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NURSE-LED INTERPERSONAL COUNSELLING FOR DEPRESSIVE SYMPTOMS IN PATIENTS WITH MYOCARDIAL INFARCTION

by

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ABSTRACT

The broad interest of this intervention study is in two worldwide remarkable diseases, myocardial infarction and depression. The purpose of the 18-month follow-up study was to evaluate the outcomes of interpersonal counselling implemented by a psychiatric nurse, and to examine the recovery experienced by the patients after myocardial infarction. The interpersonal counselling consisted of a short-term (max 6 sessions) depression-focused intervention modified for myocardial infarction patients. The main principle of interpersonal counselling is that depressive symptoms relate to interpersonal relations. The measured outcomes of the intervention consisted of changes in depressive symptoms and distress, health-related quality of life and the use of health care services. The data consisted of 103 patients with acute myocardial infarction and with sufficient knowledge of Finnish language, and they were randomized into intervention group (n=51) and control group (n=52) with standard care.

Depressive symptoms were measured using Beck Depression Inventory, and distress using Symptom Checklist-25. The instrument to measure health-related quality of life was EuroQol-5 Dimensions. All instruments were used at three measurements: in hospital, at 6 months and at 18 months after hospital discharge. The Use of Health Care Services questionnaire was used during the 6- and 18-month period after hospital discharge. In addition, satisfaction with the intervention and with information received from the health-care professional was evaluated during the follow-up. To examine recovery, the patients kept diaries during a 6-month period and they were interviewed at 18 months after myocardial infarction.

The number of patients with depressive symptoms decreased significantly more in the intervention group compared with the control group during 18 months of follow-up. Distress decreased significantly more among patients under 60 years in the intervention group than in the control group, but the difference was not significant between the groups. No differences in the changes of health-related quality of life were found between the groups during follow-up. However, in the group of patients under 60 years, the improvement of health-related quality of life in the intervention was significantly better in the intervention group compared with the control group during the follow-up. During the follow-up period, there was even a decline in the use of somatic specialized health care services in the intervention group and among intervention patients who had no other long-term disease. Considering recovery experienced by the patients, main categories including many supporting and inhibiting factors and subcategories were identified: clinical and physical, psychological, social, functional and professional category. No differences between the groups were found in satisfaction with information received from the professionals.

The brief and easy-to-learn intervention, with which the patients were satisfied, seems to decrease depressive symptoms after myocardial infarction. Interpersonal counselling seems to be beneficial especially with younger patients. These results justify adopting depression screening and interpersonal counselling as part of routine care after myocardial infarction. The first stage evaluation of the use of health care services is interesting, and calls for more studies. From the perspective of individual patients, recovery after myocardial infarction seems to consist of many supporting and inhibiting factors. This is something that is important to take into account in developing nursing practice. The results indicate a need for further studies in outcomes of interpersonal counselling and recovery experienced by the patients after myocardial infarction. In addition, the results encourage widening the research perspective to nursing administration and educational level.

Keywords: interpersonal counselling, myocardial infarction patient, nursing practice, depressive symptoms, distress, health-related quality of life, recovery experienced by the patient, the use of health care service

TIIVISTELMÄ

Tässä tutkimuksessa tarkastellaan laaja-alaisesti kahta, kansainvälisesti merkittävää sairautta: sydäninfarktia ja depressiota. Tutkimus oli 18 kuukauden seurantatutkimus, jossa arvioitiin sairaanhoitajan tekemän interpersonal counselling (interpersoonallinen ohjaus) –intervention tuloksia ja potilaiden kokemuksia sydäninfarktista selviytymisestä. Sydäninfarktipotilaiden masennukseen kohdistunut interventio oli lyhyt, enintään 6 tapaamisen ohjaus, jonka perusidea on tarkastella ihmissuhteiden ja mielialan yhteyttä. Tutkimuksen tulokset koostuivat muutoksista, joita havaittiin potilaiden masennusoireissa, rasittuneisuudessa, terveyteen liittyvässä elämänlaadussa ja terveyspalvelujen käytössä. Aineisto koostui 103:sta akuutin sydäninfarktin saaneesta potilaasta, joilla oli riittävän hyvä suomen kielen taito, ja heidät satunnaistettiin interventioryhmään (n=51) ja kontrolliryhmään (n=52), joka sai normaalihoidon.

Depressio-oireita mitattiin Beck Depression Inventory -kyselyllä ja rasittuneisuutta Symptom Checklist-25 –kyselyllä. Terveyteen liittyvää elämänlaatua mitattiin EuroQol-5D -mittarilla. Kaikkia näitä mittareita käytettiin sairaalahoidossa sekä 6 ja 18 kuukautta sairaalahoidon loppumisesta. Terveyspalvelujen käyttö -kyselyä käytettiin 6 ja 18 kuukauden kuluttua sairaalahoidon loppumisesta. Lisäksi seurannan aikana kartoitettiin, kuinka tyytyväisiä potilaat olivat interventioon ja ammattilaisilta saamaansa tietoon. Selviytymiskokemuksen kartoittamiseksi potilaat kirjoittivat päiväkirjoja kuuden kuukauden ajan, ja heidät haastateltiin 18 kuukautta sydäninfarktin jälkeen.

Depressio-oireista kärsivien potilaiden määrä väheni enemmän interventioryhmässä kuin kontrolliryhmässä, jossa se pysyi korkeana koko seurannan ajan. Alle 60-vuotiaiden interventiopotilaiden rasittuneisuus väheni enemmän kuin kontrolliryhmässä, mutta koe- ja kontrolliryhmän välinen ero ei ollut merkitsevä. Terveyteen liittyvän elämänlaadun muutoksissa ei seurannan aikana havaittu ryhmienvälistä eroa. Kuitenkin alle 60-vuotiailla terveyteen liittyvä elämänlaatu parani enemmän interventioryhmässä kuin kontrolliryhmässä. Seurannan aikana interventiopotilaiden sekä interventiopotilaiden, joilla ei ollut muita pitkäaikaissairauksia, tarve somaattiseen erikoissairaanhoitoon osittain jopa väheni. Potilaiden kokemuksissa havaittiin pääkategoriat: kliininen ja fyysinen, psykologinen, sosiaalinen, toiminnallinen ja ammatillinen. Pääkategoriat koostuivat alakategorioista, joihin kuului paljon selviytymisessä tukevia ja estäviä tekijöitä. Tyytyväisyys ammattilaisilta saatuun tietoon ei vaihdellut ryhmittäin.

Lyhytkestoinen ja helposti opittava interventio, johon potilaat ovat tyytyväisiä, näyttää vähentävän depressio-oireita sydäninfarktin jälkeen. Interpersonal counselling -interventio vaikuttaa olevan hyödyllinen erityisesti nuoremmille potilaille. Tulokset osoittavat, että depressioseulonta ja interpersonal counselling -interventio saattaisi olla hyödyllistä ottaa osaksi rutiinihoitoa sydäninfarktin jälkeen. Alustava selvitys terveyspalvelujen käytöstä on mielenkiintoinen ja osoittaa, että jatkotutkimuksia tarvitaan. Selviytyminen sydäninfarktin jälkeen näyttää koostuvan lukuisista tukevista ja estävistä tekijöistä yksittäisen potilaan omasta näkökulmasta, mikä on hyvä huomioida kehitettäessä käytännön hoitotyötä. Tulokset interpersonal counselling –interventiosta ja potilaan kokemasta selviytymisestä sydäninfarktin jälkeen ovat tuottaneet jatkotutkimusaiheita. Lisäksi tulokset rohkaisevat laajentamaan tutkimusnäkökulmaa sairaanhoidon hallintoon ja koulutukseen.

Avainsanat: interpersonal counselling, sydäninfarkti potilas, käytännön hoitotyö, depressio-oireet, rasittuneisuus, terveyteen liittyvä elämänlaatu, potilaan kokema selviytyminen, terveyspalvelujen käyttö

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ABBREVIATIONS

ANOVA	Analysis of variance
APA	American Psychiatric Association
BDI	Beck Depression Inventory
CAD	coronary artery disease
ECG	Electrocardiography
DSM-4	Diagnostic and Statistical Manual of Mental Disorders
EQ-5D	EuroQol-5 Dimensions
HRQOL	health-related quality of life
GEE	generalized estimating equations
ICD-10	International Classification of Diseases
ICN	International Council of Nurses
IPC	interpersonal counselling
IPT	interpersonal therapy
MDD	major depressive disorder
MI	myocardial infarction
QOL	quality of life
RCT	randomized controlled trial
SCL-25	Symptom Checklist-25
SD	Standard deviation
STEMI	ST-Segment Elevation Myocardial Infarction
UHCS-q	Use of Health Care Service –questionnaire
VAS	visual analogue scale
WHO	World Health Organization

LIST OF ORIGINAL ARTICLES

This thesis is based on the following publications which are referred to in the text by their Roman numerals I-IV:

I Oranta O, Luutonen S, Salokangas RKR, Vahlberg T & Leino-Kilpi H. 2010. The outcomes of interpersonal counselling on depressive symptoms and distress after myocardial infarction. Nordic Journal of Psychiatry 64, 78-86.

