Chapter 8

General discussion

In this general discussion the main findings are summarized and elaborated upon. The discussion will end with methodological considerations, recommendations for future research and implications for clinical practice for rehabilitation care in patients of non-native origin with chronic non-specific low back pain.

The main research goals of the studies reported in this thesis were:

- To describe the drop-out rate in native and non-native patients with chronic non-specific low back pain.
- To explore which factors could contribute to the premature ending of the rehabilitation treatment for non-medical reasons in native and non-native patients with chronic non-specific low back pain.
- To explore solutions for the limited accessibility of a cardiac rehabilitation programme for non-native patients.
- To describe the implementation of potential solutions for the limited accessibility of care in the pain rehabilitation sector.

Summary of the main findings

This thesis showed that drop-out from rehabilitation treatment among patients of non-Dutch origin (28.1%) was twice as high as among native Dutch patients (13.7%). Furthermore drop-out was higher in the diagnostic phase compared to the treatment phase, and in rehabilitation centres compared to hospitals **(Chapter 2)**. Data from medical patient files provided evidence that drop-out in non-native patients is related to different expectations regarding the content of rehabilitation treatment (e.g. having pain relief as the main aim of rehabilitation treatment) **(Chapter 3).** In a qualitative study, the following sources of tension were identified during the interaction between Dutch physicians and patients of Turkish and Moroccan origin at the first rehabilitation consultation: differences in expectations regarding the aim of treatment (e.g. expecting a specific medical diagnosis), symptom presentation, views on responsibilities with regard to rehabilitation treatment, lack of trust, contradicting views of physicians from the patients' country of origin with regard to the cause and treatment of pain, and communication problems. These factors potentially are associated with future drop-out **(Chapter 4)**. A qualitative study in patients of Turkish and Moroccan origin showed that most patients dropped out due to expecting a specific medical diagnosis and having pain relief as the main aim of rehabilitation treatment. Other reasons for drop-out detected in the

interviews were: experiencing a lack of acknowledgement for one's complaints, lack of trust in the rehabilitation physician, contradicting views of the physician from the patients' country of origin with regard to the cause and treatment of pain, and communication problems **(Chapter 5)**. The results of a qualitative study in patients of Turkish and Moroccan origin who participated in an adjusted cardiac programme for non-native patients showed that separate modules (e.g. adapted health education) and additional strategies (e.g., standard use of professional interpreters, increase in the number and length of consultations, and adapted health education with (audio)visual materials) for non-native patients led to satisfied patients who adopted lifestyle changes. Due to the structural use of professional interpreters, patients had the possibility to ask for further explanation if they did not understand. This helped the patients to better understand the origin and treatment of their disease. Therapists experienced that the number and length of the consultations, the structural use of interpreters and (audio)visual educational materials contributed to the achievement of the treatment aims **(Chapter 6)**. A study into rehabilitation institutes which offer pain rehabilitation programmes showed that less than half of the institutes made one or more programme adaptations (e.g. adapted health education) for non-native patients. Institutes with a high percentage of non-native patients were more likely to have adapted their rehabilitation programmes for patients of non-native origin with chronic non-specific pain. Although other interpretations cannot be excluded, institutes that have initiated adaptations to the rehabilitation programme seem to attract more non-native patients **(Chapter 7)**.

Reflection on the results

Drop-out rate

As reported earlier, drop-out among patients of non-Dutch origin (28.1%) was twice as high as among native Dutch patients (13.7%) (Chapter 2). This is an important finding because there was no previous knowledge on drop-out rates in non-native patients who participated in rehabilitation treatment in The Netherlands. The difference in drop-rate between non-native and native patients is in line with our expectations and consistent with an international study conducted in mental healthcare in the US. In the latter study, the drop-out rate was significantly higher in ethnic minority patients (29%) compared to native patients (19%) (1).

