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RESEARCH PAPER

## Adaptations to pain rehabilitation programmes for non-native patients with chronic pain

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### Abstract

**Purpose.** (i) To determine whether adaptations for non-native patients have been implemented in pain rehabilitation programmes; (ii) to determine whether characteristics of the rehabilitation institute are related to having adaptations for non-native patients in place.

**Subjects.** Rehabilitation institutes and rehabilitation departments of general hospitals in The Netherlands who offer a pain rehabilitation programme.

**Method.** A questionnaire was handed over in person or by e-mail to the rehabilitation physicians of the participating institutes. Twenty-seven (90%) questionnaires were returned. The questionnaire concerned programme adaptations and institute characteristics. The data were analysed by  $\chi^2$  tests or Fischer's exact tests and logistic regression analysis.

**Results.** Twelve institutes (44.4%) reported having adaptations in place for non-native patients in their pain rehabilitation programme. The most common adaptations were as follows: increased number of consultations (25.9% of the institutes); longer consultations (25.9%) and education for employees regarding cultural competency (11.1%). Institutes which treated a high percentage ( $\geq 11\%$ ) of non-native patients had implemented significantly more frequently adaptations to their rehabilitation programme ( $p = 0.04$ ). The number of adaptations was neither associated with the proportion of non-native citizens in the local population nor with the number of the institutes' employees.

**Conclusion.** Less than half of the institutes had implemented one or more programme adaptations for non-native patients. Institutes which had made adaptations to their rehabilitation programme treated more non-native patients.

**Keywords:** *Chronic pain, minority health*

### Introduction

Drop-out from low back pain rehabilitation programmes in The Netherlands has been shown to be twice as high in non-native patients (28.1%) compared to native Dutch patients (13.7%) [1]. Non-native patients more frequently than native patients dropped out because they had different expectations than the treating health professionals regarding the

content of their rehabilitation programme. Most patients expected pain relief and a specific diagnosis of the cause of their pain, whereas the aim of this type of programme is different [2]. Based on physical training and behavioural cognitive training, rehabilitation for patients with chronic pain aims to improve the health-related quality of life of patients by coaching them to cope with their pain and its consequences [3]. A study among non-native

patients and their care providers showed that communication and language problems, differences in expectations regarding the content of rehabilitation treatment and patients having problems regarding rules on (financial) support for persons with disabilities were all factors which influenced the treatment process [4]. Furthermore, a review study showed a wide variety of barriers which influence the treatment process of non-native patients [5].

Various interventions and strategies are available for health professionals to help non-native patients overcome disparities in healthcare use [6]. The use of professional interpreters is associated with improved clinical care in patients who have limited proficiency in the language of their host country [7]. Cultural competence training can improve the knowledge, attitudes and skills of health professionals who treat patients from another cultural and linguistic background. Cultural competence is defined as: 'A set of skills or processes that enable health professionals to provide services that are (culturally) appropriate for the diverse populations they serve' [8]. However, culturally competent health professionals are only effective when they work in a culturally competent organisation and health care system [9,10].

With regard to the Dutch situation, one study among patients with mental health disorders showed that providing a programme of adapted health education, which included basic human anatomy and physiology, an extended physical exercise module and the use of a Turkish peer educator, led to an improvement in mental health status [11]. Another study, in women of Turkish and Moroccan origin with pain complaints, found that the use of a health adviser from the same cultural background and with the same native language (VETC in Dutch) led to a significant improvement regarding self-reported health status, psychological health status and the ability to cope with pain [12]. An explorative study regarding an adapted cardiac rehabilitation programme for non-native patients showed that the inclusion of additional programme modules, such as adapted education through videos in the patient's native language, increased number of and longer consultations and systematic use of professional interpreters, contributed to the process of gaining knowledge of the origin and treatment of heart diseases [13].

