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ORIGINAL REPORT

REASONS FOR DROP-OUT FROM REHABILITATION IN PATIENTS OF TURKISH AND MOROCCAN ORIGIN WITH CHRONIC LOW BACK PAIN IN THE NETHERLANDS: A QUALITATIVE STUDY

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Objective: **To explore which factors led to drop-out in patients of Turkish and Moroccan origin with chronic non-specific low back pain who participated in a rehabilitation programme.**

Subjects: **Patients of Turkish or Moroccan origin with chronic non-specific low back pain ($n = 23$) from 2 rehabilitation centres and 4 rehabilitation departments of general hospitals in the Netherlands.**

Methods: **In-depth semi-structured interviews were conducted with patients of Turkish and Moroccan origin ($n = 23$), rehabilitation physicians ($n = 8$) and rehabilitation therapists ($n = 2$). Interviews were transcribed or summarized and subsequently coded and analysed according to themes.**

Results: **Most patients dropped out due to expectations of a specific medical diagnosis and pain relief as the main aims of rehabilitation treatment. Other reasons for drop-out detected in the interviews were: lack of acknowledgement of the patient's complaints, lack of trust in the rehabilitation physician, contradicting views to those of the physician from the patients' country of origin with regard to the cause and treatment of pain, and communication problems.**

Conclusion: **The major reason for drop-out was patients having different expectations, from those of their health providers, of the aim of treatment, as a result of a different view of the origin and treatment of low back pain.**

Key words: rehabilitation; patient drop-outs; low back pain; minority health.

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INTRODUCTION

Patients with chronic non-specific low back pain can benefit from rehabilitation programmes. The aim of these rehabilitation programmes, which are based on physical training and behavioural cognitive training, is to improve the health-related quality of life of patients by coaching them to cope with their pain and its consequences (1). Drop-out from low back pain rehabilitation of non-native patients (28.1%) in the Netherlands has been reported to be twice as high as in native Dutch patients (13.7%); the overall drop-out rate is 18.7% (2). The higher drop-out rate of non-native patients is consistent with a study conducted in mental healthcare. In that study the drop-out rate was significantly higher in ethnic minority patients (52%) compared with native patients (30%) (3). Furthermore, the overall drop-out rate in patients with low back pain (18.7%) (2) is consistent with those of previous studies in patients with (low back) pain, which found drop-out rates ranging from 10% to 42% (4–6).

There is, however, limited knowledge of the causes of this higher drop-out rate in non-native patients. In a qualitative study, sources of tension in the interaction between non-native patients and native Dutch physicians in chronic non-specific low back pain rehabilitation treatment have been identified (7). These sources of tension, found directly after the first consultation with the rehabilitation physician, were: patients expecting a specific diagnosis and pain relief as the primary aims of treatment; more explicit symptom presentation of patients; different views on responsibilities with regard to the rehabilitation treatment (physicians implied that patients expected more responsibility to be taken by the physician); lack of trust in the rehabilitation physician; contradicting views given by physicians from the patients' country of origin with regard to the cause and treatment of pain; and communication problems, partly due to shame and embarrassment about patients' limited language proficiency in Dutch. These sources of tension potentially lead to future drop-out.

More sick leave days (4, 8, 9), higher pain severity (9, 10), being less active in sports (4), a lower age (9) and the idea that exercise did not help or aggravated pain (11) have been identified as predictors of drop-out in low back pain rehabilitation programmes. A systematic review of qualitative and quantitative studies in patients with low back pain regarding

their expectations and satisfaction with treatment (12) showed that patients in general (i.e. not specifically selected for a non-native background) are dissatisfied with low back pain treatment for a number of reasons, including: not obtaining a specific diagnosis of the pain; pain relief not being the main aim of treatment; lack of physical examination and diagnostic tests; lack of referrals to other therapy or specialists for further treatment; no possibility of sickness certification. This review study seems to show that patients with low back pain often have different expectations regarding the content of treatment. Other sources of dissatisfaction reported in this review are: limited information and instructions provided by the health workers; and care providers lacking the ability to listen, show respect and include the patient in decision-making. These sources of dissatisfaction are potential reasons for refusal of, or withdrawal from, the prescribed rehabilitation treatment.

