists during their treatment trajectory (Convenant Health Deal 'Chronische Pijn', 2016).

Multiple factors are involved in referring patients with pain. Itz, Huygen and van Kleef (2016) point out the importance of general practitioners evaluating the risk factors for chronicity and explaining the treatment plan to the patient. This might help in selecting the appropriate treatment for patients with chronic low back pain earlier. Pitt, O'Conner and Green (2007) identified the general practitioner's familiarity with the different treatment options for osteoarthritis as an important factor for referring. For example, their knowledge about self-management programmes was insufficient which influenced their referral. Most studies focused on a specific target group such as low back pain (Itz, Huygen, & van Kleef, 2016) or osteoarthritis (Pitt, O'Connor, & Green, 2007). These research focused on a specific complaint, but little research had been performed with a focus on referring patients with chronic musculoskeletal pain in general.

The PReferral project is currently designing a decision support tool for personalized referral advice on patients with chronic musculoskeletal pain. With this tool the referring of patients with chronic musculoskeletal pain and therefore the care will be optimized. Patients often present their complaints to the general practitioner at first. The general practitioner should compose a treatment plan, including the appropriate referring of patients with chronic musculoskeletal pain. Identification of the different factors general practitioners focus on for referring is needed in order to optimize the referring of patients with chronic musculoskeletal pain. The present study will focus on the referral from the general practitioners for further treatment. The expected insight coming from this research can be used in the designing of the decision support tool. The central question in this research is: What factors do general practitioners in the region Twente focus on when referring patients with chronic musculoskeletal pain for further treatment? The sub questions are important to find out where the general practitioners focus on in relation to a more specific referral.

1. What factors do general practitioners in the region Twente focus on when referring patients with chronic musculoskeletal pain for further treatment?
2. What factors do general practitioners in the region Twente focus on when referring patients with chronic musculoskeletal pain for further treatment within monodisciplinary care?
    a) What factors do general practitioners in the region Twente focus on when referring patients with chronic musculoskeletal pain for further treatment to:
        I. General practitioner care?
        II. Physiotherapy related care?
        III. The occupational therapist?
        IV. Mental health care?
        V. Other monodisciplinary care?
        VI. The hospital or pain clinic?
3. What factors do general practitioners in the region Twente focus on when referring patients with chronic musculoskeletal pain for further treatment to multidisciplinary care?

2. Method

Research design

This research was an explorative qualitative study using content analysis as a part of the PReferral project. This workgroup consisted of involved disciplines in diagnosing, referring and treating chronic musculoskeletal pain patients. This research provided insight in the factors that influenced the referring of the general practitioner, these factors could be used in designing the decision support tool. The study was ethically approved by the ethics committee of the University of Twente (approval number: 201287).

Participants

The population of this research consisted of 10 general practitioners in region Twente, the east of the Netherlands. The demographics are presented in table 1 and table 2. An inclusion criteria for the participants of this research were that the general practitioner had to work in the region of Twente. Exclusion criteria for the participants of this research were general practitioners who were not practicing at the moment the interview was conducted. Using convenience sampling and purposeful sampling 135 general practitioners were approached of which 10 general practitioners participated in this research, a response rate of 7 %.

Table 1
Demographics by frequency

	N
Gender	
Male	5
Female	5
Working in	
City	3
Village	7
Kind of practice	
Group-practice	7
Solo-practice	3

Table 2
Demographics by median and range

	Median	Range
Age (years)	50	34 – 63
Experience as a general practitioner (years)	15.5	2.5 – 31
Affection with chronic musculoskeletal pain (0-10)	6.5	5 – 7.5
Satisfaction with referring (0-10)	5.5	2 – 7.5

Measures/materials

The objective of this research was to gather all the possible factors that influenced the referring of patients with chronic musculoskeletal pain. These factors were explored with semi-structured interviews with general practitioners. The semi-structured interviews consisted of 33 questions which were based on the literature and consensus of the researchers: S. S., J. B., G.P. and A. M. (see appendix 1). The interview started with a general question about the resources used for referring patients with chronic musculoskeletal pain. The general practitioner was asked which types of referrals they used and based on which features of a patient a particular treatment was chosen. With open questions, the participants were encouraged to give examples during the interview.

Procedure

The research questions were answered with the use of semi-structured interviews with a duration of approximately sixty minutes. Several methods were used to contact the general practitioners. The general practitioners were approached with a newsletter of the organization THOON (Organisation for general practitioners – east Netherlands, Twente) and FEA (Federation of Primary care Almelo and surroundings). The general practitioners were contacted and informed using a newsletter (see appendix 2). Within this newsletter there was a link to additional information about the PReferral Project (appendix 3). A list of general practitioners was made based on the organisations THOON and FEA. Random sampling was used to select general practitioners that were approached personally by phone. They were contacted by a student from the University of Twente and a rehabilitation doctor of hospital group Twente. The general practitioners contacted by the rehabilitation doctor were based on purposeful sampling, they were contacted because they often referred to the medical centre in Hengelo and Almelo. Because of COVID-19 the semi-structured interviews were online via Microsoft Teams. The benefit of a meeting online was time efficiency, on the other hand did online meetings bring concerns for privacy and security of the data (Dwivedi, et. al., 2020). We assured this privacy by saving the information in a secured environment.

The interviews were recorded in Microsoft Teams, transcribed with Amberscript and checked by the researchers. Amberscript was supported by the BMS faculty of the University of Twente. This program transformed the audio into text anonymously. Also the data was deleted when the account at Amberscript was deleted (www.amberscript.com). The reliability of this program was questionable. The transcript of the audio was not perfect according to

Vollebregt (2020). The most important benefit of using Amberscript is saving time. While the audio played the transcripts were checked and corrected, this was the most reliable way of using Amberscript (Kivits, 2017). The recordings and transcripts of the interviews were stored in a secured online environment of the University of Twente.

Data Analysis

The data was analysed by using an iterative process based on the theory of Krippendorff (1980). The first step in the iterative process was to read the transcript freely. The second step was creating initial codes and properties. Codes were used to label the text data. Atlas.ti was used for organization of the themes and data management. The initial codes were discussed between the two researchers to create a reliable coding scheme. Next two or three transcripts were coded, the codes were negotiated and revised. A coding scheme was created and applied to the remaining transcribed interviews. During the coding process of the remaining interviews, the codes were continuously monitored. The data was analysed and coded by S. S., D. J. and A. M. until consensus had occurred. This resulted in an ongoing adjustment of the coding scheme. The final features used for referring patients with chronic musculoskeletal pain were based on consensus of S. S., D. J., & A. M., who were all researchers on the PReferral Project. Analysing the data with multiple researches increased the inter-rater reliability, assigning the same code to the same variable (McAlister, 2017). The Cohen's Kappa indicated the extent to which the agreement between the different researchers was better than chance. The value of the Cohen's Kappa was between 0 and 1. The division of the Kappa statistic was: <0.00 poor; 0.00-0.20 slight; 0.21-0.40 Fair; 0.41-0.60 Moderate; 0.61-0.80 Substantial; 0.81-1.00 Almost perfect. (Landis, & Koch, 1977; McHugh, 2012). The Cohen's Kappa was calculated using one random interview. It was counted how many times the three different researches used the same code on the same text. Each answer of the participant that was not coded by the three researchers was noted as one. When one researched coded a text and the other one did not code a text, there was a disagreement noted. The Cohen's Kappa was 0.67 which means the agreement between the two coders was moderate. 10 interviews were conducted because it was expected that saturation would have occurred. Within table 3 the obtained new codes for each interview and the percentage of these codes are presented. Within the last four interview less than ten percent of the codes used to code the interview was a new code which provided new information.