Because no socioeconomic variables were available for the analysis of the data in the medical file study reported in chapter 2, it remains unknown whether the difference in drop-out rate between non-native and native patients could be partially explained by

differences in socioeconomic factors (e.g., level of education and occupational conditions). For instance, it has been shown that unemployment is a predictor of drop-out in patients who participated in cardiac rehabilitation (2). Non-native patients have a higher unemployment rate than native patients (3), which may partially explain the higher drop-out rate in these patients. Other socioeconomic disparities, such as a lower educational background, in non-native patients may also contribute to the higher drop-out rate (4) Low education may act as a barrier to the access of healthcare due to a lack of knowledge with regard to the publicity and the measures of the healthcare system. Therefore, future studies are needed that take into account the influence of socioeconomic factors on drop-out from pain rehabilitation programmes. It is important to note that differences in educational background between native and non-native patients are also related to culture, receiving primary education in countries such as Turkey and Morocco has not been as common as in The Netherlands (3;5).

Non-native patients of the first and second generation could not be analyzed separately in the study reported in chapter 2 because this data was not available. In the qualitative studies this data was available, however the sample size was too small. Future studies should focus on potential differences in non-native patients who were or were not born in The Netherlands. Patients who are born outside The Netherlands potentially are less acculturated to the Dutch (healthcare) situation than non-native patients who are born in The Netherlands (6;7). This may influence the use of rehabilitation care. A low level of integration into the host society has been reported to function as a barrier regarding the use healthcare services (4). Furthermore, it has been shown that the length of residence in The Netherlands contributes to a positive attitude towards mental health services (8). This might also be applicable for rehabilitation treatment.

Reasons for drop-out

In this paragraph, the reasons for drop-out which were detected in the various studies (chapter 3 and 5) in this thesis are elaborated upon.

Different expectations regarding the content of treatment

The most important reason for drop-out which was reported in chapters 3 and 5 was that non-native patients had different expectations regarding the content of rehabilitation treatment than their health professionals had. This barrier has also been found in previous research among non-native patients in The Netherlands (9). Most patients expected to receive a more specific medical diagnosis for their chronic back pain and hoped that pain relief would be the primary aim of treatment. Patients and health

providers potentially use a different explanatory model to explain the origin of pain. Health providers in the rehabilitation teams of our studies are of the opinion that chronic non-specific low back pain is not or not only the result of a medical problem, but that it results from or is maintained by a complex interplay of medical and psychological factors. Many of the patients, however, were of the opinion that they were not able to influence the level of pain themselves. These patients potentially had limited knowledge regarding the psychological and contextual factors which are thought to maintain chronic pain symptoms (10). The incidence of chronic diseases such as chronic pain has increased in the past decades and there is a growing demand on self-management skills of patients. Consequently, the tasks of physicians and health professionals have changed from cure to a focus on management and care (11). Because the explanatory model of patients may cause drop-out, health professionals need to focus on the patients' explanatory model in order to find out whether patients understand the origin of their illness and the factors which maintain their symptoms. When patients have different expectations regarding the treatment, health professionals should try to help patients to adjust their expectations. For example, health professionals need to provide patients with knowledge and skills on how to cope with chronic pain.

The different view which non-native patients of Turkish and Moroccan origin appear to have of the origin and treatment of chronic pain may also explain why patients of Turkish and Moroccan origin expected a concrete medical solution (e.g. an operation) for their pain symptoms, as reported in chapters 4 and 5. Potentially, a different process of proto-professionalism has taken place in non-native patients. Proto-professionalism is the process whereby patients learn to perceive the origin and treatment of diseases from the perspective of health professionals. A different process of proto-professionalism in non-native patients potentially is influenced by a lack of proficiency in the Dutch language and being brought up in a different (cultural) context with a different healthcare system. As a result of this different process of proto-professionalism non-native patients potentially have limited knowledge regarding other solutions for pain symptoms, than a concrete medical treatment. The influence of this process on finding resources for adequate help has been acknowledged by other authors (12) (8). Due to a different educational background, in which there is, for example, a lack of physical exercise education in primary school, people may have limited knowledge regarding the physical functioning of the human body and the importance of physical fitness (13;14). Patients who lack insight into the processes which maintain chronic pain are in need of a treatment which enables them to change their view of the origin and treatment of the chronic pain.