The expectations of non-native patients about the content of treatment of chronic low back pain seem to differ from those of native physicians (7). A possible explanation for these different expectations is that non-native patients often have a different view of the treatment of chronic low back pain (7). This might be a result of a different process of proto-professionalism, which is influenced by a lack of proficiency in the Dutch language and being brought up in a different (cultural) context and healthcare system. The process of proto-professionalism, also known from the medical education of physicians (13), refers to the process whereby patients gain more information on causes and treatment of diseases and develop a view of the cause and treatment of symptoms (14). The process of proto-professionalism has taken place through education and easily accessible popular medical information on the television and internet. Patients' knowledge regarding illness and treatment are incorporated into a personal explanatory belief model, which influences the understanding and subsequent use of healthcare programmes (15). In order to improve adherence to rehabilitation treatment, the explanatory models held by the patient and the health providers need to match.

The study described above (7) regarding sources of tension in the rehabilitation of patients with chronic non-specific low back pain was performed in patients who had not dropped out. The above-mentioned review study (12) did not focus on reasons for drop-out in non-native patients. The present explorative study therefore aimed to determine reasons for drop-out in non-native patients with chronic non-specific low back pain who dropped out from the diagnostic or treatment phase of a rehabilitation programme in the Netherlands. Patients, their physicians, and in some patients also their rehabilitation therapist, were interviewed on the course and content of the rehabilitation treatment.

METHODS

Design

A qualitative research method was used to explore the notions and beliefs of patients and physicians regarding the prematurely ended rehabilitation trajectory and the reasons for drop-out. Drop-out can occur in the diagnostic phase or the treatment phase. The diagnostic phase is defined as the phase in which the rehabilitation physician performed diagnostic examinations, checked information from the referring physician or X-rays in order to exclude a somatic cause for the chronic low back pain. In the treatment phase the rehabilitation team, comprising physical therapists, psychologists, occupational therapists and social workers under the direction of the rehabilitation physician, treated the patient. The interviews were held after the patients dropped out from the rehabilitation programme.

Participants

The participants were patients of Turkish ($n = 12$) and Moroccan origin ($n = 11$), because an earlier study, conducted in some of the same participating institutes as the current study, showed that these patients had high drop-out rates (2). These patients belong to the largest groups of non-native patients in the Netherlands. Although there are cultural differences between the 2 subgroups of patients, the groups in this study were too small to be presented separately. In addition to the cultural differences between the 2 subgroups there are also many similarities between the groups regarding their socioeconomic circumstances and migration history. Persons from Turkish and Moroccan background in the Netherlands who belong to first-generation labour migrants or who migrated for reasons of family reunification have frequently received limited education, have a comparable position on the Dutch labour market (16), and live in the more deprived areas of larger cities, such as Amsterdam and Utrecht, where this study was conducted.

Patients were recruited from the population of patients who participated in a rehabilitation programme at 6 rehabilitation institutes due to chronic non-specific low back pain. All patients who dropped out of treatment and met the inclusion criteria were invited to participate in the study. The following inclusion criteria were applied: (*i*) born in Turkey or Morocco and at least one parent born in the same country; or born in the Netherlands and both parents born in Turkey or Morocco; (*ii*) chronic low back pain that existed for longer than 12 weeks and that could not be ascribed to specific pathology. The low back is the body region between the lower ribs and the lower buttock fold (17); (*iii*) 18 years of age or older; (*iv*) dropped out of rehabilitation treatment for non-medical reasons; and (*v*) written informed consent.

Potential participants were identified by having surnames of Turkish or Moroccan origin. Inclusion criteria were checked and patients were asked if they were interested in receiving information about research among patients of non-Dutch origin. If they were, patients were informed by an information letter in Dutch, which was explained verbally, if necessary, in the presence of an interpreter. Subsequently consent was obtained. Rehabilitation physicians ($n = 8$), a physical therapist ($n = 1$) and an occupational therapist ($n = 1$), who were consulted by the patients in the study were informed about this study and asked verbally if they wanted to participate.