II Oranta O, Luutonen S, Salokangas RKR, Vahlberg T & Leino-Kilpi H. 2011. The effects of interpersonal counselling on health-related quality of life after myocardial infarction. Journal of Clinical Nursing. In press.

III Oranta O, Luutonen S, Salokangas RKR, Vahlberg T & Leino-Kilpi H. 2011. Depression-focused interpersonal counseling and the use of healthcare services after myocardial infarction. Perspectives in Psychiatric Care. In press.

IV Oranta O, Luutonen S & Leino-Kilpi H. 2011. Supporting and inhibiting factors in recovery after myocardial infarction during an 18-month follow-up. Submitted.

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1 INTRODUCTION

Myocardial infarction (MI) and coronary artery disease (CAD) have been recognized as a major public and economically significant health problem worldwide, although mortality has decreased in the Western countries (WHO 2008, 2010a). Cardiovascular diseases are the main cause of mortality in almost all OECD countries, accounting for 36% of all deaths in 2006 (OECD 2009), with relatively high prevalence in Finland: 25,000 Finnish have MI a year, 13,000 of which lead to death (Mustajoki 2011). Regimes worldwide are struggling to pay for health care. As populations get older and more people suffer from chronic diseases, such as CAD (Ahto 1999, WHO 2010b), and as new and more expensive treatments appear, health costs soar (WHO 2010b). Psychiatric problems are also prevalent and burdensome worldwide. In addition, depression, which reduces productivity at work, being the fastest-growing reason for early retirement, is an important health problem in many countries both economically and from the perspective of human suffering. (WHO 2006, 2008, Ministry of Social Affairs and Health 2004, 2009, O'Neil et al. 2010a.) On population level, one in five have depression sometimes in their lifetime (Kessler et al. 2003). About 5% of Finns suffer from current depression, but nowhere near all patients receive treatment on time (Käypä hoito –suositus 2004, Holma et al. 2008). In addition, depression is a chronic disease, where relapses, longitudinal sub-syndromal symptoms (Kennedy et al. 2004) and co-morbidities, especially with anxiety disorders and substance-use disorders (Melartin et al. 2002, Pirkola et al. 2005, Vuorilehto et al. 2005) are prevalent. Psychiatric and somatic co-morbidities are also prevalent, and chronic disease management for depression is also needed in primary care (Vuorilehto et al. 2005, 2009). Similarly, MI and depressive symptoms and depression are linked together (Nicholson et al. 2006, Carney et al. 2009), and MI alone increases the risk of suicide (Larsen et al. 2010). The challenges for the health care system and nursing practice to recognize and treat depressive symptoms and depression after MI are also well known: depression has a strong impact on recovery and mortality after MI (Frasure-Smith & Lespérance 2003, Lespérance et al. 2007), but depressive symptoms and depression seem to be under-recognized and there are deficiencies in care and cure (Ahto 1999, Thornton 2001, Luutonen et al. 2002, Käypä hoito -suositus 2004, Huffman et al. 2006, Vuorilehto 2008). Furthermore, this problem has become more emphasized as the length of stay in hospital after MI has dramatically decreased, while patients' own responsibility and the role of self-management have increased (Sivarajan et al. 1981, Holm et al. 2001, Fang et al. 2010, Häkkinen et al. 2010).

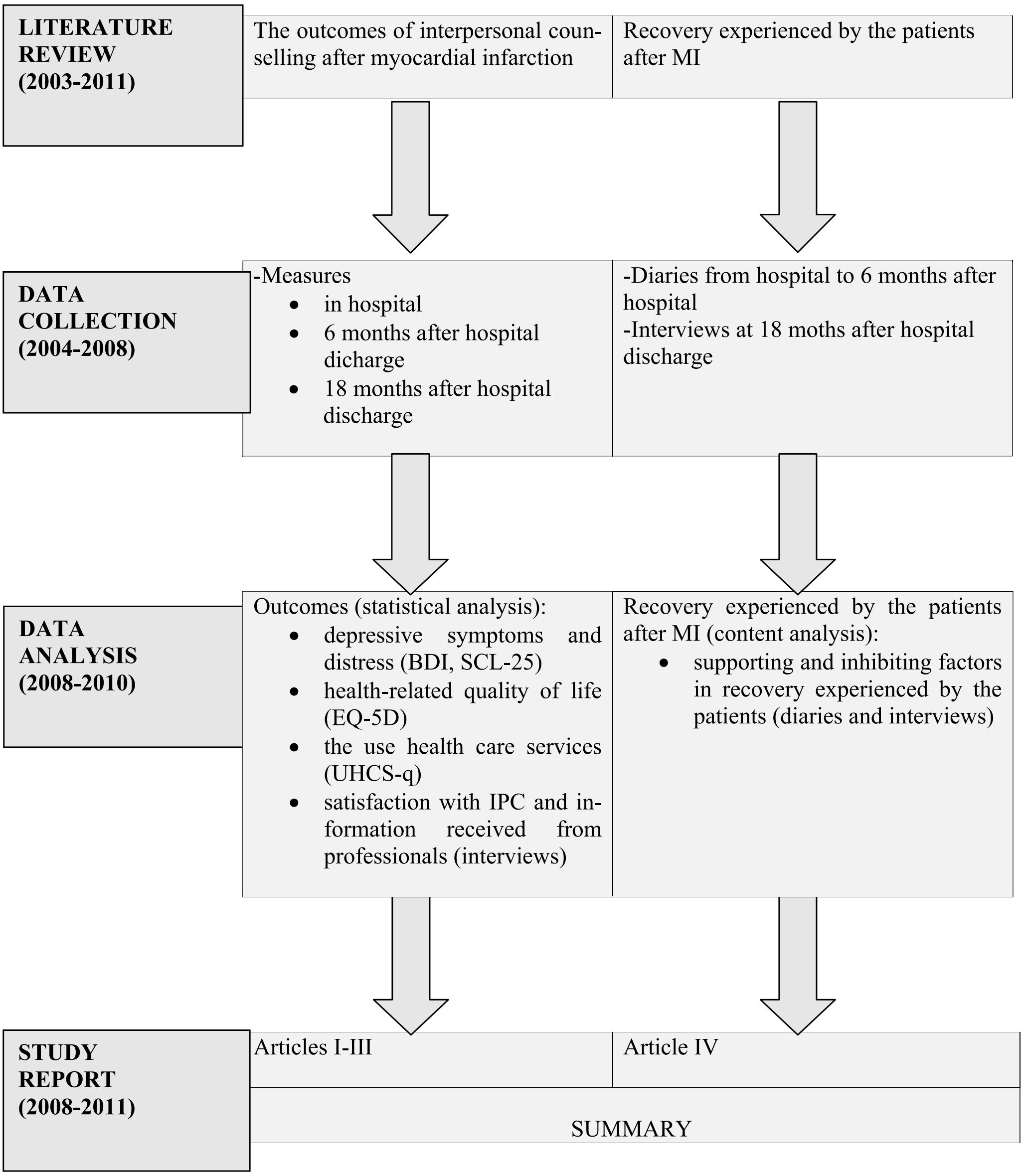
To meet the growing global demands of caring for the increasing numbers of patients with somatic chronic conditions and psychiatric problems, a new approach to training in nursing is needed (European Commission 2005, Pruitt & Epping-Jordan 2005, WHO 2005, Ministry of Social Affairs and Health 2009). In nursing practice, there is a need for interventions that can improve the outcome of patients with MI with regards to depression and distress. Depression-focused interpersonal counselling (IPC) is designed for non-psychiatric patients who have stresses in their lives (Weissman et al. 2000, 2007).

In addition, there is little nursing research related to patients' psychosomatic problems in the area of internal medicine, which is an important and significant area from a health policy and economic perspective.