There is no knowledge whether any of the strategies described above, which are intended to overcome disparities in the use of healthcare by non-native patients, are actually implemented in daily practice. Based on our clinical experience, we expected that few adaptations for non-native patients would be implemented in rehabilitation institutes. Furthermore, we expected that those adaptations which are relatively easy to implement (such as

longer consultations and the use of professional interpreters), would be most frequently in place.

It is important to know which characteristics of a rehabilitation institute facilitate or hinder the implementation of adaptations to programmes for non-native patients. We hypothesised that a higher need for adaptations in the rehabilitation institute, indicated by a high percentage of non-native citizens residing in the city the institute is located in, would correlate with having adaptations in place. We also hypothesised that a high capacity to implement adaptations, indicated by a high number of employees, would correlate with having adaptations in place. We hypothesised that the availability of an alternative solution, indicated by the option to refer patients to other care providers with more suitable programmes for non-native patients, would show a negative correlation with having adaptations in place. Finally, because adaptations could make an institute attractive for non-native patients, we expected that having adaptations in place would correlate with treatment of a high number of non-native patients.

The aim of the present study was (i) to determine whether adaptations to rehabilitation programmes for non-native patients have been implemented by rehabilitation institutes; (ii) to determine whether characteristics of the rehabilitation institute are related to having adaptations for non-native patients in place.

## Methodology

### Design

Data were collected among physicians working for institutes which offered pain rehabilitation in The Netherlands ( $N=30$ ). A questionnaire was completed by 14 physicians during one of their regular meetings. The remaining questionnaires ( $N=16$ ) were sent by e-mail. A reminder was sent to non-responders. In total, 27 out of 30 (90%) questionnaires were returned. Information on the number of employees was collected by e-mail from the Human Resources departments. For rehabilitation departments within a hospital ( $N=7$ ), the number of employees in the rehabilitation unit were counted, while in rehabilitation centres ( $N=20$ ) the total number of employees were counted.

### Measurements

Adaptations to rehabilitation programmes for non-native patients that were already in place in the different institutes were assessed by closed-ended

questions. The different adaptations were: increased number of consultations; longer consultations; education module regarding content and aims of the rehabilitation programme; education for employees regarding cultural competency; presence of a health counsellor of non-native origin; presence of a health adviser with the same cultural background and native language as the patient; education module regarding basic knowledge of the human body; specific audiovisual educational materials for non-native patients and other adaptations. In the latter category, respondents were free to write down any additional adaptations they used, which were not present in the list of answer categories. Respondents could also indicate plans they had to implement any adaptations in the next 3 years. This was assessed with the same answer categories for adaptations as described above.

The percentage of non-native citizens residing in the city in which the institute was located (in total and subdivided into citizens of western and non-western origin) was obtained from the website of the Dutch Central Bureau of Statistics (CBS) ([www.cbs.nl](http://www.cbs.nl)). The number of employees was assessed with open-ended question. Referral to other care providers was answered as 'yes or no'. The percentage of non-native patients treated for chronic pain was assessed with answer categories (0–10, 11–20, 21–40, 41 and higher).

The official terminology of the CBS was used to define the status of origin. The status of non-native origin was defined as: (a) born outside The Netherlands and at least one parent born in the same country; or (b) born in The Netherlands and both parents born outside The Netherlands. The status of a western non-native origin was defined as: (a) born in Europe (except The Netherlands and Turkey), North-America, Indonesia, Japan or Oceania and at least one parent born in the same country; or (b) born in The Netherlands and both parents born in Europe (except The Netherlands and Turkey), North-America, Indonesia, Japan or Oceania. The status of a non-western, non-native origin was defined as: (a) born in Turkey, a country in Africa, Asia (except Indonesia and Japan) or Latin America and at least one parent born in the same country; or (b) born in The Netherlands and both parents born in Turkey, a country in Africa, Asia (except Indonesia and Japan) or Latin America. Because many citizens from Indonesia and the former Dutch East Indies are of Dutch origin, these citizens are classified as having a western non-native origin. Citizens from Japan are given the status of western non-native origin because of their socioeconomic position. The CBS makes a distinction between the first and

second generation of non-native citizens: individuals born outside The Netherlands (first generation) and individuals born in The Netherlands themselves with parents born outside The Netherlands (second generation), respectively.