An overview of the patients' characteristics is shown in Table I. The rehabilitation patients had a mean age of 40 years and age range of 29–57 (standard deviation (SD) 9.0) years. The mean duration of residence in the Netherlands was 19 years, range 4–34 (SD 7.4) years. Three patients had received no education, 7 primary, 10 secondary, 2 higher and 1 university education. Eleven of the patients were male and 12 female. These patients consulted 8 different rehabilitation physicians. The majority of the patients dropped out in the diagnostic phase of the rehabilitation programme ($n = 15$), and the remainder ($n = 8$) dropped out during the treatment phase.

Data collection

Semi-structured interviews were used to gather data. Rehabilitation patients were interviewed regarding their reasons for drop-out and their experiences with the course and content of the rehabilitation treatment. Twenty-one patients were interviewed at home. The other 2 patients preferred to be interviewed at the institute. On average, patient interviews lasted 1.5 h, and the physician or therapist interviews approximately 35 min. Although the patients were reassured by the interviewer that anything they said would have no effect on their treatment, one patient did not give approval to record the inter-

Table I. *Basic profile of participants*

Code number	Sex	Country of birth	Parents' country of birth		Age, years	Age at arrival, years	Residence in the Netherlands, years	Proficiency in Dutch language	Relatives		Education	Drop-out time
			Father	Mother					Spouse	Children, *n*		
1	M	2	2	2	43	21	22	Poor	W	2	None	D
2	F	1	1	1	37	22	15	Poor	H	0	Primary	D
3	M	1	1	1	43	20	23	Fair	W	2	Secondary	T
4	F	3	1	1	28	n/a	n/a	Good	H	1	Secondary	T
5	M	1	1	1	35	15	20	Fair	W	2	None	D
6	M	1	1	1	41	25	16	Poor	W	3	Secondary	T
7	M	1	1	1	43	17	26	Fair	Divorced	2	Primary	D
8	F	2	2	2	30	16	14	Good	H	1	University	D
9	F	1	1	1	44	16	29	Poor	H	2	Secondary	D
10	F	2	2	2	50	16	34	Good	Divorced	2	Secondary	T
11	F	2	2	2	52	47	5	Poor	H	7	Secondary	D
12	F	3	1	1	25	n/a	n/a	Good	H	1	Higher	T
13	F	2	2	2	57	39	18	Poor	H	4	None	T
14	F	2	2	2	32	18	14	Good	H	1	Secondary	D
15	F	1	1	1	40	18	22	Poor	H	2	Primary	D
16	M	2	2	2	30	26	4	Fair	W	1	Primary	D
17	M	1	1	1	48	28	20	Good	W	1	Higher	D
18	M	1	1	1	45	17	28	Good	W	3	Secondary	T
19	F	2	2	2	33	18	15	Fair	H	2	Primary	T
20	F	1	1	1	34	17	17	poor	H	1	Primary	D
21	F	1	1	1	29	18	11	Fair	H	2	Secondary	D
22	M	2	2	2	54	31	23	poor	W	3	Primary	D
23	M	2	2	2	46	31	15	Fair	W	1	Secondary	D

1: Turkey; 2: Morocco; 3: The Netherlands; D: diagnostic phase; T: treatment phase; W: wife; H: husband; n/a: not applicable; M: male; F: female.

view. When patients did not allow the interview to be recorded, notes were taken and thoroughly verified with the patient at the end of the interview. All physician's and therapist's interviews were recorded. Seven patients did not want to use a professional interpreter because they considered themselves proficient enough in their knowledge of the Dutch language.

An ethnographic interview style was used (18, 19). The interviews were open and structured on the basis of a topic list, which was based on a literature study (20). The topic list was regularly evaluated, based on the information revealed by the already administered interviews. The major subjects of the topic list were: reasons for drop-out, patient-provider interaction, explanatory model of the patient and physician on health and illness, the image patient and provider had about each other, prior trajectory (consultation of the general practitioner or specialist), organizational environment, demographic information and personal information.

A natural flow of conversation was allowed, with a loose sequence of questions. This made it easier for patients to talk about their ideas and experiences. The topics roughly defined the field that had to be explored (19). The interviews aimed to provide information about feelings, thinking, acting and expressions of the patient (18). The interview questions were open, susceptible to new ideas and easy to understand by the patient. The interviews started with questions that were easy to answer, followed by more difficult or sensitive questions.