The outcome measures in this intervention study after MI were depressive symptoms and distress, health-related quality of life (HRQOL), the use of health care services and satisfaction with the intervention and information received from professionals. In depression after MI, pharmacological and non-pharmacological interventions (Johnston et al. 1999, de Leon et al. 2006) are used, mostly with positive outcomes (Linden et al. 1996, Cossette et al. 2001, Petrie et al. 2002, Gallagher et al. 2003, Jones et al. 2003, Lespérance et al. 2007, Freedland et al. 2009). Nursing counselling after MI seem also to have benefits on health behaviour, recognizing symptoms, seeking help at the time, and inner strength to recover from MI (Ryan et al. 2004, Mittag et al. 2006, Tullmann et al. 2007, Mendes et al. 2010). Health-related quality of life (HRQOL) is a significant and important outcome measure of patients' recovery after MI (Beck et al. 2001). Depression after MI may decrease HRQOL (de Jonge et al. 2006). Provider-patient communication interventions seem to work in prevention of MI and after MI from the point of view of better HRQOL (Clark et al. 2005, Buckley et al. 2007, Choo et al. 2007). Considering the use of healthcare services, a brief cardiac counselling intervention soon after MI for patients with depression is an efficient use of health-care resources and may be economically justified (Clark et al. 2005, Oldrigde et al. 2008). However, integrated care after hospital discharge is lacking for patients who survive a myocardial infarction, especially for those suffering from depression (Dalal & Evans 2003, Nicholson et al. 2006). Studies of depression interventions to reduce somatic hospitalizations are needed (Rumsfeld et al. 2005). Patient's satisfaction with information as well as with the intervention is an important outcome measure, because lack of information has been reported after MI (Thompson et al. 1990, Leino-Kilpi et al. 1993, Suhonen et al. 2005, Lichtman et al. 2007, McLean & Timmins 2007, Davidson et al. 2010). Factors related to morbidity, mortality or recovery measured with symptom- and diagnosis-specific instruments after MI have been reported, but less has been written about recovery experienced by the patient from a broader perspective and patients' own perspective (Dixon et al. 2000, Buckley et al. 2007). MI causes many different stresses and distinctive experiences for individual patients, who use, moreover, individually different coping strategies in recovery (Stewart et al. 2000, Webster et al. 2003, Suhonen et al. 2008). In nursing practice, the necessity of interventions after MI in general (Mittag et al. 2006, Buckley et al. 2007) and of concentrating on anxiety and depression has been recognized as having strong negative effects on recovery after MI (May et al. 2009).

The purpose of this 18-month follow-up study was to evaluate the outcomes of interpersonal counselling implemented by a psychiatric nurse after myocardial infarction, and to examine the recovery experienced by the patients after myocardial infarction (Figure 1). An essential consequence of this intervention study was to test in nursing practice the depression-focused intervention for MI patients implemented by a nurse. To create a comprehensive picture and a more patient-centered and deeper understanding of the recovery process after

MI, patients' experiences were analyzed. The study yielded a lot of results on many levels, which can be utilized in nursing practice and in treatment after MI, in nursing education and in further studies. The outcomes of IPC on depressive symptoms and distress after MI have presumably not studied before. There are probably no studies of its indirect effects on HRQOL or its association on the use of health care services, either. Patients' satisfaction with the intervention and the information received from professionals is a small, but complementary part of the study. Supporting and inhibiting factors in recovery after MI highlights patients' perspective as well as the phenomenon of recovery after MI.



LITERATURE REVIEW (2003-2011)	The outcomes of interpersonal counselling after myocardial infarction	Recovery experienced by the patients after MI
DATA COLLECTION (2004-2008)	-Measures • in hospital • 6 months after hospital dicharge • 18 months after hospital discharge	-Diaries from hospital to 6 months after hospital -Interviews at 18 moths after hospital discharge
DATA ANALYSIS (2008-2010)	Outcomes (statistical analysis): • depressive symptoms and distress (BDI, SCL-25) • health-related quality of life (EQ-5D) • the use health care services (UHCS-q) • satisfaction with IPC and information received from professionals (interviews)	Recovery experienced by the patients after MI (content analysis): • supporting and inhibiting factors in recovery experienced by the patients (diaries and interviews)
STUDY REPORT (2008-2011)	Articles I-III	Article IV
	SUMMARY	

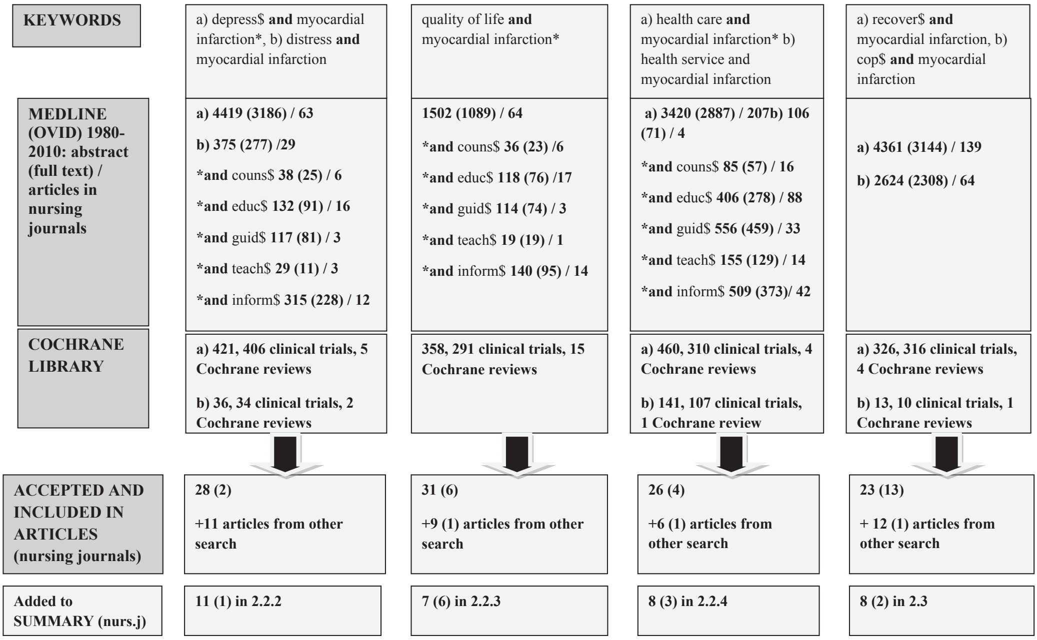
Figure 1. The study process

2 LITERATURE REVIEW

A literature review is a recitation of what has been published on a topic by accredited scholars and researchers. The focus of a literature review is to summarize and synthesize the arguments and ideas of others without adding new contributions. (Hart 2001.) A systematic review aims to provide an exhaustive summary of literature relevant to a research question. The value of including data from different types of studies in systematic reviews of health interventions is increasingly recognized. (Thomas et al. 2004.) The aim of the literature review was to gain a comprehensive view of the outcomes of counselling interventions and recovery experienced by the patients after myocardial infarction. A literature review considering IPC was conducted at the beginning of the study, to modify IPC and to train the intervention nurse in conducting IPC for MI patients. The results of original search of interpersonal counsel(l)ing produced of six references, one of which were in book and five articles. The results of this first review were presented in each article (depressive symptoms and distress, HRQOL, the use of health care services and recovery experienced by the patients after MI) and in summary with reinforced perspective, depending on the point of view. Five concepts (Figure 2) close to counsel(l)-ing were used in literature review to chart the outcomes of activities of the same kind as IPC. Furthermore, depressive symptoms and distress after myocardial infarction were described. In addition, in the first search, the outcomes of interventions on depressive symptoms and distress were investigated (Paper I). In a second search, health-related quality of life and the effects of the interventions on health-related quality of life were examined (Paper II). In the third search of literature review, the use of health care services and possible effects of counselling interventions on it were described arising from literature (Paper III). The fourth search included the examination of what is known about the recovery experienced by the patients after myocardial infarction, and how this topic had been studied before (Paper IV). The literature review concerning satisfaction with care and with information was carried out as a smaller part of the study as its own entity and is presented in the summary.

A systematic search of literature in articles, complemented by search for the present thesis summary, was conducted in Medline (Ovid) and the Cochrane Library based on methods described by Khan et al. (2003). The acceptation criteria for the included articles were scientifically acceptable level and essential knowledge for this study. The inclusion and exclusion criteria were as follows: If the study reported the outcomes of this field of study or recovery after MI or outcomes like counselling interventions after MI or in CAD, it had chance of being selected. All other results of searches were excluded. The time period of the searches in Medline (Ovid) was limited from 1980 to current databases because of rapid advancement in care after MI. The search was limited to “English language”, “abstract”, and “full text”. The searches in Cochrane Library were limited to “title”, “abstract”, or “keyword”.

The Medline (Ovid) and the Cochrane Library were used as basic databases. Medline (PubMed) and Cinahl (Ebsco) were used to confirm the results of searches in these databases, but they added very little essential knowledge to the literature review. In order to gain a comprehensive knowledge of interpersonal counselling and the results of counselling interventions after MI, a manual search by the researcher were used on demand in selected manner. The manual search included sources of related literature and the articles found from the references of the examined articles. Database searches were conducted periodically during different phases of publishing articles during the study, from spring 2003 to spring 2011. The summary searches were continued until spring 2011 and produced more references all of time.