In the general Dutch population 20% of the citizens are of non-native, with around 11% of these having a non-western background. The percentage of non-native citizens in large cities is higher than in many of the smaller cities in The Netherlands (e.g. 49% in Amsterdam) ([www.cbs.nl](http://www.cbs.nl)). Most citizens of western non-Dutch origin in The Netherlands are from Germany or the former Dutch colony of Indonesia [14]. Most non-native citizens of non-western origin have a Turkish or Moroccan background. These citizens came to The Netherlands as labour migrants in the 1970s [15].

The term non-native is a recognised (translated) terminology in The Netherlands, which is derived from the CBS. We have chosen to use the terms non-native and native because the term immigrant is not applicable for citizens who are born in The Netherlands and have at least one parent who has been born outside The Netherlands.

#### *Statistical analysis*

In the univariate analysis,  $\chi^2$  tests for dichotomous variables or Fischer's exact tests were performed to detect correlations between adaptations and institute characteristics. The dependent variable was adaptations to the rehabilitation programme for non-native patients. The independent variables were: percentage of non-native citizens in the city the institute was located in (in total and subdivided into citizens of western and non-western origin, and first and second generation); number of employees; referral to other care providers and percentage of non-native patients treated for chronic pain. The median was used as the cut-off point for the dichotomisation of the percentage of non-native citizens, the number of employees and the percentage of non-native patients treated for chronic pain.

Multivariate logistic regression analysis (forward stepwise) was used to describe the relationship between the dependent variable of adaptations and the independent variables: percentage of non-native citizens in the city the institute was located in; number of employees; referral to other care providers; percentage of non-native patients treated for chronic pain. Significance was set at  $p < 0.05$ . The Statistical Package for Social Sciences (SPSS, Chicago, IL) version 15.0 was used to perform statistical analyses.

## Results

### *Institute characteristics*

An overview of the characteristics of the institutes is presented in Table I. Fourteen institutes (51.9%) had a high percentage of non-native citizens in the population of the city the institute was located in, which corresponded to more than 24.54% (the median) of the population. The subdivision of non-native citizens into western and non-western origin, and first and second generation is also presented in Table I. Thirteen institutes (48.1%) had a high number of employees, corresponding to more than 300 employees (i.e. the median). Fifteen institutes (55.6%) regularly referred non-native patients to other care providers with health care programmes which were more suitable for non-native patients. Nine institutes (33.3%) reported that more than 11% (i.e. the median) of patients treated for chronic pain were of non-native origin.

### *Programme adaptations*

An overview of the adaptations that were in place for rehabilitation programmes for non-native patients with chronic pain is presented in Table II. Less than half of the institutes (44.4%) reported that adaptations (other than the use of interpreters) were in place. An increased number and longer

consultations were most often reported (25.9%). Of the 7 institutes (25.9%) planning to implement adaptations for non-native patients within a period of 3 years, only one institute (3.7%) had not previously made adaptations to the rehabilitation programme.

Nine institutes (33.3%) reported not using interpreters during treatment and sixteen institutes (59.3%) reported using professional interpreters. Three institutes (11.1%) already using interpreters planned to use them more often within a period of 3 years.

Three institutes (11.1%) reported to have a policy in place regarding care for non-native patients, which was described in various official documents of the institutes involved.

### *Correlation between institute characteristics and adaptations*

The results of  $\chi^2$  or Fischer's exact tests are presented in Table III. Institutes which treated a high percentage ( $\geq 11\%$  of the total patient population) of non-native patients had significantly more frequently implemented adaptations to their rehabilitation programme ( $p = 0.04$ ). The same correlation was observed in the multivariate analysis, although this was only marginally significant ( $p = 0.05$ ). No significant differences in the presence or absence of adaptations for non-native patients were found in relation to the percentage of non-native citizens in the city the institute was located in, the number of employees, or referrals to other care providers. Also, when the percentage of non-native citizens was subdivided into those of western and non-western origin, or into non-native citizens of the 'first' and 'second generation', no significant differences were found.