Data analysis

From the start of the data gathering, an initial analysis was performed to adjust the topics of the interview. This interactive process of data gathering and analysis is typical in ethnographic research (19, 21, 22). For further analyses of the interview data the verbatim transcription of recorded interviews, notes (taken during the interview) and reflections of the researcher on the interviews were used. Based on this information a report was written on each interview. The raw data of the interviews were analysed by the executive researcher (MS) and the qualitative researcher (EB) using a code scheme, and this primary analysis was discussed with the other researchers. The main themes were then identified and agreed upon by all authors. The final analysis and presentation was prepared by MS and discussed thoroughly with JD. This final analysis and presentation was verified and agreed by all authors.

The reports were analysed with the help of the method of constant comparison using following steps: (*i*) categorizing: the text of the interview reports were categorized into text segments, according to the subjects of the topic list or new important subjects; (*ii*) coding: coding was performed by labelling text fragments with a code (a key word), which symbolized the content of the fragment; (*iii*) comparing: text fragments that had the same code were compared, to synchronize what each code implied. Firstly, text fragments with the same code contained in one single interview were compared. Secondly, text fragments with the same code in different interviews involving the same group (i.e. patients or physicians and therapists) were compared. Thirdly, text fragments with the same code in different interviews involving different groups (i.e. patients or physicians and therapists) were compared; (*iv*) determining: the relationship between different ideas was determined by comparing ideas with the existing literature and the theory behind those ideas (23).

The qualitative data analysis software ATLAS-ti was used to facilitate analyses of the research data. This programme makes it easier to select text fragments, code fragments, make memos on fragments and compare (remarkable) text selections.

During the process of analysing, a saturation point (24) was reached; new interviews produced a repetition of the same experiences.

With regard to the quality indicators of the data analysis: credibility, the faithful depiction of the experiences of patients, was achieved by verifying with the patients (member checking) at the end of the interview whether the identified themes were indeed reasons for drop-out. Dependability and confirmability were achieved by including multiple researchers (analyst triangulation) in the study, especially in the process of analysing the data, as described above. The data were collected in 6 different institutes, which enhanced the transferability of the findings. Furthermore, representative quotes are used to describe the experiences of patients with regard to the different themes, in order to enhance the opportunity of other researchers to judge the transferability of the findings.

RESULTS

The following paragraphs describe the obstacles in rehabilitation treatment that led to patient drop-out according to the themes that emerged during the interviews with patients, rehabilitation physicians and therapists. The themes described are applicable to patients who dropped out in the diagnostic phase, as well as in the treatment phase of the rehabilitation programme. Secondly, the differences in the process of dropping out in the diagnostic phase or the treatment phase are described. The quotes used in this results section were selected as being representative for the themes described.

Reasons for drop-out in rehabilitation patients

In most patients more than one of the themes described below influenced their process of dropping out of rehabilitation treatment.

Expectations regarding the aim of treatment

The majority of patients who dropped out in the diagnostic and treatment phase had other expectations regarding the content of the rehabilitation programme and therefore did not continue with treatment. In most cases these other expectations were patients expecting to be provided with a specific medical diagnosis and pain relief as a primary aim of treatment. Rehabilitation physicians expected that it is not possible to diagnose the cause of chronic non-specific pain in many cases. The main aim of treatment is to teach patients to cope with their pain. In contrast, patients wanted to be cured by the physician and to find a way to relieve their pain in order to be able to fulfil their daily tasks again. They wanted more of an insight into the cause of their symptoms, as they were afraid that their symptoms would worsen. When it became apparent during treatment that no somatic cause of the pain could be identified and that the pain could not be relieved, patients were disappointed and concluded that the rehabilitation treatment was not able to meet their aims. The following quotes show the different expectations of some patients.