Table 3

New codes by each participant

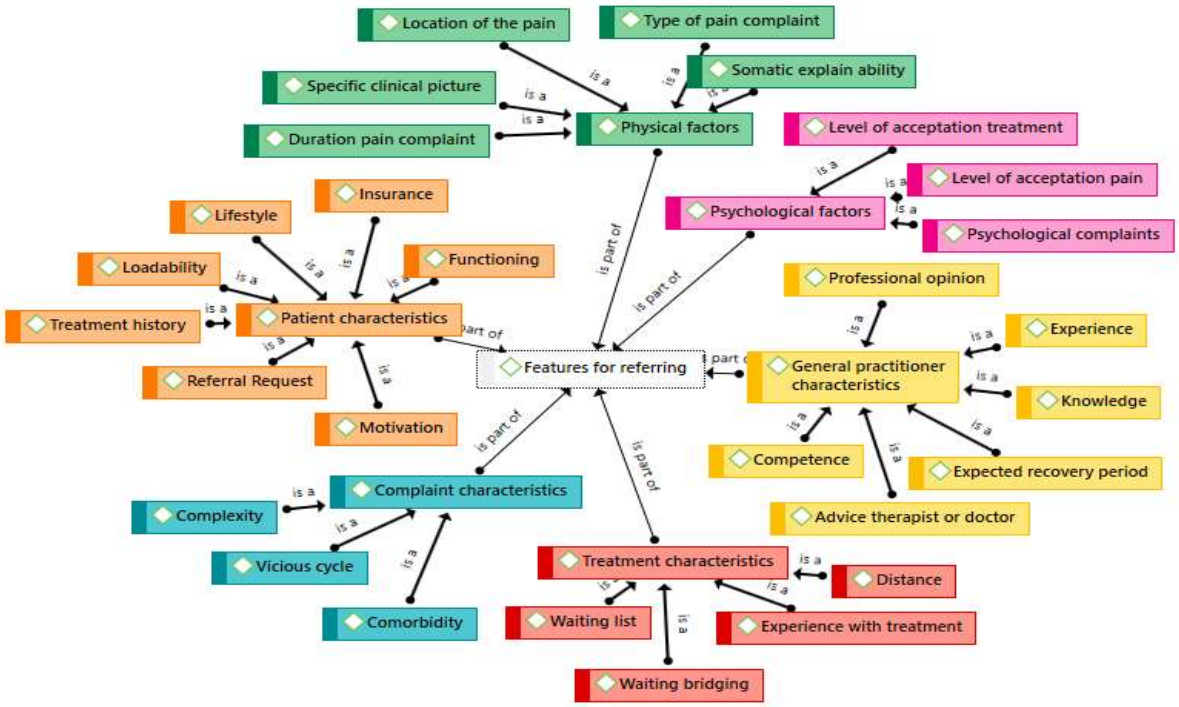
	GP1	GP2	GP3	GP4	GP5	GP6	GP7	GP8	GP9	GP10
New codes (n)	78	29	40	22	22	22	9	13	14	17
New codes (%)	100	37	37	14	13	11	4	5	5	6

3. Results

The final codes, mentioned by more than 50% of the participants, are presented in figure 1, the explanation of these codes can be found in appendix 4. The data analysis resulted in 90 codes used for determining the features used for referring patients with chronic musculoskeletal pain, presented in appendix 5. The factors general practitioners focused on when referring patients with chronic musculoskeletal pain were divided in six categories.

Figure 1.

Final coding scheme with themes and codes.



The codes were related to the different forms of healthcare, based on the sub questions of the semi-structured interview. A distinction had been made between mono- and multi-disciplinary care, within the monodisciplinary care six subcategories were created based on the sub questions of this study. Within this section, the codes mentioned by more than half of the participants, are presented in relation to a type of healthcare. The frequencies stood for the number of general practitioners who mentioned this code in relation to this treatment. The column total was based on the amount of general practitioners who mentioned these features independently of the treatment. All the codes used and their frequencies were presented in appendix 4. Within this chapter features for referring by more than half of the participants were presented in table 4. Next, the codes mentioned in relation to a specific treatment were explained and citations of the participant were given.

Table 4

Themes and codes by treatments

	General Practitioner care	Physiotherapist related care	Occupational therapist	Mental health care	Other monodisciplinary care	Hospital/ Pain clinic	Multidisciplinary care	Total
Physical factors								
Somatic explainability	0	2	0	2	1	8	6	10
Location pain complaints	0	5	2	0	3	8	1	10
Specific clinical picture	2	1	2	0	2	5	2	8
Type of pain complaint	0	6	0	0	1	4	1	8
Duration pain complaint	0	4	0	1	1	2	2	7
Psychological factors								
Psychological complaints	6	1	0	8	2	0	5	10
Level of acceptation pain	0	1	0		1	0	5	9
Level of acceptation treatment	0	2	0	5	1	0	6	0
Complaint factors								
Comorbidity	0	2	0	2	2	1	7	8
Complexity	5	4	0	4	0	2	5	8
Vicious cycle	0	4	0	0	0	0	5	6
Patient factors								
Treatment history	0	1	0	3	2	4	7	10

Functioning	1	2	5	0	1	1	4	10
Referral request patient	0	1	0	0	3	5	1	10
Motivation patient	0	1	0	2	2	0	4	7
Load ability	1	2	0	2	1	0	3	6
Lifestyle	1	1	0	0	5	0	0	5
Insurance	0	6	0	2	1	2	3	6
General practitioner factors								
Unfamiliarity with treatment options	1	7	2	2	4	1	7	9
Professional opinion GP	0	5	0	1	2	4	4	8
Competence GP	1	0	0	1	2	3	2	7
Expected recovery period	0	3	0	2	1	0	0	6
Experience GP	0	0	0	0	0	0	0	6
Advice therapist or doctor	0	1	0	0	0	0	1	6
Treatment factors								
Experience with treatment	0	6	0	0	3	7	6	9
Distance treatment	1	6	0	1	1	2	1	7
Waiting list treatment	1	1	0	2	0	4	3	6
Waitlist bridging	4	5	0	0	0	0	0	6

General practitioner care

Patients who suffered from psychological complaints next to the pain (**Psychological complaints**), which are low complex (**Complexity**), were referred towards general practitioner care such as the practice nurse mental health. General practitioner 9 gave an example of the reasons for referring towards general practitioner care:

"If it is a bit broader with regard to the mental problems or psychological problems, then the practice nurse mental health can handle it well and if it is a bit more deepened or needs longer treatment, then you should refer to the psychosomatic or primary care psychologist anyway."

Physiotherapy related treatment

When the general practitioner was familiar with the possibilities of the treatment (**Unfamiliarity with treatment options**) and the complaints of the patient were of a specific category of complaints (**Type of pain complaint**), the general practitioner referred toward a physiotherapist related treatment. The familiarity with the treatment options is mostly related to the different specialities within physiotherapy related treatment. For example when asked for a referral to a specialised form of physiotherapy, general practitioner 9 responded:

"To be honest, I often do not refer specifically to it. It is a bit unknown to myself."

Different types of pain complaints were mentioned, for example neurological pain, oncological pain and posture related pain. An example from general practitioner 3 was:

"Especially patients with back complaints where I am having a strong feeling that the pain is postural, are referred towards physiotherapy related treatment".

Other factors for referring to the physiotherapy related treatment were: the treatment was near the patients residence (**Distance**) and the treatment was covered by the insurance (**Insurance**). Also the obtained opinion and information during earlier consults (**Experience with treatment**) influenced the referral of patients towards a specialised physiotherapy related treatment. An example of general practitioner 6:

"If someone has had good experiences with manual physiotherapy in the past, I will refer them that way".

Occupational therapist

Patients with a limited functioning in daily life or limited physical functioning (**Functioning**) were referred towards the occupational therapist, if the general practitioner was familiar with the possibilities of their treatment (**Unfamiliarity with treatment options**). A citation as example for this referral from general practitioner 5 was:

"If there is a specific act or function in which they are in a lot more pain, then an occupational therapist is very helpful".

Physical aspects such as the **Location of the pain complaint** and diagnosed physical complaints, such as arthrosis (**Specific clinical picture**) were also reasons for referring towards an occupational therapist. General practitioner 2 gave the following example:

"When I think that certain adjustments could be good, for example people with chronic neck complaints to look at work posture or workplaces"

Mental health care

General practitioners referred to mental health care when the patients presented psychological complaints such as anxiety or depression (**Psychological complaints**), accepted the psychological treatment instead of a physical treatment (**Level of acceptation treatment**) and experienced more complex complaints (**Complexity**). More specifically the patients with **Psychological complaints** next to the pain complaint were referred to mental health care. An example from general practitioner 1 was:

"That is more if there is really underlying, real psychological suffering, so, if there is also depression and anxiety, especially much more in the foreground."

When a patient was suffering from psychological complaints, the referral towards mental health care seemed to be based on the **Complexity**, general practitioner 7 described:

"The local mental health center, it is the same story with the POH-GGZ and the psychologist, the complexity of the psychological complaints influences the referral."

The patient had to be open for this treatment and should have accepted treating the psychological complaints instead of the physical pain (**Level of acceptation of the treatment).** For example as a feature for referring the patient towards a first line psychologist, general practitioner 2 mentioned:

"*Patients who are open for treatment and realise their pain is chronic and there is not a physical cause and they have to live with it, you can often go to primary psychological care with these patients*"

Other monodisciplinary care

Patients who are suffering from certain habits or problems in their daily behaviour, such as smoking or being overweight (**Lifestyle**) are referred towards other monodisciplinary treatments such as a lifestyle coach, social work or alternative treatments. This feature for referring was obvious is relation to the lifestyle coach. General practitioner 1 gave the following example in relation to a lifestyle coach:

"I certainly think if, of course, for example overweight and too little exercise, play a role in the chronic pain."

Also the familiarity of the general practitioner with the possibilities of these treatments were a feature for this referral (**Unfamiliarity with treatment options**). The general practitioner was unfamiliar with a possibility, which was a limitation for referring towards the lifestyle coach. General practitioner 1 mentioned:

"Today I referred the first patient towards a lifestyle coach because I did not know about it.".

There were only a few general practitioners who mentioned that they made a referral towards the types of treatments which focused on the lifestyle and social environment of the patient.