KEYWORDS	a) depress$ **and** myocardial infarction*, b) distress **and** myocardial infarction	quality of life **and** myocardial infarction*	a) health care **and** myocardial infarction* b) health service and myocardial infarction	a) recover$ **and** myocardial infarction, b) cop$ **and** myocardial infarction
MEDLINE (OVID) 1980-2010: abstract (full text) / articles in nursing journals	**a) 4419 (3186) / 63** **b) 375 (277) /29** ***and** couns$ **38 (25) / 6** ***and** educ$ **132 (91) / 16** ***and** guid$ **117 (81) / 3** ***and** teach$ **29 (11) / 3** ***and** inform$ **315 (228) / 12**	**1502 (1089) / 64** ***and** couns$ **36 (23) /6** ***and** educ$ **118 (76) /17** ***and** guid$ **114 (74) / 3** ***and** teach$ **19 (19) / 1** ***and** inform$ **140 (95) / 14**	**a) 3420 (2887) / 207b) 106 (71) / 4** ***and** couns$ **85 (57) / 16** ***and** educ$ **406 (278) / 88** ***and** guid$ **556 (459) / 33** ***and** teach$ **155 (129) / 14** ***and** inform$ **509 (373)/ 42**	**a) 4361 (3144) / 139** **b) 2624 (2308) / 64**
COCHRANE LIBRARY	**a) 421, 406 clinical trials, 5 Cochrane reviews** **b) 36, 34 clinical trials, 2 Cochrane reviews**	**358, 291 clinical trials, 15 Cochrane reviews**	**a) 460, 310 clinical trials, 4 Cochrane reviews** **b) 141, 107 clinical trials, 1 Cochrane review**	**a) 326, 316 clinical trials, 4 Cochrane reviews** **b) 13, 10 clinical trials, 1 Cochrane reviews**
ACCEPTED AND INCLUDED IN ARTICLES (nursing journals)	**28 (2)** **+11 articles from other search**	**31 (6)** **+9 (1) articles from other search**	**26 (4)** **+6 (1) articles from other search**	**23 (13)** **+ 12 (1) articles from other search**
Added to SUMMARY (nurs.j)	**11 (1) in 2.2.2**	**7 (6) in 2.2.3**	**8 (3) in 2.2.4**	**8 (2) in 2.3**

Figure 2. The search path of the included studies of the original articles

In this literature review, no articles were found of outcomes of IPC on depressive symptoms or distress, on HRQOL, on the use of health care services or on recovery after MI. On the other hand, depression, HRQOL, the use of health care services and recovery after MI have been extensively studied. This gave rise to the solution of using double keywords in the literature review with reinforced terms. In addition, the number of nursing studies in the literature review was quite small both generally and in terms of included articles (25), through some nursing studies were included in meta-analysis of other included studies. The terms "depression (depr$)" and "distress" produced mostly medically oriented studies. A lot of studies under term "myocardial infarction" related to somatic care and cure but somatic outcomes after MI were outside the scope of this study. Searches with the term "quality of life" found articles associated with three articles as well. The terms "recovery (recover$)" and "coping (cop$)" and "myocardial infarction" produced a large number of articles. Recovery after MI has mostly been studied using other more instructional indicators than patients' experience. This search mostly produced nursing studies, which were included in the study. There is a lot of research on the use of health care services after MI, but very little on the association of nursing interventions and the use of health care services after MI.

2.1 Myocardial infarction and depression

In The Oxford Dictionary of English (2005), myocardial is defined as pertaining to the "anatomy the muscular tissue of the heart" and infarction as "obstruction of the blood supply to an organ or region of tissue, typically by a thrombus or embolus, causing local death of the tissue". Myocardial infarction is part of a range of disorders called acute coronary syndromes. MI can be defined from a number of different perspectives related to clinical, electrocardiographic (ECG), biochemical and pathologic characteristics. The term MI also has psychological and social implications, both as an indicator of a major health problem and as a measure of disease prevalence in population statistics and outcomes of clinical trials. (Antman et al. 2000.) MI is usually caused by a blood clot that stops blood flow in a coronary artery, meaning that part of the heart muscle suddenly loses its blood supply. Without prompt treatment, this can lead to damage to the affected part of the heart. An MI is sometimes called a heart attack or a coronary thrombosis. There are different types of MI based on what is seen on ECG. The two main types are called ST elevation MI (STEMI) and non-ST elevation MI (NSTEMI). The treatment will depend upon the type of MI. (Häkkinen et al. 2007, Moe & Wong 2010.)

The interest of this study was depressive symptoms after MI. The severity and types of symptoms of depression vary from person to person. Depressive symptoms can be cognitive-affective as well as somatic in nature (Beck et al. 1961, 1988, Beck & Steer 2001.) Typical cognitive-affective symptoms include feelings of sadness, anxiety or despair which do not go away. Other feelings may include hopelessness, guilt, worthlessness, helplessness, and anger and irritability. Depressive patients may also experience a loss of interest in activities they once enjoyed, social withdrawal, chronic fatigue, trouble focusing, and difficulties with memory or in making decisions. Suicidal thoughts or attempts may also be experienced. Sleep abnormalities, such as insomnia or a desire to sleep all the time may occur as somatic depressive symptoms. Depressive patients may experience worsened body image changes, work retardation or lack of appetite. They may also notice loss of libido or somatic preoccupation. Many patients with depression have complaints of physical symptoms, especially chronic pain. (Beck & Steer 2001, Käypä hoito –suositus 2004, Tontti 2008, Isometsä 2009.) The severity of depressive symptoms is an important predictor of outcome in depression (Vuorilehto et al. 2009). The number and severity of depressive symptoms can be measured with different kinds of questionnaires and interviews. Some patients with depressive symptoms have clinical depression, but a definite diagnosis calls for more precise medical assessment. (Poutanen et al. 2007.)

Depression is defined in The Oxford Dictionary of English (2005) as "severe, typically prolonged, feelings of despondency and dejection; a mental condition characterized by severe feelings and hopelessness and inadequacy, typically accompanied by lack of energy and interest in life", and the adjective depressive as "causing feelings of severe despondency and dejection". Distress is defined as "extreme anxiety, sorrow, or pain". The term distress in this study included anxiety, cognitive affective depressive and somatic depressive symptoms (Derogratis et al. 1976, Joukamaa et al. 1994). According to the DSM-IV, there are three types of depressive disorders: major depressive disorder (MDD), dysthymic disorder or depression not otherwise specified. MDD is divided into single and recurrent episodes.

In DSM-IV the typical depressive symptoms of MDD are the following:

- Depressed mood
- Decreased interest or pleasure in things

For MDD diagnosis, these symptoms have to present along with at least four of the following nearly every day:

- Weight or appetite change
- Sleep disturbances
- Agitation and lethargy
- Fatigue or loss of energy
- Feeling worthless or guilty
- Difficulty concentrating or making decisions
- Feeling as if life is no longer worth living (suicidal thoughts)

Dysthymic disorder consists of chronic but milder symptoms than in the case of MDD. Depression not otherwise specified includes several forms of briefer or milder periods of depression. DSM-IV and ICD-10 diagnosis of MDD differ slightly. (Isometsä 2007, Vuorilehto 2008.)

According to the DSM-IV, a person who suffers from MDD must either have depressed mood or a loss of interest or pleasure in daily activities consistently for at least a two-week period. This mood must represent a change from the person's normal mood; social, occupational, educational or other important functioning must also be negatively impaired by the change in mood. A depressed mood caused by substances (such as drugs, alcohol, medications) or which is part of a general medical condition is not considered to be major depressive disorder. (Sosiaali- ja Terveysministeriö 1997, American Psychiatric Association 2000, Isometsä 2007.)

According to the ICD-10, for depressive episode at least two of following three symptoms must be present: (1) depressed mood, (2) loss of interest or pleasure or (3) decreased energy. In typical depressive episodes the patient suffers from lowering of mood, reduction of energy, and decrease in activity. Capacity for enjoyment, interest, and concentration is reduced, and marked tiredness after even minimum effort is common. Sleep is usually disturbed and appetite diminished. Self-esteem and self-confidence are almost always reduced and, even in the mild form, some ideas of guilt or worthlessness are often present. The lowered mood varies little from day to day, is unresponsive to circumstances and may be accompanied by loss of interest and pleasurable feelings, waking in the morning several hours before the usual time, depression being worst in the morning, marked psychomotor retardation, agitation, loss of appetite, weight loss, and loss of libido. Depending upon the number and severity of the symptoms, a depressive episode may be specified as mild, moderate or severe. (Sosiaali- ja Terveysministeriö 1997, American Psychiatric Association 2000, Isometsä 2007.)