"In the institute they said: "We cannot find anything …" Then I thought; just leave it [they will not be able to offer me something] that is why I stopped the programme." *Patient 1: (diagnostic phase)*

"I expected that I would be able to be in warm water, to receive a massage and that my muscles would be loosened up. They could not meet my expectations, which is what they mentioned honestly to me. So then I thought why should I come, it has no use." *Patient 18 (treatment phase)*

"I thought I was going to have an operation or to receive an injection and that they would try to do something to relieve my pain. But it turned out differently, all I did before with physical therapists I had to do here also, but then with exercises." *Patient 3 (treatment phase)*

"They said I had to focus on the psychological factors and that was not what I had expected. That is what I clearly said, and that was also the reason why I stopped the programme." *Patient 8 (diagnostic phase)*

According to some rehabilitation physicians and therapists, patients of Turkish and Moroccan origin had different expectations regarding the content of treatment due to a different way of coping with pain. These health workers argued that these patients are more focused on an external solution for the pain, e.g. by medication or an operation. Some physicians were of the opinion that these patients have more difficulty understanding the multifactorial cause of chronic non-specific low back pain. Patients who did not understand this multifactorial approach dropped out because the content of treatment did not match their explanations of the cause of their pain.

"There are several factors that influence the pain. The moment you have negative emotions this might influence your complaints. Therefore, understanding the relation between body and mind is important. That goes further than knowing your body. Also your social environment influences how you feel. That is also a subject that is difficult to discuss." *Physician 3*

In conclusion, interviews with patients and physicians show that the desire for a more specific medical diagnosis and pain relief as the main aim of treatment are in contrast with what is offered by the rehabilitation team. These different expectations are therefore obstacles to rehabilitation treatment, which lead to drop-out.

Acknowledgement or legitimization of the pain complaints

Because the physicians could not provide the interviewed patients with a more specific medical diagnosis some patients perceived a lack of acknowledgement of their complaints. Some patients thought that the physicians did not believe that they were in pain. If patients felt that their complaints were not taken seriously that was a reason for drop-out.

"I do not understand that the physicians say they cannot find anything. I have so much pain, I am ill because of that?!" *Patient 22 (diagnostic phase)*

"When I see that they listen to me, understand me and believe me, then I am satisfied with that. But like this it feels as if they do not want to believe me, if I am not taken seriously. That is why I asked for an MRI, then I am able to prove that I really have those complaints, the proof of my complaints. But they do not want to do that." *Patient 5 (diagnostic phase)*

"They do not believe me and do not take me seriously." *Patient 6 (treatment phase)*

"It felt if they did not understand me. I thought: the pain is there and something has to be done about it." *Patient 12 (treatment phase)*

Some physicians indeed reported that some patients dropped out because they did not receive legitimization of their pain complaints.

"I think that is the problem; that patients do not feel that their complaints are acknowledged, because we [physicians] do not want or are not able to give [medical] treatment for the pain." *Physician 2*

Some physicians reported that some patients of Turkish and Moroccan origin kept searching for a medical explanation for

their complaints due to a need for legitimatization of their complaints regarding their social environment. A therapist reported that, in these patients, losing the ability to fulfil, e.g. the role of father or partner, was far-reaching in affecting their social life.

"Patients of Turkish and Moroccan origin have more difficulties [to cope with the fact that they are not able] to fulfil a role [because of their pain], which means that they potentially experience their disease differently." *Therapist 2*

Trust in the rehabilitation physician

A lack of trust in the rehabilitation physician was not reported as a direct reason for drop-out. However, when a physician is not able to offer a more specific medical reason for the pain, patients doubt whether the physician is capable of finding the real source of their pain. Some patients were of the opinion that physicians provided too limited a physical examination. Patients with a Turkish background, in particular, are used to a healthcare system in which magnetic resonance imaging (MRI) is more frequently used as a diagnostic procedure. Therefore these patients do not understand why Dutch physicians do not always prescribe a MRI. Some patients do not know which physician to believe, because sometimes they are given different advice. This contradicting advice makes it difficult for physicians to gain their trust. If there is limited trust patients will be more likely to ask for help from another institute or physician.

You do not trust all physicians?

"I want to trust them [physicians], but when this happens, months I have been in treatment in the institute and it did not bring me anywhere ..." *Patient 2 (diagnostic phase)*

"[…] and the lack of trust. Because one physician says this and the other says this. So which physician is telling the truth? And the physician says you have to believe me, trust in us and…. But how are you able to do that, if you heard something different from another physician? And from another physician again something different." *Patient 20 (diagnostic phase)*

"At a certain moment I did not trust the physicians. […] I was of the opinion that they did not help me properly. The resources were there but they did not want to use them. […] And then the conversation with the physician here, it confirmed my idea that I should not trust the physician." *Patient 2 (treatment phase)*

Physicians reported less clearly than patients that a lack of trust influenced the process of dropping out. Some physicians reported that when they were not able to give a medical explanation for the patient's pain, in some cases, the patient indeed lost confidence and dropped out of treatment.