The provided rehabilitation care did not meet the needs and expectations of non-native patients who dropped out (Chapter 3 and 5). When rehabilitation programmes lack a culture-sensitive approach, patients are restricted in developing proto-professionalism. By the processes of proto-professionalism and interculturalisation (adapting the healthcare system to patients with different ethnic and cultural backgrounds), the explanatory models of patients and physicians on the origin and treatment of the symptoms may grow towards one another. The limited use of professional interpreters and the fact that the programmes were not specifically adjusted to patients with a different educational background who grew up with a different healthcare system potentially contributed to the gap in explanatory models. It has been shown that awareness building regarding the content of treatment and the use of bilingual therapists led to a decrease in premature drop out from mental health treatment (15). It would be worthwhile to examine the impact of such adaptations on drop-out in pain rehabilitation treatment in The Netherlands.

Dropping out due to different expectations regarding the content of rehabilitation treatment did not only occur in non-native patients, but also, although less frequently, in native Dutch patients (Chapter 3). A review study showed that also patients in the general population often have expectations which contradict with those of the health care providers regarding the content of (rehabilitation) treatment for low back pain. (16). Patients expected a specific medical diagnosis and hoped that pain relief would be the main aim of treatment. The process of dropping out due to different expectations regarding the content of treatment therefore seems comparable in native and non-native patients. This indicates that explicitly attending to and trying to change expectations regarding (rehabilitation) treatment is recommendable for all (first) contacts with patients, although the potentially larger prevalence among non-native patients stresses this need especially in this specific population.

Lack of acknowledgement of the patients' complaints

Because the physicians could not provide patients with a more specific medical diagnosis, some patients felt a lack of acknowledgement for their complaints. Some patients felt that the physicians did not believe that they were in pain. Feeling that their complaints were not taken seriously was reported to be a reason for drop-out. This is supported by a review study in the general population, which showed that the absence of the possibility for sickness verification (the proof that pain symptoms are a result of a medical problem), as well as a lack of respect from health professionals are sources of dissatisfaction (16).

Having chronic pain has a large impact on the family situation of patients, for example influences on the family income. This is especially applicable in non-native patients, who more often than native Dutch are in a socio-economically disadvantaged position (3). When health professionals lack the cultural competence to take these factors into account (17), this may potentially increase the feeling that complaints are not acknowledged. An other explanation for the experienced lack of acknowledgement is that patients expected a different interaction with the physician regarding their disease symptoms. A lack of acknowledgement of the patients' complaints is an important barrier to the development of an adequate therapeutic relationship. In clinical practice attention is needed for the patient physician interaction regarding feelings of acknowledgement of the patients' illness experiences.

Lack of trust in the rehabilitation physician

Directly related to the experienced lack of acknowledgement is a lack of trust in the therapeutic relationship between rehabilitation physicians and non-native patients. This also contributed to the process of dropping out of rehabilitation treatment. Patients have limited trust in the expertise of the rehabilitation physician. Chronic pain is an invisible disease. For patients, it is difficult to understand that chronic low back pain can occur without any visible defect of body structures. Many patients are convinced that there must be some defect in for instance, the spine, and that is why they continue searching for a specific medical diagnosis which can account for the pain. It has been shown previously 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 (18). Because non-native patients more often appeared to be dissatisfied with the diagnosis of chronic pain, a lack of trust in the expertise of the rehabilitation physician is a large barrier for non-native patients. This barrier may be reduced with patient education regarding the interplay of factors that maintain chronic pain.

Contradicting views of the physician from the patients' country of origin

The results from chapters 4 and 5 suggest that contradicting medical information as the result of a second opinion in the patients' country of origin limited confidence in the rehabilitation physician even more. The use of a second opinion is entwined with trust, acknowledgement of complaints, and treatment expectancy. When patients are not satisfied with the diagnosis of chronic non-specific pain, they tend to ask for a second opinion. In cases where the results of the second opinion by a physician from the patient' 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 Dutch physician and in the treatment reduces. This process ultimately will lead to drop-out from rehabilitation treatment.