Hospital / Pain clinic

Patients where the physical complaints seemed to be the most important (**Somatic explainability**), with the physical complaints in a specific location in the body, for example back or neck (**Location of the pain complaint**), were referred towards the hospital or pain clinic when there had been good experiences in the past with this treatment (**Experience with the treatment**). This citate of general practitioner 5 gave an example of an earlier experience of the patient that influenced the referral:

"You know, patients are often disappointed when they went there. I have the impression that there are a lot of anaesthetists working there who have started running this pain clinic, but that for a number of years, they have seen too many of those patients and they just do not like it anymore.."

The physical aspects of the complaint and the treatment characteristics were influencing the referral towards the hospital or pain clinic. General practitioner 8 referred to identifying an underlying physical cause that explained the complaint:

"*If the patient is suffering from pain complaints in their knee, I will refer towards the orthopaedic surgeon to have a look"*

Multidisciplinary care

When the patient was showing both psychological and physical complaints (**Comorbidity**) and had already seen multiple therapists and doctors within monodisciplinary care (**Treatment history**), the general practitioner referred this patient towards a multidisciplinary treatment. An example of general practitioner 9 for a referral towards pain rehabilitation was:

"The patients who are having chronic pain complaints, but who are also getting psychologically troubled as a result. The whole picture should be tackled within rehabilitation."

Within this citation the focus was on the **comorbidity** of the complaint, an example by general practitioner 1 focused more on the earlier consults and therapies of the patient, their **treatment history**:

"*Before you refer there, most of the patients are patients with whom you have had, of course, a part of the trajectory where you have already had the physical therapy, have used several things…".*

Another reason for referring towards the multidisciplinary treatment was if he or she knew all the different options (**Unfamiliarity with treatment options**). For example the response of general practitioner 6 when an example of a multidisciplinary treatment was given during the interview, was:

"Have a look, never seen. No, I don't know either. So that would be great, wouldn't it, because I already complained that the palette was not that wide, but I am not familiar with the whole palette."

When a general practitioner was not familiar with a certain treatment, he or she did not refer towards this treatment.

4. Discussion

Summary of results

The present study aimed to investigate the factors related to a referral from the general practitioner for patients with chronic musculoskeletal pain for further treatment in general and within mono- or multidisciplinary care. The factors that influenced the referral of the general practitioner in general were diverse, there were physical, psychological, complaint, patient, general practitioner and treatment factors. When the patient was suffering from psychological complaints, a referral towards the practice nurse mental health or mental health care was made based on the complexity of the complaint. The patients who were mostly suffering from physical complaints were referred towards physiotherapy related treatment or the hospital or pain clinic by the general practitioners, if they were familiar with the possibilities and have had good experiences in the past with this treatment. If these physical complaints were combined with a limited functioning, a referral towards the occupation therapist was made. When there was a comorbidity of psychological and physical complaints and the patient had received monodisciplinary care earlier, a referral towards a multidisciplinary treatment was made by the general practitioners if they were familiar with the possibilities.

Use of categories

Within this study the different treatments are categorised based on mono- or multidisciplinary care and the type of treatment such as mental health care or hospital care. Within the introduction it is described that the WPN-levels are used within the Netherlands to refer patients based on the complexity of the complaint, but these levels are not explicit and measurable enough to categorise the different treatment options (Workgroup Pain rehabilitation Netherlands, 2017). Another form of categorising the types of healthcare in the Netherlands distinguishes between different treatment levels, the three different levels are primary, secondary and tertiary care (Kroneman, 2016). Within this study this type of categorising has not been used because two different types of treatment, with possible different factors important for referring, would have been put together. An example is that treatment by the physiotherapist or a psychologist will both be categorised within first line care, despite they are different types of treatment. Concluding, categorising based on mono- or multidisciplinary care with the specialised forms of monodisciplinary treatment would ensure the most favourable information for this research.

Comparison with guidelines

A general practitioner seemed to refer patients towards a physiotherapy related treatment when he was familiar with the possibilities. De Jong et. al. (2018) described within the pain guidelines for general practitioners that dependently of the cause, localisation and duration of the pain, different types of physiotherapy related treatments could be practiced in order to realise a more active lifestyle. The guidelines refer towards physical aspects of the complaint in relation to the physiotherapist, which is also mentioned by the participants of this present study. But the participants of this present study also refer to insurance, distance and experiences with the treatment as factors influencing their referral, these factors were not mentioned within the Dutch guidelines for pain or chronic pain. Physiotherapy is only covered by the insurance when a chronic physical condition has been diagnosed, if there is not the patient should have an additional insurance for physiotherapy related treatment (Rijksoverheid, n.d.). This might be a factor which limits the patient to receive a physiotherapy related treatment.

Within this study, psychological factors and the complexity of the complaints seem to be important factors for mental guidance by POH-GGZ and mental health care. When analysing the Dutch general practitioner guidelines, it is advised to refer patients who are suffering from unhelpful attitudes, emotions and behaviours in relation to the chronic pain, to the first line psychologist or practice nurse mental health care (Jong, de, et. al., 2018). Unhelpful attitudes, emotions and behaviours can be seen as psychological complaints, the complexity of the psychological complaint in relation to this referral is not mentioned within the guidelines for pain but are mentioned in the guidelines for chronic pain. When there is low complex chronic pain, the patient should be referred toward monodisciplinary treatment (Vereniging Samenwerkingsverband Pijnpatiënten naar één stem, 2017). Within this study the participants were asked based on which factors they differentiated between mental guidance by the POH-GGZ and mental health care. The explanation of this differentiation was often related to the complexity of the complaint by the general practitioners. Within the guidelines, the complexity is also a feature for referring towards mono- or multidisciplinary treatment (Vereniging Samenwerkingsverband Pijnpatiënten naar één stem, 2017). The complexity of the pain complaint and the psychological complaints were mentioned by only half of the participants when referring towards a multidisciplinary treatment, based on the guidelines it was expected to be higher. When the patient is suffering from a more complex complaint, a multidisciplinary approach is advised by the Dutch general practitioner guidelines within the stepped care approach (Jong, de, et. al., 2018; Vereniging Samenwerkingsverband Pijnpatiënten naar één stem, 2017). The complexity within the guidelines is explained as a combination of multiple

complaints, which are coded in this study as comorbidity. The comorbidity of physical and psychological complaints were mentioned by seventy percent of the general practitioners as a feature for referring towards multidisciplinary treatment. The treatment history of the patient and the familiarity of the general practitioner with the treatment options are also features for referring towards multidisciplinary care. The treatment history of the patient can be explained from the stepped care model which prescribes starting with the least intensive treatment (Vereniging Samenwerkingsverband Pijnpatiënten naar één stem, 2017). The unfamiliarity of the treatment options will further be discussed within the next paragraph in relation to prior research because the guidelines do not write about the familiarity of general practitioners.

Overall, the general practitioners seem to refer in accordance with the guidelines when it comes to monodisciplinary care, when referring towards a multidisciplinary treatment, complexity was not mentioned as often as expected according to the guidelines.

Comparison with prior research

The focus of this section will be on the social factors and the unfamiliarity of the general practitioner with the treatment options because these results were remarkable. Other results were more obvious, such as referring to a psychologist when a patient is suffering from psychological complaints.

The present study found physical, psychological, complaint, patient, general practitioner and treatment factors that are important for the referral of patients with chronic musculoskeletal pain. Within the definition of chronic pain, a combination of physical, psychological and social factors are contributing to the chronic musculoskeletal pain (NHG-werkgroep Pijn, 2018). The position paper for chronic pain also describes the psychosocial factors as a differentiating factor between the complexity levels (Werkgroep Pijnrevalidatie Nederland, 2017). Within WPN level one and two there are no or minimal psychosocial problems but within level two and three they are maintaining the pain. This biopsychosocial approach is important for the understanding and treatment of chronic musculoskeletal pain (Tseli, et. al., 2018). The physical and psychological factors are represented within this study but the social factors did not seem to play an important role within the referrals. Social problems were mentioned by some of the general practitioners but not often related to a specific referral, which indicates that the general practitioners did not seem to take these problems into account when referring patients to the most fitting treatment. Social problems within this study are related to problems at work or with friends or family.

The referral of general practitioners toward tertiary healthcare is influenced by biomedical elements (Tzartzas, 2019). This might be explained from the biomedical model that is generally the base of treatment of chronic musculoskeletal pain (Ushida, 2015). Prior study showed that social and psychological factors greatly affect chronic musculoskeletal pain but the treatment often focusses on the physical factors (Ushida, 2015). The identification of general practitioners of the social environment of their patients is limited, they are having difficulties estimating the loneliness and social participation of their patients, despite them being aware of the consequences for their health and health perception (Due, Sandholdt, Siersma, & Waldorff, 2018; Van der Zwet, Koelewijn – Van Loon, & Van den Akker, 2009). Hansen, Rosendal, Fink and Risor (2013) focused on patients with medically unexplained symptoms and found that general practitioners seldom engage in psychosocial cues. Within the traditional biomedical approach the general practitioner is looking for a disease, the complaint should have a physical cause which influenced the diagnostic process. The biopsychosocial model is supported with empirical evidence, but in practice the psychosocial factors are often viewed as secondary and as a reaction to the pain (Meints, & Edwards, 2018). These studies might explain why general practitioners do not focus on the social factors when referring patients with chronic musculoskeletal pain. When the general practitioner is not familiar with the social environment of the patients, it will not be used as a factor for referring which might lead to an incorrect referral.