"I have the feeling that when I have to inform patients that I am not able to reduce the pain, then they do not trust me." *Physician 1*

Credibility with regard to foreign diagnosis

In Turkey, especially, it is more common to go directly to a specialist rather than first having an appointment with a general practitioner. When patients are more used to accessing extensive physical examination easily, they might get the idea that the Dutch physician is not taking them seriously when the physician does not prescribe diagnostic procedures, e.g. MRI. Patients in this study frequently reported that they had a second opinion in their country of origin. In some cases this resulted in contradicting views between Dutch physicians and physicians from the patients' country of origin with regard to the cause and treatment of pain. For patients it is difficult to cope with contradicting views on the origin of the pain, ultimately leading to drop-out from treatment.

"I had such a physical examination before in Turkey and it turned out I had a lumbar sacral radiculopathy. I wondered if the physician in the Netherlands would come to the same conclusion. In the past I had such an examination in the Netherlands but they were not able to find anything." *Patient 17 (diagnostic phase)*

"The physician in Morocco gave me a special belly strap. He said it is good to wear it during working and walking. I showed the belly strap at the [Dutch] institute and the physician said: "Do not use that, your muscles will become weak." *Patient 23 (diagnostic phase)*

"In Turkey I went to the physicians and they came to the conclusion that the pain was caused by a lumbar sacral radiculopathy. I did not have the time for more extensive physical examination, but they were quite sure. In the Netherlands they denied it was a real lumbar sacral radiculopathy, which I did not understand." *Patient 20 (diagnostic phase)*

"The physician did not diagnose my complaints as rheumatism. […] How is it possible that in Turkey they think my complaints are due to rheumatism? They do not make up [such a diagnosis]?" *Patient 4 (treatment phase)*

Most physicians reported that, in some cases, the results of a second opinion in the patient's country of origin gave the patient the idea that the chronic non-specific low back pain had a solely medical cause. Rehabilitation physicians in these cases evaluated the complaints of the patient again and tried to explain their opposite treatment proposal. However, not all patients were able to make the shift to the pain being explained by a multifactorial cause rather than solely a medical cause. These patients therefore dropped out of treatment and continued to search for a medical solution to their pain.

"I have the idea that when an intervertebral disc bulges a little bit they diagnose it in Turkey as a radiculopathy, at least in my experience. Then a patient thinks he has a radiculopathy, while we have a different opinion in the Netherlands." *Physician 1*

"Often they bring the results of a MRI, which is often a side step [in the rehabilitation process]. Then the results of such a MRI needs to be evaluated again. Patients in this situation think they have new information, which might lead to a solution [of their pain complaints]. In many cases this is not the case. The MRI shows something, which is not the cause of the complaint." *Physician 3*

Communication and use of interpreters

Communication problems, due limited language proficiency in Dutch, play a major role in the therapy process of non-na-

tive patients. Some patients solved the language problem by being accompanied by their spouse or other family members who were proficient in Dutch. Also, physicians in some cases arranged a professional interpreter; this is, however, not a standard procedure in the treatment of patients with limited language proficiency. Patients reported that many times the quality of the consultations was limited due to communication problems. Some patients were of the opinion that, due to communications problems, the physician is not able to diagnose their disease adequately. Communication problems therefore were a reason for drop-out if patients doubted the quality of the diagnosis.

"It is due to the language barrier, if there would not be a language barrier and you would be able to communicate clearly your [disease symptoms] to your physician, then you also are not given a wrong diagnosis." *Patient 7 (diagnostic phase)*

"I would like to use a professional interpreter more often. I do not [speak Dutch fluently] and sometimes I am not able to [construct] certain sentences. This means I am not always able to express myself. It is different than I would say it in Turkish. I think that is why I am not always properly understood." *Patient 3 (treatment phase)*

Physicians reported that changing the patient's view of the origin and treatment of chronic non-specific pain is more difficult when existing communication problems are not solved. Some physicians were of the opinion that it is the responsibility of patients to arrange an interpreter at consultations to diminish the communication problems. Other physicians aimed for standard regulations regarding the use of professional interpreters in the rehabilitation sector.