From the perspective of psychiatric care, the nature of depression varies. Firstly, the person may experience depression suddenly and for a short period of time following an event such as loss of employment. Secondly, depression may be short-term but fairly more serious in nature following death of significant other or other traumatic experience. In both of these cases, the person experiences a period of great grief and may require help from intimates and possibly from professionals. However, the third form of depression, which is long-term or keeps returning is the most prevalent. (Barker 1992, Beech 2003.) Traditionally in psychiatric nursing practice, depression may have an identifiable cause, such as MI, or not seeming to emanate from within without any identifiable reason (Beech 2003).

In general, depression in association with CAD and MI seems not to differ from non-cardiac depression (Naarding et al. 2009, Larsen et al. 2010), regardless of the somatic nature of MI. Somatic manifestation and symptoms of depression after MI seem to associate with long-term mortality and rehospitalizations, and cognitive depressive symptoms with recognition of depression after MI (Smolderen et al. 2009). A significant association has been found between depression and MI and CAD (Nicholson et al. 2006, Carney et al. 2009). MI is evidently a risk factor for depression (Karlsson & Salokangas 1997, Ahto 1999, Luutonen et al. 2002, Frasure-Smith & Lespérance 2003, Rowan et al. 2005, Green et al. 2009). Depression persisting after MI may add to cardiac morbidity and mortality, as well as suicide (Frasure-Smith et al. 1999a, 1999b, Kaufman et al. 1999, Lauzon et al. 2003, Larsen et al. 2010), and to reduce functioning and well-being (Karlsson & Salokangas 1997, Lane et al. 2000, 2005, Rowan et al. 2005).

2.2 Interpersonal counselling

Counselling is defined in The Oxford Dictionary of English (2005) as "the provision of professional assistance and guidance in resolving personal or psychological problems: bereavement counselling", and the verb counsel as "advice, especially that given formally; archaic consultation, especially to seek or give advice". Patient education and counselling is more than providing information. It has to help patients achieve a deep understanding and give them possibilities to make reliable decisions on the basis of adequate information. (Leino-Kilpi et al. 2000.) The nature of empowerment in nursing discourse and counselling is complex and multifaceted but analysable (Virtanen et al. 2007). Effective nursing counselling has been reported to include reflective questions (Poskiparta et al. 1998), hope inspired by nurses and patients (Cutcliffe 2006a, 2006b) and hope focused on interpersonal counselling in psychiatric and mental health nursing (Cutcliffe & Koehn 2007). Non-directive counselling assumes that talking about feelings to an emphatic and non-judgemental professional will help the patient (Rogers 1951, 1980, Glavin et al. 2010). Counselling is a type of talking therapy. People talk to a counsellor about their problems. Counsellors are experts, they have been trained to listen sympathetically and they can help people deal with any negative thoughts and feelings they might have (NICE 2004, Smith & Robertson 2006). The National Institute for Health and Clinical Excellence (NICE) recommends certain types of talking therapies for treating a number of different health conditions, such as depression. Counselling differs from psychotherapy, which is more long-lasting, more sensitive and more frequently and deeply targeted than counselling. Psychotherapy given by a certificated professional is directed to psychiatric symptoms and disease, behavioural problems and personal growth. Despite different types of psychotherapy – such as psychodynamic, cognitive or psycho-educational individual or family approach psychotherapy is a process in which the aim is that patients may see themselves and their problems more realistically and have the desire to cope with them effectively. (Lönnqvist 2006, Saarinen 2010.)

Interpersonal counselling (IPC) is a brief and time-limited treatment designed for non-psychiatric patients who are in distress, have symptoms related to current stresses in their lives, but who do not have severe concurrent psychiatric disorders. The main principle of IPC is that depressive symptoms relate to interpersonal relations. By having an effect on interpersonal relations, it is possible to reduce depressive symptoms in an optimistic and supportive manner. IPC is derived as a briefer version from interpersonal therapy (IPT), which is an intervention for patients with depression or other psychiatric disorders. IPC is directed to lower level of severity of patients' symptoms than IPT. IPC links the depressive symptoms to the events of everyday life. The strategies occur flexibly in three phases, during a maximum of 6 sessions of treatment. The first phase (usually 1-2 sessions) includes diagnostic evaluation and psychiatric history and sets the framework for the counselling. The first session is longer (30 minutes), assessing symptoms and interpersonal relationships and context. In addition, the condition of the patient and the content of IPC are reviewed. During the middle phase (usually sessions

3 and 4) the therapist pursues strategies that are specific after MI to the chosen area: grief, interpersonal role disputes, role transition or interpersonal deficits. During the final phase of IPC (usually sessions 5 and 6), the patient are encourages to recognize and consolidate therapeutic gains and to develop ways of identifying and countering depressive symptoms that may arise in the future. In IPC, the focus is on a well-defined, optimistic and supportive approach to depressive symptoms and their impact on everyday life events. (Markowitz et al. 1998, Weissmann et al. 2000, Karlsson & Markowitz 2002, Weissman et al. 2007, Markowitz 2008.)

The use of IPT and IPC has been studied in practice: IPT has been beneficial with major depression (de Mello et al. 2005, Markowitz 2008), depression in coronary artery disease (Lett et al. 2005), depressive elderly patients (Miller et al. 1998, 2001, Scocco & Frank 2002, Schulberg et al. 2007). In group format IPT has been studied with encouraging results in major depression (Bolton et al. 2003), postnatal depression (Mulcahy et al. 2010) and in post-traumatic stress disorder (Campanini et al. 2010). IPT reduces depressive symptoms, but the benefits seem decrease over time, and the preventive value of IPT in depression is thus limited (Young et al. 2010). IPC has also been used effectively for subdysthymic depression in medically ill elderly people (Mossey et al. 1996) and for symptoms of stress and distress among patients in primary care (Klerman et al. 1987). IPC has also been studied with HIV-positive patients with depressive symptoms (Markowitz et al. 1998, Markowitz et al. 2000) and for depression after miscarriage (Neugebauer et al. 2006). The effects of IPC on HRQOL have been studied after breast cancer (Badger et al. 2004b, Bagder et al. 2005), but probably not after MI.

2.3 The outcomes of psychosocial interventions after myocardial infarction

Chapter 2.3 defines the outcomes of psychosocial interventions in previous studies on the outcome measures in this study. The main interest is on outcomes of nursing counselling after MI, which is defined firstly. However, according to the literature review psychosocial interventions after MI include counselling and other therapies that can be adopted by the nurses and other professionals. This fact resolved the structure of the presentation.

2.3.1 The outcomes of nursing counselling

Outcome is defined in The Oxford Dictionary of English (2005) as “the way a thing turns out” or as “a consequence” relating to this study context. As global indicators, four categories of health care outcomes have been described: clinical, financial, functional, and perceptual (Jones 1993, Nies et al. 1999). In nursing practice, outcomes are defined as the expected change in health status of the patient after the patient has received nursing care, the expected change in the patient´s environment, and the extent of the patient´s satisfaction with nursing care (Mason 1984, Nies et al. 1999). Nursing outcome indicators have also been defined from the perspective of direct and indirect care (Schoenfelder et al. 2000). In addition, nursing outcomes have been described as the end result of care or a measurable change in the health status or behaviour of patients (Harris 1991, Hegyvary 1991, Jennings et al. 1999, Urden 2001). Nurse-sensitive client outcomes have been defined as variable client or caregiver states, behaviours, or perceptions at a low level of abstraction that are responsive to nursing intervention (Maas et al. 1997). Consequently, a wide variety of nursing outcome definitions call for integrating clinical and administration nursing studies to find a more comprehensive and longitudinal approach aimed to produce the best health outcomes (Pierce 1997). The Nursing Outcomes Classification is a classification system which describes patient outcomes sensitive to nursing intervention. It is a system to evaluate the effects of nursing care as part of the nursing process. It contains 330 outcomes, each with a label, definition, and set of indicators and measures to determine achievement of the nursing outcome (Hajevski et al. 1998, Johnston & Maas 1998, Moorhead et al. 2007.)

Besides nursing journals, nursing counselling studies can be found in other scientific journals in which the role of the nurse is not always clear (Allen & Dennison 2010). The reviews in nursing journals in the 2000s have focused on recognizing of (Greco & Bayan 2000) and education on (Docherty 2001) the risk factors of CAD and MI. In addition, symptoms of CAD in women (Miller 2002) and women’s perceptions of CAD (Hart 2005) have been studied. Furthermore, cardiovascular risks among cancer patients (Zoltick et al. 2005), peripheral arterial disease as a risk factor for MI (Muir 2009) as well as a depression after MI (Thornton 2001) were among the review topics. Other counselling articles in nursing journals focused on the prehospital care pathways in MI (O’Donnel et al. 2006) and the effectiveness of national cardiac rehabilitation programmes (O’Driscoll et al. 2007).