Based on the results from this present study the unfamiliarity of the general practitioner about the treatment options seems to influence their referrals of patients with chronic musculoskeletal pain because ninety percent of the sample mentioned this factor. Becker et. al. (2017) found the unfamiliarity of both the general practitioner and the patients of the non-pharmacological pain treatment modalities as a barrier for their uptake. These results are in line with the unfamiliarity of the general practitioner about the palette of options, which hinders them in referring towards the right treatment. In relation to the physiotherapy related treatments, it was mentioned general practitioners often did not seem to make a distinction between the different forms of physiotherapy, because of unfamiliarity with these therapies. It is hard for general practitioners to make a distinction between manual physiotherapy and regular physiotherapy, which results in referring towards the more familiar option, regular physiotherapy (Dikkers, Westerman, Rubinstein, van Tulder, & Anema, 2016). Within this present research the availability of a treatment was mentioned by only two general practitioners while the research of Dikkers, Westerman, Rubinstein, van Tulder, and Anema (2016) found the availability as an important factor related to specialised physiotherapy. The specialised

physiotherapist had to be within their local network and have a short waiting time. This availability might be related to the distance between the doctors' office and the therapy, which was mentioned as an important factor associated with physiotherapy related treatment.

The unfamiliarity of the treatment options in relation to multidisciplinary pain was an important feature within the referral. During the interview several multidisciplinary treatments were mentioned by the interviewers as an example for the general practitioner but they often responded that they were not familiar with this treatment or did not know it existed. In general a multidisciplinary treatment for patients with chronic musculoskeletal pain is well-accepted and proven (Brendbekken, Harris, Ursin, Eriksen, & Tangen, 2016), there has not been done much research on the familiarity with the multidisciplinary treatment options among the general practitioners. Pitt, O'Conner and Green (2008) did find the familiarity of the general practitioners with self-management programmes as a factor for referring. The unfamiliarity with the benefits of this treatment was a barrier for referring towards this non-pharmacological treatment (Becker, et. al., 2017; Rosemann, et. al., 2006), which might also be the case within this study and referring towards multidisciplinary treatment for patients with chronic musculoskeletal pain.

5. Strengths and limitations

A strength of this study is the interpretation and coding of the interview by multiple researchers which increased the reliability of the results. Constantly discussing and checking the codes with multiple researchers ensured an open mind and open approach for creating the codes. The Cohen's Kappa indicated a moderate inter-rater reliability of the final coding scheme. Within the sample there is a wide range in age, years of experience as a general practitioner and satisfaction with referring, which increases the representativeness of the factors found within this study. A sample size of ten participants for a qualitative research design gave a broad spectrum of codes and features on which general practitioners based their referrals.

Another strength of this study are the open questions in the semi-structured interview, because the participant was asked to provide his or her own answer. This qualitative approach allows the general practitioner to explain why they refer certain patients to a certain treatment (Babbie, 2016; Tenny, Brannan, Brannan, & Sharts-Hopko, 2020). The questions were formulated broadly to get a deeper insight, the formulation did not give a cue to the participant of what answers were expected, the general practitioners were able to focus on the factors that took into account. These broad questions give a wide variety of factors influencing the referral by the general practitioner. An advantage of qualitative research in contrast to quantitative research is the opportunity to keep asking questions to compose a clear picture of the features for referring and uncover unexpected factors which are important for the referral instead of testing the familiar features with quantitative research.

When interpreting the findings of the study, some limitations should be taken into consideration. The results could have been influenced by the way of asking questions and the way of coding. The location of the pain was most often mentioned in relation to the pain clinic and hospital which indicates that this is an important feature for referring towards this treatment but some examples were given during the interviews, such as the back clinic in Delden, which is a specialized centre for diagnosing and treating complaints on the vertebral column (www.rugpoli.nl). When general practitioners mentioned the vertebral column, it was coded with location of the pain, this might be an obvious feature for this referral which influenced the results.

The willingness of general practitioners to cooperate to this research was an important factor in this study. The general practitioner indicated that their time and focus was on the COVID-19 pandemic, because a lot of changes had to be made within primary care (Gray, & Sanders, 2020). A large amount of general practitioners were approached via an online article but only

a few participated. The selection of more general practitioners was done by a rehabilitation doctor from a hospital in Almelo, these general practitioners were often referring to this hospital. This might have caused a selection bias and the sample might not be representative for the region Twente. This selection bias might have resulted in participants who were often looking for a physical cause for the chronic musculoskeletal pain, which could have influenced the results. With a small sample size, it is not possible to say something about significant differences, this should be taken into consideration when interpretation the results.

6. Suggestions for further research

As mentioned in the introduction, this research is part of a larger project called PReferral, where the goal is to design a decision support tool for referring patients with chronic musculoskeletal pain. The factors presented in this research can be used to develop this tool in combination with the results from the other studies within this project. In line with the reported limitations, this study focused on the referral of patients with chronic musculoskeletal pain by the general practitioners in the region Twente. Further research should expand the region of the participants to increase the representability. Interviewing more general practitioners makes it possible to say something about significant differences in factors between referrals to the different types of treatment. Another possibility for further research is a focus group interview, the findings of this research are presented and discussed within a group of five general practitioners. A statement is presented to the focus group and they are motivated to discuss the statement. It is important to give every participant the opportunity to respond to the statement and explain why they agree or disagree with the findings of this study. By letting them discuss the case, the knowledge of the general practitioners will grow and more insight in their way of referring will be achieved.

7. Practical implications

Based on the results of this research, the unfamiliarity of the general practitioner with the different treatment options seems to be an important factor for their referral. An implication for improving the familiarity of the general practitioners, would be to educate them about the possibilities for each treatment for patients with chronic musculoskeletal pain. An overview of the network chronic pain within the region Twente, with a combination of the treatment options and patient/complaint characteristics could be made to inform the general practitioners and improve their familiarity. The organisation for general practitioners within the region Twente might have an important role within informing the general practitioners. Their website states that they are anticipating on health care innovations, which can include informing the general practitioners connected to their organisation about the newest treatment options. On the other hand, there is a public social map in the Netherlands where the patients is able to see the possible treatments within their environment. The responsibility of finding the most fitting treatment for their complaints might also be shared between the general practitioner and the patient.

8. Conclusion

Concluding, this study identified different factors important for the referral of a patient with chronic musculoskeletal pain by the general practitioner. Factors important for referring are most often related to physical, psychological or general practitioner factors. A remarkable result is the lack of focus on the social factors associated with the complaint and the unfamiliarity of the general practitioner with the treatment options. The factors mentioned by the participants should be taken into account when setting up a decision support tool and improving the referral process of patients with chronic musculoskeletal pain. It is recommended to further investigate the features for referring of the general practitioners to increase the representativeness of the conclusions. A larger sample also brings the opportunity to say something about significant differences between the different kinds of treatments and the factors related to these referrals.

References

Babbie, E. (2016) *The practice of social research.* (14nd ed.). Cengage learning.

Bair, M. J., Robinson, R. L., Katon, W., & Kroenke, K. (2003). Depression and pain comorbidity: a literature review. *Archives of internal medicine, 163*(20), 2433-2445.

Bee, P., McBeth, J., MacFarlane, G. J., & Lovell, K. (2016) Managing chronic widespread pain in primary care: a qualitative study of patient perspectives and implications for treatment delivery. *BMC Musculoskeletal Disorders, 17*(1), 354. doi: 10.1186/s12891-016-1194-5.

Bekkering G. E., Bala, M. M., Ried, K., Kellen, E., Harker, J., Riemsma, R., Huygen, F. J. P. M., & Kleijnen, J. (2011) Epidemiology of chronic pain and its treatment in the Netherlands. *The Netherlands journal of medicine*, *69*(3), 141-153.

Brekke, M., Hjortdahl, P., & Kvien, T. K. (2001) Involvement and satisfaction: A Norwegian study of health care among 1024 patients with rheumatoid arthritis and 1509 patients with chronic noninflammatory musculoskeletal pain. *Arthritis & rheumatism-arthritis care & research, 45*(1), 8-15.

Brendbekken, R., Harris, A., Ursin, H., Eriksen, H. R., & Tangen, T. (2015) Multidisciplinary Intervention in Patients with Musculoskeletal Pain: a randomized Clinical Trial. *International Journal of Behavioral Medicine, 23*, 1-11. doi: 10.1007/s12529-015-9486-y

Cheng, J. O. S., & Cheng, S.-T. (2019) Effectiveness of physical and cognitive-behavioural intervention programmes for chronic musculoskeletal pain in adults: A systematic review and meta-analysis of randomised controlled trials. *PLoS ONE 14*(10): e0223367. doi: 10.1371/journal.pone.0223367

Convenant Health Deal 'chronische pijn' (2016) Position paper 'Revalidatie bij chronische pijn aan het houdings-en bewegingsapparaat.'