"I think we, as treatment team, should be more responsible regarding the arrangements of [professional interpreters] and should take care that this is well arranged during treatment." *Physician 3*

"I often do not use a professional interpreter [at the start of treatment]. When I notice that it does not work properly with family members or other persons who interpret, then I start to use a professional interpreter." *Physician 6*

Other reasons for drop-out

In some patients other reasons for drop-out than contradicting expectations on the content of rehabilitation treatment were reported. In one patient the obstacle was receiving treatment from a health worker of the opposite sex. Only in the case of a life-threatening situation did this patient want to be treated by a health worker of the opposite sex.

"I asked to be treated by a female therapist. Because this was not possible I had to go to a male therapist. That is the reason I did not continue with the treatment. […] In case of an emergency, [the choice between life and death], I would accept a male as therapist. But at this moment I am not ready for that." *Patient 11 (diagnostic phase)*

Other reasons were reported as contributing to the process of dropping out, but were not the main reason for dropping out. Some of those reasons, which were only reported once, were: travel distance to the institute, no availability of treatment after working hours, and having another health problem for which an operation was needed.

Drop-out process of patients who dropped out in the treatment phase

The process whereby 8 patients dropped out in the treatment phase of the rehabilitation programme in general did not differ from the process of patients who dropped out in the diagnostic phase of treatment, as is described in the reasons for drop-out mentioned above. However, there were some additional specific themes present in patients who dropped out in the treatment phase of the rehabilitation programme.

One patient dropped out because she held the view that the physical therapy was of no additional value.

"I had the idea that the physical therapy was not effective because I only had to walk up and down the hallways. Not more than that was done." *Patient 12 (treatment phase)*

Furthermore, this patient reported that the interaction with the therapists was of an unsatisfactory standard. This seemed to be related to a lack of acknowledgement of the patients' pain. What should a good therapist have been doing?

"Someone who is sympathetic towards you and now and then acts if he or she understands you. Someone who does not continuously mention that you should forget the pain while walking. You understand? In that way." *Patient 12 (treatment phase)*

Some rehabilitation physicians in the diagnostic phase of treatment in some cases gave the patient the benefit of the doubt regarding their possibilities to adopt a different way of coping with the pain. However, according to some physicians not all patients were able to change their view of the origin and treatment of their chronic low back pain, and therefore dropped out.

In 1 case the rehabilitation physician was of the opinion that the patient would be able to take part in the rehabilitation programme for a group. However, the patient regularly did not show up, had difficulties adhering to the group process and eventually dropped out.

" […] And this patient met the criteria we have for treatment in a group. The criteria for treatment in a group are stricter than for an individual treatment. I had the idea that this patient would be able to meet the demands of treatment in a group. I also explained the criteria for the group treatment and the patient agreed with that." *Physician 3*

DISCUSSION

To our knowledge this is the first study to explore the reasons for drop-out from a rehabilitation programme in non-native patients with chronic non-specific low back pain by face-to-face interviews. The results of this study showed that most rehabilitation patients dropped out from the diagnostic or treatment phase of the rehabilitation programme due to different expectations of the content of rehabilitation treatment. A lack

of patient satisfaction reduces the likelihood that patients will comply with the treatment (25).

In this present study most patients wanted the cause of their non-specific low back pain to be diagnosed and wanted medical treatment in order to cure their pain, as has also been shown in other studies (7, 26). This wish did not coincide with the views of the rehabilitation treatment team. The rehabilitation physicians' point of view is that chronic non-specific low back pain is a result of an interaction between biomedical, psychological and social factors (27), and therefore is not caused solely by a medical problem. That is why the rehabilitation programme is based on physical training and behavioural cognitive training (1). Rehabilitation treatment of chronic low back pain aims to improve the health-related quality of life of patients by teaching them to cope with their pain and it's consequences in order to restore their daily functioning. Because the aim of the rehabilitation programme is that patients are able to cope with their chronic low back pain, patients have to change their explanatory model (28) of the solution to their pain symptoms in order to be able to adopt lifestyle changes. Changing the patients' explanatory model of the origin and treatment of the pain to increasingly match the physician's model influences a more successful uptake of, and adherence to, rehabilitation treatment. This study showed that patients of Turkish and Moroccan origin had a different view of the treatment of chronic low back pain, which was in contrast to the treatment actually on offer from the rehabilitation team, and that this led to drop-out. Although dissatisfaction caused by different views of the aim of treatment is also found in native patients (29–31), it is potentially more prevalent in non-native patients (7, 32). Therefore an adapted rehabilitation programme, which helps non-native patients to change their view of the origin and treatment of pain, is needed.