## Discussion

Less than half of the institutes had implemented one or more adaptations to their rehabilitation programme for non-native patients and only one quarter of institutes planned to adapt one or more interventions or strategies within the next 3 years. Even those cities with a high percentage of non-native citizens did not have adaptations in place. Almost all of the institutes that had plans for adaptations in the next 3 years, already had some in place.

The adaptations reported most often were an increased number and longer consultations. Other effective adaptations, such as use of a peer educator or a health adviser with the same cultural background and native language [11,12] are not often

Table I. Characteristics of the institutes ( $N = 27$ ).

Variables	Mean (SD) (range)
Non-native citizens in city (%)	26.7 (12.5) (5.1–49.5)
Non-native citizens of non-western origin in city (%)	15.8 (12.5) (1.7–36.5)
Non-native citizens of western origin in city (%)	10.9 (3.6) (3.4–19.8)
Non-native citizens of 'first generation' in city (%)	13.9 (7.6) (2.0–28.3)
Non-native citizens of 'second generation' in city (%)	12.8 (5.0) (3.1–21.2)
Employees (no.)	280.7 (236.0) (20.0–748.0)
	<i>n</i> (%)
Referral to other care provider	
Yes	15 (55.6)
No	12 (44.4)
Non-native patients treated for chronic pain	
(> 11%)	9 (33.3)
(< 11%)	18 (66.7)

SD, standard deviation.

Table II. Implemented and planned adaptations to rehabilitation programmes and the use of interpreters by the different institutes ( $N=27$ ).

	Yes, <i>n</i> (%)	No, <i>n</i> (%)	Plans*, <i>n</i> (%)	
			Adaptations in place	Adaptations not yet in place
Adaptations (in general)	12 (44.4)	15 (55.6)	6 (22.2)	1 (3.7)
Increased number of consultations	7 (25.9)	20 (74.1)	0 (0)	0 (0)
Longer consultations	7 (25.9)	20 (74.1)	2 (7.4)	0 (0)
Educational module regarding content and aims of rehabilitation programme	1 (3.7)	26 (96.3)	0 (0)	1 (3.7)
Education for employees regarding cultural competency	3 (11.1)	24 (88.9)	2 (7.4)	0 (0)
Health counsellor of non-native origin	1 (3.7)	26 (96.3)	1 (3.7)	0 (0)
Health adviser with the same cultural background and native language (VETC in Dutch)	0 (0)	27 (100)	0 (0)	0 (0)
Educational module regarding basic knowledge of the human body	0 (0)	27 (100)	1 (3.7)	0 (0)
Specific audiovisual educational materials for non-native patients	0 (0)	27 (100)	2 (7.4)	0 (0)
Joint programme with the public mental health service (pilot)	1 (3.7)	26 (96.3)	0 (0)	0 (0)
Interpreters (in general)	18 (66.7)	9 (33.3)	3 (11.1)	0 (0)
Interpreting by professional interpreters	16 (59.3)	11 (40.7)	0 (0)	0 (0)
Interpreting by family members patient	9 (33.3)	18 (66.7)	0 (0)	0 (0)
Interpreting by employees institute	3 (11.1)	24 (88.9)	0 (0)	0 (0)

\*Institutes with plans to implement adaptations to their rehabilitation programmes for non-native patients with chronic pain, are divided into those institutes which already had adaptations in place and those which did not.

Table III. Results of the  $\chi^2$  or Fisher's exact tests regarding differences between institutes with and without adaptations for non-native patients.