De Jong, L., Janssen, P. G. H., Keizer, D., Köke, A. J. A., Siere, S., Van Bommel, M., Van Coevorden, R. S., Van de Vusse, A., Van den Donk, M., Van Es, A., Veldhoven, C. M. M., & Verduijn, M. M. (2018) NHG-Standaard Pijn. *Nederlands Huisartsen Genootschap*.

Due, T. D., Sandholdt, H., Siersma, V. D., & Waldorff, F. B. (2018) How well do general practitioners know their elderly patients' social relations and feelings of loneliness? *BMC Family Practice*, 19, 34. doi: 10.1186/s12875-018-0721-x

Dwivedi, Y. K., Hughes, D. L., Coombs, C., Constantiou, I., Duan, Y., Edwards, J. S., ... & Raman, R. (2020). Impact of COVID-19 pandemic on information management research and practice: Transforming education, work and life. *International Journal of Information Management, 55*, 102211. doi: 10.1016/j.ijinfomgt.2020.102211

Fishbain, D. A., Pulikal, A., Lewis, J. E., & Gao, J. Chronic pain types differ in their reported prevalence of post-traumatic stress disorder (PTSD) and there is consistent evidence that chronic pain is associated with PTSD: An evidence-based structured systematic review. *Pain Medicine, 18*, 711-735. doi: 10.1093/pm/pnw065

Foster, N. E., Hill, J. C., & Hay, E. M. (2011) Subgrouping patients with low back pain in primary care: are getting any better at it? *Manual Therapy, 16*, 3-8.

Gray, R., & Sanders, C. (2020) A reflection on the impact of COVID-19 on primary care in the United Kingdom. *Journal of Interprofessional Care, 34*(5), 672-678. doi: 10.1080/13561820 .2020.1823948

Gupta, A., Silman, A. J., Ray, D., Morriss, R., Dickens, C., MacFarlane, G. J., Chiu, Y. H., Nicholl, B., & McBeth, J. (2007) The role of psychosocial factors in prediciting the onset of chronic widespread pain: results from a prospective population – based study. *Rheumatology, 46*(4), 666-671. doi: 10.1093/rheumatology/kel363

Hansen, H. S., Rosendal, M., Fink, P., & Risor, M. B. (2013) The general practitioner's consultation approaches to medically unexplained symptoms: A Qualitative Study. *International Scholarly Research Notices Family Medicine*, 2013. doi: 10.5402/2013/541604

International Association for the Study of Pain (2020, 16 july) IASP Announces Revised Definition of Pain. Retrieved from: https://www.iasp-pain.org/publicationsNews/ NewsDetail.aspx?ItemNumber=10475

Itz, C., Huygen, F., & van Kleef, M. (2016) A proposal for the organization of the referral of patients with chronicnon-specific low back pain. *Current Medical Research and Opinion, 32*(11), 1903-1909. doi: 10.1080/03007995.2016.1220933

Kind, S., & Otis, J. D. (2019) The interaction between chronic pain and PTSD. *Current pain and headache reports, 23*(12), 1-7.

Kivits, N., (2017, 29 november) Van spraak naar tekst: vijf transcriptie-apps getest. *Villamedia website over journalistiek.* Consulted from: https://www.villamedia.nl/artikel/van-spraak-naar-tekst-vijf-transcriptie-apps-getest

Krippendorff, K. (1980) Content Analysis: An introduction to its methodology. Sage Publications, Newbury Park.

Kroneman, M., Boerma, W., van den Berg, M., Groenewegen, P., de Jong, J., & van Ginneken, E. (2016). The Netherland: Health system review. *Health systems in transition, 18*(2), 1-239.

Landis, J. R., & Koch, G. G. (1977) The measurement of observer agreement for categorical data. *Biometrics, 3*(1), 159-174.

McAlister, A. M., Ehlert, K. M., Kajfez, R. L., Faber, C. J., & Kennedy, M. S. (2017) Qualitative Coding: An approach to assess inter-rater reliability. *American Society for Engineering Education.*

McHugh, M. L. (2012) Interrater reliability: the kappa statistic. *Biochemia Medica, 22*(3), 276-282.

Meints, S. M., & Edwars, R. R. (2018) Evaluating psychosocial contribution to chronic pain outcomes. *Progress in Neuro-Psychopharmacology and biological psychiatry, 87*, 168-182. doi: 10.1016/j.pnpbp.2018.01.017

Mittinty, M. M., Vanlint, S., Stocks, N., Mittinty, M. N., & Moseley, G. L. (2018) Exploring effect of pain education on chronic musculoskeletal pain patients' expectation of recovery and pain intensity. *Scandinavian journal of pain, 18*(2), 211-219. doi: 10.1515/sjpain-2018-0023.

NHG-werkgroep Pijn (2018) NHG-Standaard Pijn. www.nhg.org.

Peppin, J. F., Cheatle, M. D., Kirsh, K. L., & McCarberg, B. H. (2015) The complexity model: a novel approach to improve chronic pain care. *Pain Medicine, 16*(4), 653-666. doi: 10.1111/pme.12621

Pitt, V. J., O'Connor, D., & Green, S. (2007) Referral of people with osteoarthritis to self-management programmes: Barriers and enablers identified by general practitioners. *Disability and Rehabilitation, 30*(25), 1938-1946.

Regieraad Kwaliteit van Zorg (2011) *Chronische pijn.* Den Haag.

Rijksoverheid (n.d.) *Is fysiotherapie opgenomen in het basispakket?* https://www.rijksoverheid.nl/onderwerpen/zorgverzekering/vraag-en-antwoord/is-fysiotherapie-opgenomen-in-het-basispakket

Rosemann, T., Wensing, M., Joest, K., Backenstrass, M., Mahler, C., & Szecsenye, J. (2006) Problems and needs for improving primary care of osteoarthritis patients: the views of patients, general practitioners and practice nurses. *BMC Musculoskeletal Disorders, 7*(48). doi: 10.1186/1471-2474-7-48

Salduker, S., Allers, E., Bechan, S., Hodgson, R. E., Meyer, F., Meyer, H., Smuts, J., Vuong, E., & Webb, D. (2019) Practial approach to a patient with chronic pain of uncertain etiology in primary care. *Journal of Pain Research, 12*, 2651-2662. doi: 10.2147/JPR.S205570

Scascighini, L., Toma, V., Dober-Spielmann, S., & Sprott, H. (2008) Multidisciplinary treatment for chronic pain: a systematic review of interventions and outcomes. *Rheumatology, 47*(5), 670-678. doi: 10.1093/rheumatology/ken021

Tenny, S., Brannan, G. D., Brannan, J. M., & Sharts-Hopka, N. C. (2020) Qualitative study. *StatPearls*.

Tseli, E., Boersma, K., Stalnacke, B., Enthoven, P., Gerdle, B., Äng, B. O., & Grooten, W. J. A. (2019) Prognostic factors for physical functioning after multidisciplinary rehabilitation in patients with chronic musculoskeletal pain. *The Clinical Journal of Pain, 35*(2), 148-173. doi: 10.1097/AJP.0000000000000669

Tzartzas, K., Oberhauser, P. N., Marion-Veyron, R., Bourquin, C., Senn, N., & Stiefel, F. (2019) General practitioners referring patients to specialists in tertiary healthcare: a qualitative study. *BMC Family Practice, 20*(1), 1-9. doi: 10.1186/s12875-019-1053-1

Ushida, T. (2015) Burdensome problems of chronic musculoskeletal pain and future prospects. *Journal of orthopaedic science, 20*(6), 958-966. doi: 10.1007/s00776-015-0753-1

Van der Zwet, J., Koelewijn – van Loon, M. S., & Van den Akker, M. (2009) Lonely patients in general practice: a call for revealing GPs' emotions? A qualitative study. *Family Practice Advance, 26,* 501-509. doi: 10.1093/fampra/cmp059

Verbunt, J. A., Swaan, J. L., Schiphorst - Preuper, H. R., & Schreurs, K. M. G. (2019) Handboek Pijnrevalidatie. Bohn Stafleu van Loghum, Houten.

Vereniging Samenwerkingsverband Pijnpatiënten naar één stem (2017) Zorgstandaard Chronische Pijn. Leiden.