Communication and language problems

Physicians and health professionals did not always use professional interpreters during treatment. Therefore, communication and language problems were not adequately solved, which led to tension in the treatment process and in some patients led to drop-out from rehabilitation treatment (chapters 3,4 and 5). This result is supported by a previous study regarding the barriers experienced by non-native patients who participated in rehabilitation treatment in The Netherlands (9). It has been shown that a lack of the skills required for living in the Dutch society, especially having limited proficiency of the Dutch language, in non-native patients is associated with psychological distress (19). This finding stresses the need for compensating for the lack of proficiency in Dutch in non-native patients by using professional interpreters.

No-show and refusal to participate

Around a fourth of the patients (native and non-native) dropped out of treatment by not showing up or refusing to participate without giving any further reason (chapter 3). This means that for this group, the reasons for drop-out remained unknown. Patients not reporting the reason for dissatisfaction with treatment is potentially an indication of a lack of confidence in the therapeutic relationship between health professionals and physicians and the patients. Patients were not willing or did not have the courage to report the reason for dropping out. There may also be a variety of other reasons for drop-out such as a lack of time, other priorities etcetera.

Solutions for limited accessibility to and suitability of a cardiac rehabilitation programme

The aim of the study presented in chapter 6 was to explore patient' experiences with an adapted cardiac rehabilitation programme. The results of this study indicate that by using additional modules and strategies, such as increased number of consultations, longer consultations, professional interpreters, and (audio)visual educational materials, non-native patients were better able to understand the origin of their disease and the necessity for lifestyle changes. Non-native patients were satisfied with the rehabilitation programme and they accomplished the treatment aims such as a reduction in disease symptoms and the implementation of lifestyle changes. These results support the idea that non-native patients who lack proficiency in Dutch and have limited basic health knowledge need adjusted health education and more time for repeated explanation.

Taking part in an adapted cardiac rehabilitation programme is suggested to contribute to the process of proto-professionalism. In other words, due to a more culturally adjusted rehabilitation programme, patients have the opportunity to change their explanatory model regarding the origin and treatment of their illness. Explanatory models of the patients grew closer to that of the health professionals by the processes of a growing cultural competence, on the part of the health professional and proto-professionalism, on the part of the patient. The development of adapted culturally adjusted rehabilitation programmes is only possible when management policies of a rehabilitation institute support the innovation of culture-sensitive care programmes for non-native patients in clinical practice.

Implementation of potential solutions for limited accessibility to chronic pain rehabilitation programmes

The existing health policies aim for more appropriate healthcare programmes for non-native patients. The government advocated for a health care system which is differentiated according to the needs of non-native patients (20;21). Recently, several international publications in a special edition of a rehabilitation journal focused on the development of appropriate rehabilitation care for non-native patients or patients from minority groups (22;23) and the education of health professionals regarding culturally appropriate care (24). This indicates that there is growing international awareness of the limited accessibility and quality of the existing rehabilitation programmes.

As reported in the introduction of this thesis, there is a paucity of knowledge regarding the implementation of appropriate adaptations and strategies that aim for adequate rehabilitation for non-native patients. The study into adaptations of rehabilitation programmes for patients with chronic pain of non-native origin, which is presented in chapter 7, addressed this gap in the literature by exploring whether rehabilitation programmes in The Netherlands have been adapted. The main finding of this study is that less than half of the rehabilitation institutes implemented one or more adaptations to the rehabilitation programme. Institutes with a 'high need', as indicated by a high number of non-native citizens in the city where the institute is situated, did not focus on the specific non-native patient population in their service area by creating culturally adjusted programmes for these patients. Also the larger institutes with a high number of employees, and potentially more financial resources, did not adapt their rehabilitation programmes more often than institutes with a low number of employees. Institutes with a high percentage of non-native patients were more likely to have adapted their rehabilitation programmes. It appears that when institutes adapt their rehabilitation