Variables	Adaptations ( <i>n</i> = 12) <i>n</i> (%)	No adaptations ( <i>n</i> = 15) <i>n</i> (%)	<i>p</i> -value
Non-native citizens in city			
(> 25.5%)	7 (58.3)	7 (46.7)	0.34
(< 25.5%)	5 (41.7)	8 (53.3)	
Western non-native citizens in city			
(> 10.4%)	5 (41.7)	7 (46.7)	0.80
(< 10.4%)	7 (58.3)	8 (53.3)	
Non-western non-native citizens in city			
(> 12.5%)	4 (33.3)	4 (26.7)	1.00
(< 12.5%)	8 (66.7)	11 (73.3)	
Non-native citizens 'first generation' in city			
(> 12.1%)	6 (50.0)	7 (46.7)	0.86
(< 12.1%)	6 (50.0)	8 (53.3)	
Non-native citizens 'second generation' in city			
(> 12.4%)	7 (58.3)	6 (40.0)	0.34
(< 12.4%)	5 (41.7)	9 (60.0)	
Employees (no.)			
(> 300)	6 (50.0)	7 (46.7)	0.55
(< 300)	6 (50.0)	8 (53.3)	
Referral to other care provider			
Yes	8 (66.7)	7 (46.7)	0.30
No	4 (33.3)	8 (53.3)	
Non-native patients treated			
(> 11%)	7 (58.3)	2 (13.3)	0.04
(< 11%)	5 (41.7)	13 (86.7)	

used. This may be because a health adviser imposes an additional financial burden on the institutes. It was also shown that one-third of the institutes did

not use interpreters during treatment. This is a surprising finding because healthcare institutes in The Netherlands are not charged for the use of professional interpreters: the use of interpreters is being subsidised by national authorities.

Unexpectedly, a high percentage of non-native citizens in the city the institute is located in did not correlate with having adaptations for non-native patients in place. Apparently a high need, indicated by a high proportion of citizens of non-native origin in the area serviced by the institute, does not automatically encourage them to adapt their rehabilitation programmes.

A high number of employees did not correlate with having adaptations in place. We expected that institutes with a large capacity, indicated by a high number of employees, would be better able to use their (human) resources to adapt their programmes. The results seem to indicate that institutes with a lower number of employees were able to implement adaptations to their programmes. It may be that institutes with a high number of employees need more time to adjust to new circumstances or take up new developments, for example, requiring time to adjust a policy with an employee council.

Referring non-native patients to another care provider with a more suitable programme showed no negative correlation with having adaptations in place. Apparently having an alternative solution does not explain why a limited number of adaptations have been implemented.

As expected, this study showed that institutes which treat a high percentage ( $\geq 11\%$ ) of non-native patients were more likely to have adapted their

rehabilitation programmes. Because this is a cross-sectional study, this finding can be interpreted in various ways. However, we are inclined to consider this as evidence that institutes with an adapted rehabilitation programme attract more non-native patients. A high need for adaptations, a high capacity or an alternative solution did correlate with having adaptations in place. Therefore, it seems that when institutes initiate adaptations to their programmes, they are more likely to attract non-native patients or physicians may refer more patients, as a result of having a good reputation. However, it should be noted that other explanations may also apply, with one possibility being that institutes which implemented adaptations had a high number of non-native employees, who facilitated the development of the rehabilitation programme. Data on employee backgrounds were not available so we could not evaluate this theory. Another explanation is that one or more employees, in institutes with a high number of non-native patients, had the opinion that the regular rehabilitation programmes were not suitable for non-native patients. Potentially, these employees, with idealistic intentions, aimed to improve the accessibility of rehabilitation programmes for non-native patients, as each citizen should have equal access to healthcare programmes.

The cross-sectional nature was a limitation of this study and longitudinal research into the development of programme adaptations for non-native patients is needed. Future research should focus on exploring both motivators and barriers as an important next step in explaining the limited adaptations in place for non-native patients in pain rehabilitation programmes. Furthermore there is a need to assess the association between those adaptations which are in place and drop-out rates. Designing an intervention and measuring its effect on the drop-out rates from rehabilitation programmes is an important next step in improving the care of non-native patients.

## Conclusion

Less than half of the institutes had implemented one or more programme adaptations for non-native patients. Institutes which had made adaptations to their rehabilitation programme treated more non-native patients.

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