Vissers, A., Verburg, M., & van der Heijden, A. (2019) Het perspectief van zorgvragers en verwijzers op het keuzeproces voor vervolgzorg. *Gepast verwijzen.*

Vollebregt, M. (2020) Automatisch transcriberen? Bepaald nog niet perfect. *J. lab*. Consulted from: https://www.journalismlab.nl/automatisch-transcriberen-bepaald-nog-niet-perfect/

Waterschoot, F. P. C., Bennen, E., Van der Woude, L. H. V., Schiphorst Preuper, H. R., & Reneman, M. F. (2015) Case complexity in patients with chronic nonspecific musculoskeletal pain. *International Journal of Rehabilitation Research, 0.* doi: 10.1097/MRR.0000000000000144

Werkgroep Pijnrevalidatie Nederland (2017), Position Paper 'Medisch Specialistische Revalidatie bij Chronische pijn aan houdings- en bewegingsapparaat'.

Appendix 1. Semi-structured interview

Informatie vooraf

- Leeftijd
- Geslacht
- Aantal jaren werkzaam
- Werkzaam in stad/dorp
- Solo-/groepspraktijk
- Welk cijfer zou u uw affiniteit met patiënten met chronische pijn aan het houdings- en bewegingsapparaat geven (0-10)?
- In hoeverre bent u tevreden met het doorverwijzen van uw patiënten chronische pijn aan het houdings- en bewegingapparaat (0-10)?

Algemeen

Het begin van dit interview start met enkele algemene vragen over de verwijzing van patiënten met chronische pijn aan het houdings-en bewegingsapparaat.

1. Als u denkt aan chronische pijn patiënten, maakt u dan onderscheid tussen bepaalde groepen of kenmerken van patiënten?
2. Op grond van welke criteria verwijst u een patiënt met chronische pijn waar naar toe? (richtlijnen, cursussen, nascholing)
3. Welke bronnen gebruikt u voor de verwijzing van een patiënt met chronische pijn? En wanneer wordt hiervan afgeweken?
    a. Wordt er getriageerd m.b.v. vragenlijsten? Zo ja, welke?
    b. Wordt er getriageerd m.b.v. andere meetinstrumenten? Zo ja, welke?
    c. Wordt er getriageerd m.b.v. observaties? Zo ja, welke?
4. Welke mogelijkheden voor verwijzing zijn er in de 1e, 2e en 3e lijn?

1e lijn

De volgende vragen gaan wat specifieker in op de verwijzing van patiënten met chronische pijn aan het houdings-en bewegingsapparaat naar verschillende zorgverleners.

5. Wanneer verwijst u een chronische pijn patiënt door naar de eerstelijnspsycholoog?
6. Wanneer verwijst u een chronische pijn patiënt door naar de psychosomatische fysiotherapie?
7. Wanneer verwijst u een chronische pijn patiënt door naar de manuele fysiotherapie?
8. Wanneer verwijst u een chronische pijn patiënt door naar de reguliere fysiotherapie/oefentherapie?
9. Wanneer verwijst u een chronische pijn patiënt door naar de leefstijlcoach/gecombineerde leefstijl interventie (GLI)?
10. Wanneer verwijst u een chronische pijn patiënt door naar de POH-GGZ?
11. Wanneer verwijst u een chronische pijn patiënt door naar de POH?
12. Wanneer verwijst u een chronische pijn patiënt door naar de eerstelijnsergotherapeut?
13. Wanneer verwijst u een chronische pijn patiënt door naar psychomotorische therapie (PMT) in de eerste lijn?
14. Wanneer verwijst u een chronische pijn patiënt door naar maatschappelijk werk in de eerste lijn?
15. Wanneer verwijst u een chronische pijn patiënt door naar de alternatieve geneeswijzen (masseur, acupunctuur, chiropractor, osteopathie, homeopathie)?
16. Wanneer verwijst u een chronische pijn patiënt door naar een anderhalve lijn centrum (PRNL, DBC)?
17. Wanneer verwijst u een chronische pijn patiënt door naar interdisciplinaire pijnrevalidatie (Medinello, OCA, ZGT/MST)?

2e/3e lijn

18. Wanneer verwijst u een chronische pijn patiënt door naar een pijncentrum (Nocepta, Rugpoli Delden)?
19. Wanneer verwijst u een chronische pijn patiënt door naar de revalidatiegeneeskunde (Roessingh)?
20. Wanneer verwijst u een chronische pijn patiënt door naar een SOLK poli?
21. Wanneer verwijst u een chronische pijn patiënt door naar de GGZ (Dimence)?
22. Zijn er nog andere verwijsmogelijkheden en welke kenmerken/factoren passen daarbij?

Overige/geen verwijzing

23. Welk beleid hanteert u als u een patiënt verwijst, maar de patiënt nog lang moet wachten op de wachtlijst?
    a. Waar zou u behoefte aan hebben als dit het geval is?
24. Wanneer vindt er geen verwijzing plaats?
25. Wanneer wordt ervoor gekozen om een patiënt met chronische pijn met medicatie te behandelen?
26. Welke patiënten met chronische pijn ziet u ondanks behandeling steeds weer terug komen op het spreekuur?
    a. Kunt u beschrijven hoe u hiermee omgaat? (ongeduld, irritatie, gevoelens van machteloosheid)
27. Wanneer verwijst u een reeds behandelde patiënt niet meer en is naar uw idee geen behandeling meer mogelijk/zinvol? (helemaal geen behandeling meer)
    a. Kunt u een beschrijving geven van de patiënt die uiteindelijk niet meer verwijsbaar is?

Patiënt factoren

De volgende vragen gaan over verschillende patiëntgerelateerde factoren die een rol kunnen spelen bij de verwijzing.

28. Welke punten/eisen die een patiënt belangrijk vindt worden meegenomen bij de verwijzing?
    b. Beïnvloedt de somatische gerichtheid van de patiënt de verwijzing?
    c. Als een patiënt de pijn nog niet accepteert als somatisch onverklaarbaar, wat doet u dan? En heeft dit invloed op de verwijzing?
    d. Welke rol heeft de omgeving van de patiënt bij een verwijzing? (familieomstandigheden, jonge kinderen, mantelzorg etc.)
    e. Speelt de verzekering van de patiënt een rol bij de verwijzing ? Zo ja, hoe?
    f. Welke rol spelen werk en de bedrijfsarts bij een verwijzing?

Externe factoren

29. Welke factoren in relatie tot de verschillende zorgaanbieders, anders dan behandelinhoudelijk, kunnen een rol spelen bij de verwijzing van een patiënt met chronische pijn?

Huisarts factoren

30. Heeft u tijdens uw opleiding (tot huisarts) scholing ontvangen op het gebied van chronische pijn aan het bewegingsapparaat?
31. Heeft u nascholing gevolgd op het gebied van chronische pijn?
    a. Hoe lang geleden?
    b. Waarom kiest u hier wel/niet voor?
    c. Wat is/was de kwaliteit van deze nascholing?

Tot slot

32. Zijn er aspecten van belang bij de verwijzing van patiënten met chronische pijn waarnaar niet is gevraagd?
33. Wat zou er naar uw idee anders moeten in het huidige verwijsproces van de patiënt met chronische pijn?
    a. In hoeverre zou een beslishulp (zoals de tool die we gaan ontwikkelen) helpen?
    b. Hoe ziet u het gebruik van een beslishulp voor zich? (online/offline)
    c. Wanneer zou u deze beslishulp vooral willen gebruiken?

Bedankt & afsluiting

Dit waren alle vragen. We danken u van harte voor deelname aan dit onderzoek en mocht u op de hoogte willen blijven van de resultaten, dan is dit zeker mogelijk.

Appendix 2. Newsletter

PReferral project van UT en Roessingh

In meer dan 30% van de gevallen worden patiënten met chronische pijn na verwijzing door de huisarts en intake in een behandelinstelling teruggestuurd naar de huisarts voor een verwijzing naar een andere zorgverlener. Dit is frustrerend voor zowel patiënt als huisarts. De patiënt wacht nog steeds op passende zorg en de huisarts moet op zoek naar een andere behandelaar en opnieuw een verwijzing maken.

Het doel van het PReferral project is het ontwikkelen van een praktische decision support tool die de huisarts ondersteunt bij de verwijzing van een patiënt met chronische pijn naar de best passende zorgverlener in regio Twente. Om dit doel te bereiken dient onder meer in kaart gebracht te worden wat de precieze verwijscriteria zijn die huisartsen momenteel hanteren voor deze patiënten. De onderzoekers willen huisartsen uit de regio interviewen om een beeld te krijgen van de huidige keuzecriteria. Het interview vindt online plaats en neemt maximaal een klein uur in beslag.
Bent u geïnteresseerd of hebt u vragen? Neem dan contact op met Peter van Aken, medisch adviseur GGZ.

Appendix 3. Additional information PReferral project.