programmes, they indeed attract a higher number of non-native patients. It could of course be that institutes wish to adapt their programmes, but do not know how to initiate these adaptations to their programmes or are prevented from doing so by a lack of financial resources. Another explanation may be that health professionals working in institutes without adaptations do not sufficiently evaluate their daily working methods in treating patients with a different cultural or ethnic background (25). Potentially, a lack of management policies regarding the implementation of culturally appropriate care functions as a barrier for health professionals to overcome disparities in the use of rehabilitation care. Lastly, a recent social trend in The Netherlands is that, in general, non-native citizens are expected to socially, culturally, and linguistically integrate into the Dutch society. As a result it is debated whether, for instance, the translation of health education materials is a measure which is acceptable to the general public. These social developments influence the different levels within the healthcare sector, e.g., health professionals, managers of health institutes, and healthcare policy makers. However, the findings of this thesis indicate the importance of appropriate communication and health education in order to improve the accessibility of care for non-native patients.

Various interventions and strategies are available for health professionals to overcome the reported barriers in the accessibility and quality of rehabilitation care in non-native patients with chronic non-specific low back pain. These strategies and interventions are derived from studies conducted in other health care sectors. The following paragraphs indicate how these strategies and interventions may improve the clinical care for non-native patients with chronic pain.

Adapted educational modules

As reported in the paragraphs on reasons for drop-out, both patients of Turkish and Moroccan origin and native Dutch patients had a different view on the origin and treatment of chronic low back pain (see chapter 3 and 5). To prevent these differences from causing drop-out, additional educational modules regarding the bio-psychosocial approach (26) can precede the regular programme and, subsequently, create the possibility for patients to become acquainted with this approach to chronic non-specific pain. A bio-psychosocial approach is characterized by the view that a combination of physical, psychological and social factors can cause chronic pain (27). Patients with limited proficiency in the Dutch language and limited basic knowledge regarding the human body and diseases may profit from the development of adapted (audio)visual educational materials. These materials can be used to give basic information regarding the human body, such as the position of the different organs in the body and the function

of muscles, bones, and organs. These additional educational modules may help patients to adjust their explanatory model on the origin and treatment of non-specific low back pain, which reduces the gap with the explanatory model of health professionals.

Professional interpreters

When a lack of language proficiency is compensated by the use of professional interpreters, it is expected that communication and language barriers will diminish. It has been shown that the use of physical therapy increases in non-native patients with more proficiency in the Dutch language (28). Moreover, it has been shown that the use of professional interpreters improves the care for patients with a limited language proficiency (29). However, several studies in this thesis showed that the use of professional interpreters is limited. It is known that care providers need to learn how to adequately use professional interpreters (30). For rehabilitation institutes, who wish to promote and implement the use of professional interpreters, it is recommended to educate employees regarding the use of such interpreters.

Health adviser

A study in women of Turkish and Moroccan origin with pain complaints showed that the use of a health adviser with the same cultural background and native language (Voorlichter Eigen Taal en Cultuur (VETC) in Dutch) led to a significant improvement regarding the women's self-reported health status, their psychological health status, and the ability to cope with pain (31). This health adviser has the ability to convert health messages of physicians and health professionals to the patient's specific situation. The health adviser adjusts the message to the patient's level of knowledge and their social situation. Health advisers are present at physician or health professional consultations and also provide separate treatment sessions to patients without the presence of physicians or health professionals. Therefore, this health adviser has more time to repeat the given information, which better enables patients to understand and retain the information. Patients with non-specific chronic pain therefore may profit from the introduction of such a health advisor during the rehabilitation treatment. Forum, the Institute for Multicultural Development (www.forum.nl), developed an implementation handbook (32) which rehabilitation institutes may use to implement the use of health advisers with the same cultural background and native language.

Increased number of and longer consultations

It has been shown that the use of longer educational treatment sessions regarding the patients' disease and its consequences enables patients to understand the effect of their

behaviour on the recovery from their disease and the prevention of a relapse (33) (Chapter 6). The use of an increased number of consultations or longer treatment sessions may help non-native patients with chronic non-specific pain to understand the origin of their symptoms and the factors which maintain chronic pain.