In general, individualized nursing counselling interventions aimed at adult patients whose experience of care and health problem is individual (Suhonen et al. 2008b), as well as at CAD and MI patients seem to be useful in delivering positive patient outcomes (Buckley et al. 2007, May et al. 2009, Allen & Dennison 2010, Clark et al. 2010). Considering other nursing counselling studies, nurse-led interventions relating to somatic diseases have been carried out with a web-based coaching programme (Goessens et al. 2008) and telephone counselling (Hartford et al. 2002, Mittag et al. 2006) for vascular patients. Inpatient cardiac rehabilitation programmes led by a nurse have been reported for MI patients and their partners (Bagheri et al. 2007). Older adults seeking help for MI (Tullmann et al. 2007), knowledge of symptoms of MI on the part of adults at risk of MI (Ryan et al. 2004) and psychological risk factors and status after CAD and MI (Moore et al. 2007) also appears as topics in nursing articles. In addition, factors related to inner strength in women after MI (Mendes et al. 2010) and experiences of spouses with CAD (Lukkarinen & Kyngäs 2003) were also studied.

2.3.2 Psychosocial interventions and depressive symptoms and distress

Three recommendations of depression management after MI by the American Academy of Family Physicians (Bush et al. 2005, Green et al. 2009) include firstly screening of depression, secondly monitoring and management of depressive symptoms, and thirdly instructions on modern medication. Besides pharmacological treatments, many non-pharmacological interventions are successfully used interventions in depression after MI and coronary artery disease (Cowan et al. 2001, Bergman et al. 2003, de Leon et al. 2006, Rollman et al. 2009). Counselling focusing on psychological problems after MI can be provided by a range of professionals, but it is most effectively offered by specialist counsellors, with good skills in depression care (Gaston 2003, Mierzynska et al. 2010).

In general, short-term counselling interventions for depression have been studied in primary care (Bower et al. 2003, Loh et al. 2007), among chronically ill elderly persons (Jonkers et al. 2007), and in MI programmes (Thompson & Meddis 1990), mostly with positive outcomes (Linden et al. 1996, Cossette et al. 2001, Petrie et al. 2002, Gallagher et al. 2003, Jones et al. 2003). According to ENRICHD investigators (2003) treating depression after MI did not increase event-free survival, but it did improve depression and social isolation (Bergman et al. 2003). Similarly, it is well known that psycho-social adjustment to MI improves the results of cardiac programmes (Burgess et al. 1987). Cognitive behavioural therapy (Johnston et al. 1999, Freedland et al. 2009), supportive stress management (Freedland et al. 2009) and interpersonal therapy (Miller et al. 1998, Lespérance et al. 2007) are examples of more intensive treatments for depressive symptoms after MI as well as other somatic problems. Adding group therapy to individual interventions may also decrease depression after MI (Saab et al. 2009). Telephone counselling (Bambauer et al. 2005, McLaughlin et al. 2005, Rollman et al. 2009) has positive outcomes for self-rated health among cardiac patients with depressive symptoms. In addition, emotional support offered by the voluntary sector (Mead et al. 2010) decreases depressive symptoms in varied patient groups. Even telephone-based peer support seems to be feasible for depression in general (Travis et al. 2010).

The benefits of psychosocial interventions for depressive symptoms and depression after MI are reported to be clearly evident during the first two years, but to decrease over time (Linden et al. 1996, Ward et al. 2000, Berkman et al. 2003). In addition, in contrast to the encouraging results, interpersonal therapy added to antidepressive medication and patient education has not been reported to improve the results of depression care after MI (Lespérance et al. 2007).

2.3.3 Psychosocial interventions and health-related quality of life

Quality is defined in The Oxford Dictionary of English (2005) as “the standard of something as measured against other things of a similar kind, the degrees of excellence of something: an improvement in product quality; people today enjoy better quality of life”. In general, HRQOL is a complicated concept without a universally accepted definition (Ferrans 1990, Leino-Kilpi et al. 2005, Moons et al. 2005, 2006). Quality of life (QOL) as a wide-ranging concept has been defined as individuals’ perceptions of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns (The WHOQOL Group 1990, Montin et al. 2007). The subjective aspects of quality of life address for example life experiences, happiness, well-being, and satisfaction (Megens & van Meijel 2006, Murphy & Murphy 2006). In addition, QOL includes for example the aspects of individuals’ financial resources, environment, and education (Bowling 2005). Health status refers to physical, psychological and social well-being (O´Boyle et al. 1992). The more specific HRQOL describes the impact of illness on well-being (Danovitch & Endicott 2008). HRQOL can also be seen to include the dimensions of biological function, symptoms, functional status and general health perceptions influenced by individual and environmental characteristics (Ferrans 2005).

In general, HRQOL soon after MI is at a low level, although MI has been reported not to have a significant effect on HRQOL in a long-term follow-up (Simpson & Pilote 2003). The most frequent moderate or severe problems reported several years after MI have been related to pain and discomfort, anxiety and depression, and mobility (Schweikert et al. 2009). Depression is a risk for poor HRQOL after MI (de Jonge et al. 2006, Lee 2009, Page et al. 2010). Some patient characteristics seem to relate to the level of HRQOL after MI. Old age (Ahto 1999, Beck et al. 2001, Pettersen et al. 2008, Schweikert et al. 2009), other chronic diseases (Pettersen et al. 2008, Schweikert et al. 2009), smoking (Altenhoer et al. 2005, Pettersen et al. 2008, Schweikert et al. 2009), previous MI in women and medication in men (Pettersen et al. 2008) and low education (Ladin 2008, Pettersen et al. 2008) have been found to be most important predictors of poor quality of life after MI. In addition, patients’ negative beliefs of illness are associated with lower HRQOL (Alsen et al. 2010).

Patient characteristics also seem to affect the need for psychosocial support after MI. An increased need for psychosocial support after MI seems to be especially prevalent among women (Agewall et al. 2004), depressive female patients (Norris et al. 2007) and both male and female subjects in the youngest age group. (Bengtson et al. 2004.) Detection and treatment of depression following MI may improve the patient’s HRQOL (Dickens et al. 2006, O´Neill et al. 2010a, 2010b). Programmes including provider-patient communication and counselling (Gallant et al. 2002) seem to work in CAD patients from the point of view of better information and knowledge (Buckley et al. 2007, Eshah et al. 2010), mortality (Eshah et al. 2010), functional capacity (Clark et al. 2005, Choo et al. 2007) and HRQOL (Lavie & Milani 1999, Clark et al. 2005, Buckley et al. 2007, Choo et al. 2007, Eshah et al. 2010). In addition, HRQOL is improved by a wide variety of secondary prevention programmes including counselling aimed at survivors of MI (Clark et al. 2005, 2010). Group counselling programmes have also been shown to improve HRQOL after MI (Bagheri et al. 2007). The duration (Hevey et al. 2003, Reid et al. 2005) or cost (Reid et al. 2005) of rehabilitation programmes after MI has not been reported to correlate with the outcomes of HRQOL. On the other hand, telephone counselling seems to have positive short-term effects on HRQOL, but not in the long term (Hanssen et al. 2009). In conclusion, the optimal combination of nursing interventions components in CAD care remains unknown, including strategy, mode of delivery, frequency, and duration (Allen & Dennison 2010).

2.3.4 Psychosocial interventions and the use of health care services

The association of interpersonal counselling and the use of health care services among MI-patients has probably not been studied, but cardiac rehabilitation has proved to be cost-effective from a community perspective and highly cost-effective from the perspective of patients (Oldrigde et al. 1993, 2008). To some extent, interventions after MI have been reported to be cost-saving (Clark et al. 2010), though fewer of these studies presented data to support this conclusion (Marchionni et al. 2003, Robertson et al. 2003, Southard et al. 2003).

In general, patients with depression or anxiety commonly use cardiovascular and non-cardiac health care services after MI more compared to non-depressive patients (Strik et al. 2003, Denollet et al. 2003, Kurdyak et al. 2008, Blanchette et al. 2009, Smolderen et al. 2009). On the other hand, depressive patients after MI do not reach psychiatric heath care services or medication adequately among other things to problems with diagnosis and treatment of depression after myocardial infarction (Frasure-Smith et al. 2000, Luutonen et al. 2002). A higher risk for rehospitalization has been reported in female patients with more prevalent depressive symptoms (Garvin et al. 2005, Parashar et al. 2009). Considering patients' characteristics, unpartnered older adults are a group at risk of hospital readmissions (Carroll et al. 2007). Men require more caretaking than women after MI (Hutton & Perkins 2008). On the other hand, women have reported delaying seeking help after MI for a number of reasons including not recognizing symptoms, perceiving MI as male problem and preferring to self-medicate (McInness 2006, Higginson 2008). Failure to seek help from the health care sector seems to associate with isolation, lack of mental health services and poverty (Cuellar et al. 2003). A small social network after MI is also a risk for mortality (Brummett et al. 2001). However, treating depression after MI has been reported to improve depression and to decrease social isolation (Berkman et al. 2003).