PReferral project

Onderzoeksgroep:

- Dr. ir. W. Oude Nijeweme – d'Hollosy (UT)
- Dr. ing. G. Prosman (Roessingh)
- Dr. A.A.J. Konijnendijk (UT) - Dr. M. Poel (UT)
- Dr. R. Soer (Saxion)
- Drs. J. Broeks (Roessingh/ZGT)
- Dr. N.P. Monteiro de Oliveira (Nocepta/ZGT)
- Drs. ir. D.J. Jansen (UT)
- Drs. E.S. Slatman (UT)

Achtergrond

In Nederland is de prevalentie van chronische pijn bij volwassenen ongeveer 20%. Patiënten met chronische pijn rapporteren een lagere kwaliteit van leven in vergelijking met andere patiëntengroepen met chronische aandoeningen en de jaarlijks maatschappelijke kosten van chronische pijn in het houdings- en bewegingsapparaat bedragen ruimt €4 miljard aan directe (zorg) en indirecte (veelal arbeidsverzuim) kosten. Om de ziektelast bij chronische pijn te minimaliseren, dient zo vroeg mogelijk een passende behandeling gestart te worden. Het hangt onder andere af van de complexiteit van de casuïstiek, de locoregionale deskundigheid en organisatie van zorg of een patiënt het best behandeld kan worden in de 1e -, 2e - of 3e -lijnszorg. In meer dan 30% van de gevallen worden patiënten na verwijzing door de huisarts en intake in een behandelinstelling teruggestuurd naar de eerste lijn voor een verwijzing naar een andere zorgverlener. Dit kost veel tijd en moeite voor de huisartsen en patiënten moeten lang wachten voordat een passende behandeling kan plaatsvinden. Uit een eerste inventarisatie binnen het netwerk (o.a. UT, Saxion, Roessingh en MST) blijkt dat de verwijscriteria voor verwijzers en de factoren die voorspellend zijn voor een effectieve behandeling onbekend zijn. Naar aanleiding van deze inventarisatie en de daaruit voortkomende vraagstelling is het PReferral project gesubsidieerd vanuit een samenwerkingsverband tussen onder andere de Universiteit Twente, ZGT en Roessingh.

Doel

Het doel van dit onderzoek is enerzijds het identificeren van verwijscriteria die huisartsen gebruiken bij het verwijzen van patiënten met chronische pijn naar de 1e , 2e , of 3e -lijnszorg, anderzijds de voorspellende factoren op behandeluitkomsten vanuit zowel het perspectief van de patiënt als de zorgverlener te verduidelijken. Het onderzoek kent een aantal werkpakketten:

1. Verwijsfactoren vanuit het perspectief van de huisartsen

2. Componenten pijnbehandeling vanuit het perspectief van de patiënt
3. Componenten pijnbehandeling vanuit het perspectief van de zorgverlener
4. Ontwikkeling van een proof-of-concept van de decision support tool
5. Pilot decision support tool en implementatie

De informatie uit deze werkpakketten zal gebruikt worden voor het ontwikkelen van een praktische decision support tool om huisartsen te ondersteunen bij het verwijzen van patiënten met chronische pijn naar de juiste behandelinstelling of "het juiste adres" in onze regio. Een passendere verwijzing zal leiden tot een betere kwaliteit van zorg, minder ziektelast voor de patiënt en minder verwijslast voor de huisarts (Itz, Huygen, & Kleef, 2016).

Onderzoek huisartsen

In het eerste werkpakket van dit onderzoek zal informatie worden verzameld onder huisartsen. Om meer inzicht te verkrijgen in de criteria die huisartsen in Twente gebruiken bij het verwijzen van patiënten naar de 1e , 2e , of 3e -lijnszorg, zouden we graag online een aantal individuele interviews afnemen (tot saturatie) en eventueel, afhankelijk van de bevindingen, op een later moment focusgroepen organiseren. Het interview zal gehouden worden m.b.v. een vooraf opgestelde vragenlijst met open vragen en zal maximaal 1 uur in beslag nemen. Ter voorbereiding worden de interviewvragen vooraf opgestuurd zodat er alvast over de vragen nagedacht kan worden.

Bronnen

Itz, C., Huygen, F., & Kleef, M. van. (2016). A proposal for the organization of the referral of patients with chronic non-specific low back pain. *Current Medical Research and Opinion*. Taylor and Francis Ltd. https://doi.org/10.1080/03007995.2016.1220933

Appendix 4. Explanation codes

The different categories and codes are explained and citations of the general practitioners are presented within this appendix.

The first category was **physical factors**, there were multiple features focussing on the physical side of the complaint. The different codes within this category were somatic explainability, location of the pain complaint, specific clinical picture, type of pain complaint and duration of the pain complaint.

Somatic explainability – this code was used when the general practitioner described the physical explainability of the complaint. Whether there was a known underlying physical cause that explains the pain of the patient. This code was applied when the general practitioner spoke about explaining the pain and finding the somatic cause. For example: "*If you are still on an organic substrate, you are often looking into neurology and orthopaedics"* (general practitioner 6).

Location of the pain – the pain experience of the patient could be located in different body parts such as the neck, knee, hip or back. General practitioner 3 said: *"If you have more or less solitary back or neck complaints, say for spine-related complaints…*".

Specific clinical picture – there was a diagnosis for the complaints of the patients which influenced the referral. For example general practitioner 8 said: *"I refer people with herpes or shingles, they have pain complaints for possibly several options".*

Type of pain complaint – there were different types of pain complaint, for example neurological pain, oncological pain and posture related pain. This code was applied when a specific type of pain was mentioned by the general practitioner. The type of pain was a criteria for a referral, according to general practitioner 2 : "*…. I refer to them when I think it mainly concerns neurogenic pain"*.

Duration pain complaint – this code referred to the period a patient was suffering from the pain. Some general practitioners related a specific referral to the phase a patient was in, when the patient was already suffering for years or just for months made a difference for the referral. For example, general practitioner 7 said: *".. quite in the beginning, so if someone has back pain, they are going to the physiotherapist pretty quickly."*

The second category was **psychological factors**. The code for this category was psychological complaints.

Psychological complaints – this code contained the different complaints the patient suffered from associated with their mental health. There were psychological complaints present such as feelings of depression or anxiety. Trauma related mental health problems were also coded with this code. An example from general practitioner 1: *"That is more if there is really underlying, real psychological suffering, so, if there is also depression and anxiety, especially much more in the foreground."*

The third theme was **complaint characteristics**, the different codes were comorbidity, complexity and vicious cycle.

Comorbidity – this was the occurrence of two or more complaints in one patient at the same time, this was a combination of a physical and psychological complaints. An example of general practitioner 1 was: "*Especially if there are indeed often several things playing…. for example. I have had a patient with a car accident and he does indeed continue to have chronic neck pain, but also concentration problems and forgetfulness, so several things in several areas, complaints."*

Complexity – this code referred to the complexity of the pain, estimated by the general practitioner as more or less complex. General practitioner 3 gave an example of referring based on the complexity: ".. *for more complex problems, I refer to Roessingh and for simpler problems to Medinello*".

Vicious cycle – this code contained a description of patients who were experiencing struggles in multiple domains. The domains people suffered in were often psychological or physical problems combined with social or work problems. These different types of problems were increasing the other problem, which caused a vicious cycle which was hard to break. The people got stuck in their way of living. An example from general practitioner 5 was: "*When a patient gets stuck in a vicious cycle of: hey I don't move anymore because I have so much pain..".*

The fourth category was **patient characteristics**, within this category all the codes defined a characteristic of the patient. The different codes were treatment history, functioning, referral request patient, level of acceptation, motivation patient and load ability.

Treatment history – patients with chronic musculoskeletal pain often had treatment before. Earlier referrals could to diagnostics, physical treatment, psychological treatment or medicine use. An example of general practitioner 1: "*before you refer there, most of the patients are*

patients with whom you have had, ofcourse, a part of the trajectory where you have already had the physical therapy, have used several things…".

Functioning – daily functioning, such as doing the household, and physical functioning, such as being able to walk, were combined within this code. A citation coded within this code from general practitioner 5: "*.. if there really is a specific act or function where they are in a lot more pain. Then an occupational therapist is very helpful*".

Referral request – the patient could have a request for a referral to a specific treatment or institution but this might also be a request for a somatic treatment instead of a psychological consult. General practitioner 1 said: "… *and in 90 percent of the back clinic, it is mainly the back pain patients who go that way with a request"*.

Level of acceptation pain – this code contained statements about the level of acceptation of the patient. There was a level of acceptation related to accepting the pain, that pain was chronic and a level of acceptation that there was no physical cause to explain the pain. For example general practitioner 2 said: "*patients who are open for and realise their pain is chronic and there is not a physical cause and they have to live with it, you can often go to primary care with these patients*" as a feature for referring the patient towards a first line psychologist.

Level of acceptation treatment - This code contained the acceptation of the treatment offered by the general practitioner. The patient should be open for trying out the treatment and maybe treating the psychological complaints instead of the physical complaints. General practitioner 5 stated: *"There is no point in referring people to the SOLK-clinic if they do not support it. That is pointless, completely pointless".*

Motivation – motivation drove a patient to a certain behaviour and commitment to the treatment. This code was used when it was not just about being open for a treatment but also being committed and willing to invest. A citation from general practitioner 5 in relation to the revalidation clinic was: "*the people have to be willing to invest heavily*".