Cultural competence training

It has been found that cultural competence training improved knowledge, attitudes, and skills in health professionals regarding treatment of patients with another cultural and linguistic background. Cultural competence training can be given by interactive lectures and small group teaching with role-play exercises and patient centred interviews to enhance cultural understanding. (34;35). As reported earlier, culturally adjusted care is a way to support patients in their process of proto-professionalism. It is recommended that rehabilitation institutes organise these kinds of cultural competence trainings programmes. As mentioned earlier, culturally competent health professionals and cultural adjusted care enable patients to develop their proto-professionalism, which brings together the explanatory model of patients and of health professionals.

Deep structure

The mental health care sector in The Netherlands has been especially active in improving the cultural sensitivity of health programmes and experimented with specific strategies for non-native patients to improve treatment, such as the use of peer educators and adapted health education (33). It is debatable, however, whether there is a need to focus on specific values and norms of specific ethnic groups in the process of creating culturally sensitive healthcare programmes (36). Resnicow and colleagues (1999) argued that besides more superficial adaptations to healthcare programmes, such as providing educational materials in the patient's native language, there is a need for adaptations of the 'deep structure' of cultural sensitivity. Deep structure refers to characteristics such as cultural values, beliefs, and behaviour (37). Increasing the number and length of consultations (see Chapter 6) to find out the beliefs which patients have regarding the origin and meaning of their illness can be considered as an example of the deep structure of cultural sensitivity. The concept of deep structure is in line with the concept of explanatory models (38), which is used in this thesis. Explanatory models reflect the patients' beliefs and behaviours regarding their illness. By exploring the relevant components of the patients' explanatory model, culturally sensitive health professionals, are more able to understand the patients health behaviour. Furthermore, health professionals are able to reduce the gap in explanatory models between patients and themselves in order to help patients to understand the role of the different factors which

maintain chronic pain. Moreover, an increase in cultural sensitivity in health professionals enhances the development of a meaningful therapeutic relationship. Adaptations such as an increase in cultural sensitivity can only be implemented when managers and health professionals of a treatment team sincerely lend support to these adaptations.

Methodological considerations

The discussion sections of all empirical chapters paid attention to the strengths and limitations of the presented studies. The most important issues will be discussed in this section.

Methods

For the studies in this thesis, we used 'Mixed methods'. 'Mixed methods' combines the collection and analysis of quantitative and qualitative data. A quantitative study was used to determine differences in drop-out rate between non-native and native patients (Chapter2). The reasons for drop-out between non-native and native patients were quantitatively compared in the medical file study presented in chapter 3. Due to the limited available knowledge on the process of drop-out and the reasons for drop-out from rehabilitation, we used a qualitative method to thoroughly explore the reasons for drop-out in patients of Turkish and Moroccan origin (Chapter 5). Qualitative methods are especially useful when there is limited knowledge of a phenomenon (39).

Due to the use of indirect data derived from medical patient files in chapter 3 some bias is possible due to the interpretation process of the physician or the therapist with regard to the reasons for drop-out. To strengthen the knowledge on reasons for drop-out qualitative studies were used to provide direct information from the patient's perspective on the process of dropping out in non-native patients. The data in chapters 4 and 5 regarding sources of tension during the first rehabilitation consultation and reasons for drop-out were collected by patient interviews.

The medical file studies presented in chapter 2 and 3 included also a native Dutch population, which enabled us to contrast the drop-out rates and reasons for drop-out of non-native with native Dutch patients. Because the qualitative study regarding reasons for drop-out (chapter 5) lacked a control group, a future controlled study needs to test whether the reasons for drop out, such as due to different expectations regarding the content of rehabilitation treatment, occur more often in non-native than in native patients.

Generalization

The data from the studies in chapters 2, 3, and 5 was collected in 4 and 6 rehabilitation institutes, respectively. This contributed to the ability to generalize the findings. The qualitative studies in chapters 4 and 6 had a small sample size (12 and 11), which influenced the ability to generalize these findings. The sample size was small due to practical limitations such as the duration of the study and the availability of participants. These studies need to be replicated with larger sample sizes. The qualitative study into reasons for drop-out (chapter 5) was conducted in patients of Moroccan and Turkish origin because these patients had the highest drop-out rates, (see chapter 2). The ability to generalize the findings to other ethnic groups and patients with different diseases needs to be tested through further research.