Despite positive effects of counselling interventions on health outcomes in general after MI (Cossette et al. 2001, Clark et al. 2005, Buckley et al. 2007), there is little evidence of direct effects of the use of different health care services after myocardial infarction. Administrative improvements and development of the health care system for post-MI treatment have been found to have some benefits (Dalal & Evans 2003, Young et al. 2003, Carroll et al. 2007). In the psychiatric field, integrated psychological therapy as part of medical therapy has been reported to reduce the use of health care and costs (Vasiliadis et al. 2006).

Consultative nursing interventions between psychiatric and somatic care have been seen as a possibility to change and modify care and to reduce costs by recognizing depression (Badger et al. 2004a, McGee et al. 2006). In addition, there are increased health care costs linked to both readmissions and outpatient contacts among depressed patients who survive the first post-MI year (Frasure-Smith et al. 2000, Parashar et al. 2006).

2.3.5 Patients' satisfaction with care and information

Satisfaction is defined in The Oxford Dictionary of English (2005) as "fulfilment of one's wishes, expectations, or the pleasure derived from this". In the nursing framework the concept of satisfaction continues to evolve (Wagner & Bear 2009). It includes patients' perspective, with such components as affective support, health information, decisional control and professional/technical competencies (Wagner 2009). Patient's satisfaction with care and satisfaction with information are linked together (Thompson et al. 1990, Leino-Kilpi et al. 1993, Lichtman et al. 2007, Davidson et al. 2010). In nursing practice, patients (Suhonen et al. 2005, Suhonen & Leino-Kilpi 2006) or their spouses (McLean & Timmins 2007) are not always given the information they expect. Information needs among outpatients with psychiatric problems consist of care and treatment, service modality and organization and clinical difficulties, all of which should be considered in care (Perreault et al. 2006).

Among MI patients, the level of satisfaction with care may be an indicator of the level of care, as high satisfaction associates with lower mortality and improved guideline adherence (Glickman et al. 2010). In general, MI patients want more information than what is offered at discharge and after returning home (Oterhals et al. 2006), and in secondary prevention CAD patients have reported to value reassurance and monitoring (Wright et al. 2001). Even a short individual teaching and counselling intervention seems to improve patients' knowledge of coronary artery disease and MI (Buckley et al. 2007). Satisfaction with care after MI may be indicated by psychosocial factors assessed in care - such as social support, depression and dispositional optimism (Barry et al. 2007). Actually, enhanced depression care for patients with acute coronary syndrome improves satisfaction and depressive symptoms (Davidson et al. 2010). More than a third of MI patients – mostly females – are reported to be dissatisfied with their involvement in care and discharge planning during hospitalization (Arnetz & Arnetz 2009). Patients who are older, without depression, and who have good functional capacity have been reported to be most satisfied with MI care (Lee et al. 2008).

2.4 Recovery experienced by patients after myocardial infarction

Recovery is defined in The Oxford Dictionary of English (2005) as "a return to normal state of health, mind or strength". In general medicine and psychiatry, recovery has long been used to refer to the end of a particular experience or episode of illness, but its meaning and content are varied and depend on the setting (Ramon et al. 2007). Stress, depression and emotional turmoil are associated with MI, deteriorating individuals' recovery broadly (Ladwig et al. 1994, Dixon et al. 2000, Al-Hassan & Sagr 2002, Thombs et al. 2006, Ayers et al. 2009). In addition, emotional distress affects both MI survivors and their spouses and intimates (Stewart et al. 2000, Webster et al. 2003). However, there is a gap between traditional MI rehabilitation programs and needs from the patient's point of view (Páquet et al. 2005). More emphasis should be put on secondary care after MI, as complex barriers have been reported in relation to service-related training and weak communication between primary and secondary care (Bergman & Berterö 2001, O'Driscoll et al. 2007). The process of recovery after MI seems to be critical and vulnerable during the first weeks after MI, when psychological care, information, follow-up and support are especially needed and should be offered (Riegel 1993, Lau-Walker 2004, Hanssen et al. 2005). Care after MI should provide opportunities for patients to talk about their experiences individually (Hogg et al. 2007).

Counselling interventions immediately after MI to prevent cardiac invalidism have been recognized as important, because the length of hospital stay has become shorter (Riegel & Dracup 1992, Robinson 1999, Fang et al. 2010, Häkkinen et al. 2010). There are some studies based on patients' experiences, considering preventive interventions (Wright et al. 2001) and counselling and rehabilitation after MI (Clark et al. 2004) as well as patients' perceptions of post-myocardial infarction teaching (Tamada & Holmes 1998). The beliefs related to self, illness, cardiac rehabilitation, other attending patients and health care professionals' knowledge base influence cardiac rehabilitation attendance decisions (Clark et al. 2004). Negative beliefs of heart disease soon after MI increase the risk of depression (Dickens et al. 2008). Interpersonal counselling as depression focused intervention, which relates depressive symptoms to interpersonal relations, is a natural way to increase patients' self-understanding (Markowitz et al. 1998, Weismann et al. 2000).

In the literature, supporting and inhibiting factors in recovery after MI have been recognized. Supporting factors in recovery after MI and in coronary artery disease have been reported by patients to consist of both personal factors of individual patients and of external support (Daly et al. 2000, Stewart et al. 2000, Whittemore et al. 2000, Bergman & Berterö 2001, Kerr & Fothergill-Bourbonais 2002, White et al. 2007, Hutton & Perkins 2008, Mendes et al. 2010). More than good physical health, different kinds of psychological factors have been reported to be supportive after MI. These factors relate to positive and optimistic attitudes or frame of mind (Daly et al. 2000, Hutton & Perkins 2008), while resources that help patients to accept the disease themselves also seem to support recovery after MI (Kerr & Fothergill-Bourbonais 2002). In addition, varied personal coping strategies have been reported (Daly et al. 2000, Kerr & Fothergill-Bourbonais 2002, White et al. 2007, Hutton & Perkins 2008, Mendes et al. 2010). Supporting external factors include helpful interpersonal relations and more concrete practical help from intimates, other familiars and professionals (Stewart et al. 2000, Whittemore et al. 2000, Bergman & Berterö 2001, Jensen & Petersson 2003).

Inhibiting factors in recovery after MI are related to the same factors as supporting factors, but more has been reported concerning physical health and conditions (Ladwig et al. 1994, Daly et al. 2000, Al-Hassan & Sagr 2002, Webster et al. 2003), especially among older patients (Dixon et al. 2000). Various emotional experiences consisting for example of fear of dying, emotional distress, family turmoil and existential threat, confusion and sadness may constitute an inhibiting psychological perspective in recovery (Robinson 1999, Dixon et al. 2000, Stewart et al. 2000, Al-Hassan & Sagr 2002, Webster et al. 2003). Difficulties and sorrows related to social relationships (Dixon et al. 2000, Stewart et al. 2000, Al-Hassan & Sagr 2002, Kerr & Bourbonais 2002, Webster et al. 2003) and to work (Robinson 1999) have also been reported as inhibiting factors in recovery. In addition, difficulties and criticism against treatment and the care system have been presented in recovery after MI (Robinson 1999, Stewart et al. 2000, Hutton & Perkins 2008).

2.5 Summary

In nursing practice, more attention needs to be paid to depression in association with CAD and MI. Efficient care of depression after MI might have both clinical and health political consequences. Moreover, nursing counselling research is needed in this area of study. The results of previous studies on depression after MI are encouraging. IPC is a brief and easy-to-learn depression-focused intervention for non-psychiatric patients is stress events in their lives, such as MI.

Depressive symptoms are at least a short-term risk for poor HRQOL, just as the level of symptoms is part of HRQOL after MI. Nursing interventions seem to have benefits after MI, but the effects of depression-focused care on HRQOL have been less studied.

Depression after MI leads to increased use of health care services; on the other hand, depressive patients are not always adequately reached by psychiatric help after MI. Recognition and treatment of depression is known to be cost-effective for patients and the health care system. However, there is quite poor evidence of the efficacy of nursing interventions on the use of health care services after MI.

Satisfaction with care and information seems to be a good indicator of the level of care. The literature review indicates that the patients after MI want more information than is offered by the professionals.

From the patients' perspective, recovery seem to consist of a much larger amount of supporting and inhibiting factors, than included in the quantitative instruments used in research to measure recovery after MI. More in-depth knowledge is needed of recovery as experienced by the patient.