Loadability - The (work) burden that an individual or part of the individual could bear, both on the mental and physical level. General practitioner 3 described: *"Look at most chronic patients you have or the fibromyalgia patients, but they are more likely to go to such a psychosomatic physiotherapist or a psychologist, because you often have load-bearing problems there too".*

Lifestyle – the patient had a way of living with certain habits that have influenced their life, for example smoking or having overweight. General practitioner 1 gave the following example: *"I certainly think if, of course, for example overweight and too little exercise, plays a role in the chronic pain."* in relation to a referral to a lifestyle coach.

Insurance – within the Netherlands, people got to choose their own insurance company and package. Not every company or package covered every treatment and this influenced the referral of the general practitioner. General practitioner 2 stated: "*.. with physiotherapy, patients are quickly at the point where they have to pay for their treatment, this certainly plays a part*".

The fifth category is **general practitioners factors**, the features related to the general practitioner were combined within this category. The codes were knowledge, professional opinion, competence, expected recovery period and experience.

Unfamiliarity with treatment options – the general practitioner was not always familiar with the different options for referring, the possibilities within a treatment or which patients were accepted in a certain clinic. General practitioner 7 said: *Allright, the psychosomatic therapist and psychomotor therapist, I thought it was kind of the same."*

Professional opinion – the opinion of a general practitioner about the treatment or the practitioner of a clinic. General practitioner 7 described: "*No, you don't have that many exercise therapists in our area who do that. We had one in the village, but I didn't think he was good"*. Because the general practitioner did not think it was a good exercise therapist, patients were not referred to this therapist.

Competence – the ability to understand the patient and the complaint were influencing the referral. The competence of the general practitioner to diagnose or treat the patient had influenced the referral. For example, general practitioner 3 described: "*Yes, look at fibromyalgia, I can officially make that diagnosis myself, according to the guidelines. But it is such a loaded diagnosis that I often choose to refer them anyway, that I actually do a second opinion of myself."*

Expected recovery period: when a patient was presenting their complaints to the general practitioner, an estimation was made of the time the complaint would precede. An example of general practitioner 4, in relation to the psychosomatic therapist was: *"if it is something for a shorter project, if I estimate we can tackle the complaint a bit faster and in a more active way."*

Experience – this code related to the experience of the general practitioner with the patient and the complaint. The general practitioner did refer to his experience in the working field as a criteria for referring patients. For example: "*... based on my experience, intuition and offer."* (general practitioner 6).

Advice therapist or doctor – The general practitioner or patient could have received an advice for a referral from a specialist, therapist or company doctor. This advice did not always

result in a referral. An example from general practitioner 2 was: *"sometimes people come up with the story that they need a referral from the company doctor for an mri or something."*

The sixth category is **treatment characteristics**, the features related to the treatment were combined within this category. The different codes within this category were experience with treatment, distance, waiting list and bridging waiting list.

Experience with treatment – this code referred to the opinion and the obtained information during earlier consults at a specific treatment. This code was related to the experiences of the general practitioner and the patient with a certain practitioner that influenced the referral. General practitioner 1 described: *"In the first line, of course, we have the ordinary physiotherapist and the psychosomatic therapist, but I must say that I mainly refer to the Cesar therapist because we have good experiences with them"*

Distance – this code referred to the distance between the village the general practitioner/patient was practicing and the therapist. An example of general practitioner 6 was: "*patients in Haaksbergen think it is quite a thing to go to Enschede for a physiotherapist or an occupational therapist*".

Waiting lists treatment - Health care institutions in the region Twente had varying waiting lists. General practitioners took these waiting times into consideration when choosing a referral, for example general practitioner 5: "*… and then I prefer to refer a patient to the rehabilitation clinic, because the waiting time is not too bad*".

Bridging waiting list – to bridge the gap between the contact with the general practitioner and the referred treatment, the patient was referred to other therapists. An example from general practitioner 4 was: *"The physiotherapist does some maintenance, yes, so keep it down, that is the policy on the waiting list".*

Appendix 5. All codes by treatment categories.

Table 5

All codes by treatment

	General Practitioner care	Physiotherapist related care	Occupational therapist	Other monodisciplinary care	Mental health care	Hospital/Pain clinic	Multidisciplinary care	Total
Physical factors								
Somatic explainability	0	2	0	1	2	8	6	10
Location pain complaints	0	5	2	3	0	8	1	10
Specific clinical picture	2	1	2	2	0	5	2	8
Type of pain complaint	0	6	0	1	0	4	1	8
Duration pain complaint	0	4	0	1	1	2	2	7
Function pain	0	1	0	0	2	1	1	2
Operable	0	0	0	0	0	2	0	2
Pain intensity	0	0	0	0	0	1	0	1
Outcome physical examination	0	0	0	0	0	0	0	1
Psychological factors								
Psychological complaints	6	1	0	2	8	0	5	10
Psychological cause complaints	2	1	0	0	3	0	1	5
Level of acceptation treatment	0		0	1	1	0	5	9
Level of acceptation pain		5		1	2		6	
DSM-5 diagnosis	0	0	0	0	3	0	0	3
Stress	0	0	0	0	1	0	0	2
Burn-out	0	0	0	0	1	0	0	1
Complaint factors								
Comorbidity	0	2	0	2	2	1	7	8

Complexity	5	4	0	0	4	2	5	8
Vicious cycle	0	4	0	0	0	0	5	6
Cause pain	1	1	0	1	0	1	4	5
Tension	1	1	0	0	1	0	0	4
Headache	0	1	0	0	0	0	1	2
Tiredness	0	0	0	0	0	0	2	2
Problems with sleeping	0	0	0	0	0	0	1	1
Forgetfulness	0	0	0	0	0	0	1	1
Concentration problems	0	0	0	0	0	0	1	1
Singular paincomplaint	0	1	0	0	0	2	0	2
Urgency	1	0	0	0	0	0	0	1
Occassion pain complaints	0	0	0	0	0	0	0	1
Level of suffering	0	0	0	0	0	0	0	1
Fear of moving	0	1	0	0	0	0	0	1
Psychosomatic complaints	0	0	0	0	0	0	0	1
Patient factors								
Treatment history	0	1	0	2	3	4	7	10
Functioning	1	2	5	1	0	1	4	10
Referral request patient	0	1	0	3	0	5	1	10
Motivation patient	0	1	0	2	2	0	4	7
Loadability	1	2	0	1	2	0	3	6
Lifestyle	1	1	0	5	0	0	0	5
Insight patient	2	2	0	0	2	0	4	5
Request for help	0	0	0	0	0	0	1	5
Age patient	0	1	1	0	0	0	0	4
Coping	0	1	0	1	2	0	2	4
Caregiver	0	0	0	0	0	0	0	3
Intelligence patient	1	0	0	1	1	0	0	3
Social economic status	0	0	0	2	0	0	0	2
Personality traits	0	0	0	0	0	0	1	2

Experience body	0	1	0	1	0	0	0	2
Social obligation	0	0	0	0	0	0	0	2
Gender patient	0	0	0	0	0	0	0	1
General practitioner factors								
Knowlegde GP with treatment	1	7	2	4	2	1	7	9
Professional opinion GP	0	5	0	2	1	4	4	8
Competence GP	1	0	0	2	1	3	2	7
Expected recovery period	0	3	0	1	2	0	0	6
Experience GP	0	0	0	0	0	0	0	6
NHG standard	0	0	0	0	0	0	0	3
Referral options	0	2	0	0	0	1	1	2
Docter - patient relation	0	0	0	0	0	0	1	1
SOLK standards	0	0	0	0	0	0	0	1
Treatment factors								
Experience with treatment	0	6	0	3	0	7	6	9
Distance treatment	1	6	0	1	1	2	1	7
Waiting list treatment	1	1	0	0	2	4	3	6
Availability treatment	0	2	0	1	0	0	0	3
Objective treatment	0	0	0	0	0	1	0	1
Specialist referral needed	0	0	0	0	0	0	0	1
Accessibility treatment	0	0	0	0	0	0	0	1
External factors								
Waitlist bridging	4	5	0	0	0	0	0	6
Advice therapist or doctor	0	1	0	0	0	0	1	6
Insurance	0	6	0	1	2	2	3	6
Financial problems	0	0	0	2	0	0	0	3
Financial situation	1	0	0	1	0	0	0	4
Social environment	0	0	0	0	0	0	2	4
Problems in social life	0	0	0	1	0	0	0	2

Influence environment patient	0	0	0	0	0	0	0	3
Problems social-cultural	0	0	0	0	0	0	2	2
Problems at work	0	0	0	2	2	0	0	3
Work patient	0	0	0	0	0	0	0	2
Work type	0	0	0	0	0	0	0	2
Work physcial activity	0	0	0	0	0	0	0	2
Problems at home	0	0	0	4	2	0	0	4
Situation at home	0	0	0	0	0	0	2	2
Specialist referral	0	0	0	0	1	2	1	2
Automatic referral	0	0	0	0	0	0	1	1
Second opinion	0	0	0	0	1	0	0	1
Course of medication use	0	0	0	0	0	0	1	1
Personal injury claim	0	0	0	0	0	0	0	1