Cultural validity of the methods used

Linguistic equivalence was reached by using professional interpreters during the patient interviews in the qualitative studies. The ethnic background of the interviewer in the qualitative studies could not be analyzed as a separate variable, this would have strengthened the validity of the method.

Implications for implementation

In this paragraph, advice is provided and implications are outlined for the implementation of programme adaptations in the clinical care for non-native patients with chronic non-specific pain. The implications and advices are based on the studies conducted for this thesis. The study among rehabilitation institutes which offer rehabilitation programmes for patients with chronic non-specific pain (chapter 7) showed that interventions and strategies which potentially improve treatment in non-native patients are not being implemented in clinical practice. However, rehabilitation institutes can improve the accessibility of rehabilitation programmes for non-native patients, by using adapted interventions and strategies.

The first prerequisite for implementation (40) of culturally competent care is that health professionals and managers within a rehabilitation institute are aware that barriers for non-native patients need to be reduced. This may be enhanced by presenting and discussing the results of the studies conducted for this thesis with health professionals and managers. Subsequently, it is important to create support for adaptations of the existing programmes among managers and health professionals. This can be realised by providing a cost-benefit analysis of cultural adjusted care. Especially in the view of the

fact that in the larger cities in The Netherlands non-native patients potentially account for a significant percentage (e.g. Amsterdam 49%) of the patient population it may be financial profitable for rehabilitation institutes to provide these patients with appropriate treatment. This thesis showed that institutes which have initiated adaptations to the rehabilitation programme appear to attract more non-native patients (chapter 7). However, programme adaptations such as an increased number of consultations, longer consultations and the use of additional health advisers are a potential financial burden for institutes. In contrast, an improvement in the process and quality of care for non-native patients may eventually lead to a reduction in costs. Both the improvement of care for non-native patients and a reduction of healthcare costs are important benefits for the Dutch society. The next step, after creating support, is the need for consensus among health professionals regarding the type of adaptations which potentially increase the accessibility of care for non-native patients. After reaching consensus institutes need to determine the preconditions (e.g. rescheduling of the therapy programme or training of health professionals) for implementation of the programme adaptations in clinical practice. Lastly, studies are needed into the potential effects of the programme adaptations, as mentioned above in the paragraph on implementation of solutions, on treatment outcome for patients of non-native origin with chronic pain.

Directions for future research

The study into the drop-out rate did not focus on the influences of socioeconomic factors on drop-out rates. As a result, it is unknown whether the difference in drop-out rate between native and non-native patients was partially caused by differences in the socioeconomic status (e.g., level of education and occupational conditions) between native and non-native patients. Future studies should focus on the influence of socioeconomic factors on drop-out rates in non-native patients. Furthermore, a future study regarding the drop-out rate of non-native patients needs to focus on differences between non-native patients who were born in The Netherlands and non-native patients who are born abroad.

The finding from the retrospective medical file study, that drop-out from rehabilitation treatment due to different expectations regarding the content of rehabilitation occurs more often in non-native patients **(chapter 3)** needs to be tested using a controlled study with direct patient involvement, with native patients as a control group. This is important because the study presented in chapter 3 was based on indirect data from patient files.

The reasons for drop-out have been explored in a population of patients from Turkish and Moroccan origin **(Chapter 5)**. Future research into reasons for drop-out in patient populations with other non-native backgrounds than a Turkish or Moroccan background would strengthen the knowledge on reasons for drop-out in non-native patients and the ability to generalize the findings.

The qualitative study into non-native patients who participated in an adapted cardiac rehabilitation programme showed that the realised adaptations were beneficial for non-native patients **(Chapter 6)**. Future quantitative research is needed to verify what the effect of the realised adaptations is on the treatment outcome in non-native patients.

As shown in **Chapter 7,** institutes providing pain rehabilitation developed, to a limited amount, adaptations to pain rehabilitation programmes for non-native patients. A future study should determine which methods enhance the implementation of adaptations and strategies for non-native patients in rehabilitation programmes.

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