This study showed that, in some cases, lack of trust in the relationship between rehabilitation physicians and non-native patients, and the use of a second opinion contribute to the process of dropping out of treatment. This is supported by the results of a study conducted in patients with chronic low back pain who had their first consultation with the rehabilitation physician (7). Another study showed that, due to the inability of physicians to give a medical diagnosis and to treat the pain, confidence and trust between physicians and patients could not be established (30). Furthermore, it has been found that patients adhere better to treatment when they have confidence in the health provider and the prescribed treatment (33).Trust, the use of a second opinion, acknowledgement of complaints and treatment expectancy are intertwined with each other. When patients are not satisfied with the diagnosis chronic non-specific pain due to different ideas about the treatment of chronic pain they will tend to ask for a second opinion. When the results of the second opinion by a physician from the patient's country of origin contradict the findings of a native Dutch rehabilitation physician, and patients experience a lack of acknowledgement of their complaints, trust in the physician diminishes. This process will ultimately lead to drop-out from rehabilitation treatment. It is therefore an important task for rehabilitation physicians to re-examine the patients' complaints, and to explain to the patient that the pain does exist, but that it is not caused only by a medical problem.

Former studies in the rehabilitation sector have shown that communication problems between non-native patients and health workers due to a lack of language proficiency in Dutch still occur (7, 32, 34). The results of the present study show that, in case of making a mental shift regarding the view of the origin and treatment of non-specific low back pain, direct or indirect misunderstandings between health workers and patients lead to drop-out. Standard regulations regarding the use of professional interpreters in rehabilitation institutes are therefore needed.

Analogous to patients who dropped out in the diagnostic phase, most patients who dropped out in the treatment phase of the rehabilitation programme were not able to change their view of the origin and treatment of chronic non-specific low back pain, and kept searching for a more specific medical diagnosis and aimed for pain relief. Although the rehabilitation physician included these patients in treatment, the rehabilitation programme appeared not to be suitable for them. It may be that the process of including patients in treatment needs improvement, or that the supply of rehabilitation programmes needs to be differentiated into different categories of patients, with different demands. This argument is supported by the results of a study among patients with mental health problems, which showed that adapted health education regarding basic human anatomy and physiology, an extended physical exercise module and the use of a Turkish peer educator contributed to the process of gaining knowledge on the origin and treatment of their complaints and led to an improvement in the mental health status of non-native patients (35). Additional modules of more basic health education, provided before the regular rehabilitation programmes, may enable patients with more difficulties to change their explanatory model of the origin and treatment of chronic non-specific low back pain.

The strength of this study is that the interviews were held with patients from 6 different rehabilitation institutions. This contributes to the generalizability and transferability of the findings. The transferability of our findings to other ethnic groups would need testing through further research. Another strong point is that this study accomplished a saturation point in the data collection; new interviews produced a repetition of the same experiences. Due to the use of a sound qualitative research method and the achievement of a saturation point in the data collection we trust the credibility of our findings. Despite careful methodological consideration to enhance the validity and reliability of the study, bias is possible. Issues that may have affected the data collection and data analyses are the personal characteristics of the researcher, such as gender (male), background (native Dutch) and personality. These issues potentially influenced the confirmability of the findings. The lack of an interpreter in some of the interviews may have led to loss of information provided by patients.

In conclusion, the major reason for drop-out from the diagnostic or treatment phase of the rehabilitation programme

was patients having different expectations from those of their health providers regarding the aim of treatment, as a result of a different view of the origin and treatment of low back pain.

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