3 PURPOSE OF THE STUDY AND RESEARCH QUESTIONS

The purpose of this 18-month follow-up study was to evaluate the outcomes of interpersonal counselling implemented by a psychiatric nurse after myocardial infarction, and to examine the recovery experienced by the patients after myocardial infarction. The outcomes of IPC after MI included depressive symptoms, distress, HRQOL the use of health care services and satisfaction with IPC and the information received from professionals. Moreover, the purpose of the study was to describe and analyze the supporting and inhibiting factors in recovery experienced by the patients after MI. The aim of this study was to produce more knowledge from the perspective of psychiatric care to develop nursing practice after MI and to shed light on topics worth further study (Figure 3).

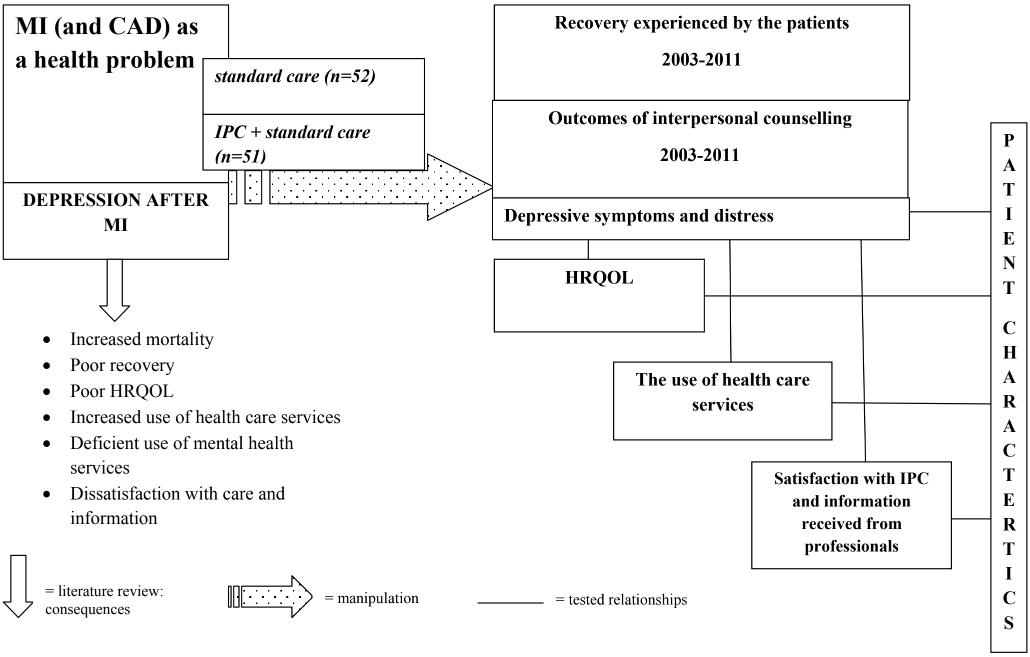


Figure 3. Study design.

OUTCOMES OF INTERPERSONAL COUNSELLING

The following main research questions were addressed, and to focus the purpose of the study, the following sub-research questions were also addressed:

1. What are the outcomes of interpersonal counselling

a) on depressive symptoms and distress (Paper I)?

- Are there any differences in the changes in depressive symptoms and distress between the intervention group and the control group during 18 months of follow-up?
- Are there any changes in depressive symptoms and distress within the intervention group and the control group during 18 months of follow-up?
- How do the patients' background variables affect the effectiveness of IPC during 18 months of follow-up?

b) on health-related quality of life (Paper II)?

- What is HRQOL after MI in the intervention group and in the control group with standard care at baseline in hospital, at 6 months and at 18 months after hospital discharge?
- Are there differences between the groups in HRQOL during the 6-month and the 18-month follow-up?
- What patient characteristics are associated with HRQOL during the 6-month and the 18-month follow-up in the intervention group and in the control group?

c) on the use of health care services after MI (Paper III)?

- Are there any differences in the use of health care services between the groups during 18 months of follow-up?
- How do patient characteristics associate with the use of health care services?
- Do patient characteristics and IPC have an association with the use health care services?

d) on the satisfaction of patients with interpersonal counselling and information after MI (in Summary)?

- How satisfied are patients with interpersonal counselling after myocardial infarction?
- How satisfied are patients with the information received from professionals after myocardial infarction in the intervention and the control group?

RECOVERY EXPERIENCED BY THE PATIENTS

2. What are the supporting and inhibiting factors in recovery experienced by the patients after MI (Paper IV)?

- What are the supporting and the inhibiting factors in recovery after MI?
- How are the supporting and the inhibiting factors emphasized in the intervention group and the control group?

The following hypotheses were tested:

- Interpersonal counselling is effective on depressive symptoms and distress after myocardial infarction.
- By reducing depressive symptoms and distress, interpersonal counselling has indirect effects on health-related quality of life and on the use of health care services after myocardial infarction.
- The recovery experienced by the patient after myocardial infarction is a multidimensional concept and phenomenon.

4 METHODOLOGY

Triangulation is the combination of at least two or more theoretical prospects, methodological approaches, data analyses or researchers. The intent of triangulation is to decrease or counterbalance the deficiency of a single strategy, while at the same time increasing the ability to interpret and realize the findings. (Thurmond 2001.) Triangulation was used in this study in study design, sampling, instruments and data analysis. The research question in the explorative phase of the study could be answered by the quantitative instrument, but in order to gain a deeper understanding of the recovery experienced by the patients and IPC and information received by the professionals, diaries and interviews were used.

In this study, the content of the intervention (Figure 4) was modified for MI patients to take from 1 to 6 sessions (mean 4.6, SD 1.24, mode 5), consisting of starting (sessions 1-2), encouragement (3-4) and ending phase (5-6). The first session (30 minutes), assessing symptoms and interpersonal context, was longer than the others (20 minutes). At least the first session was arranged in hospital despite the short duration (3-4 days on average) of hospital treatment in Finland. The closing of the sessions was executed by telephone. An intervention form (Appendix 1) filled by the intervention nurse was used in this study to follow up the implementation of IPC in practice. The intervention form included structured details of IPC for follow-up as well as notes on other considerations besides IPC.

THE PHASE OF IPC	THE CONTENT OF INFORMATION	THE FOCUS OF THE THERAPEUTIC CO-OPERATION AREA	THE ROLE OF THE NURSE	ESSENTIAL IN RECOVERY FOR PATIENT
THE FIRST PHASE: **Starting phase** **Sessions 1-2**	introduction -information about the study and intervention -background history	-evaluation of the situation -interpersonal inventory -framework for treatment -linking the depressive symptoms to the patient's interpersonal situation -choosing the problem area: • grief • interpersonal role disputes • role transition or • interpersonal deficits	-the active role of the nurse	-other considerations
THE MIDDLE PHASE: **Encouragement phase** **Sessions 3-4**	-information obtained from the patient	-working in the problem area -encouragement -processing life changes -finding resources and coping strategies	-collaboration between patient and nurse	-other considerations
THE FINAL PHASE: **Ending phase** **Sessions 5-6**	-information concerning possibilities to get psychiatric help	-encouraging and consolidating the gains -the grief relating to the end of the intervention -encouragement to seek help if needed -developing ways of identifying depressive symptoms in the future	-nurse becomes needless	-other considerations

Figure 4. Interpersonal counselling (IPC) modified for the study

IPC was administered by one and the same psychiatric nurse trained for one day in the use of IPC. The intervention nurse had no psychotherapy training. The role of the intervention nurse was to be active at the beginning, decrease in activity over the course of the sessions and finally to become needless. In the first phase the intervention nurse introduced IPC and the study to the patient. The patients were asked about recent changes in their life circumstances, social functioning and mood, exploring how these circumstances related to the onset of symptoms. During the middle phase the therapist pursued strategies specific to the chosen area: grief, interpersonal role disputes, role transition or interpersonal deficits. In 90.2% of the cases, the focus was on role transition, including changes in life status after MI. The strategy was then to relate symptoms to difficulties in coping and recovery with recent life changes. The main goals in role transition were for example accepting a new role, seeing it in a more positive light as an opportunity to grow, or perceiving the new role as being less restrictive. In the final phase of IPC the patients were counselled in ways of recognizing psychiatric symptoms in the future and on how to go about finding psychiatric help if needed.

4.1 Sampling and settings

In this study, the participants were both ST-elevation and non-ST-elevation patients with acute MI diagnosis. From September 2004 to January 2007, all patients < 75 age with sufficient knowledge of Finnish were asked to take part in the study. The patients were recruited in one Finnish university hospital. In 2004-2007, the stay in hospital after MI took on average 3 to 4 days. The diagnostic criteria of acute MI required that the patients had to meet the Troponin T level ≥ 0.03 µg/l, and at least one of the three criteria for an acute MI: 1) typical clinical presentation, 2) presence of new ischemic ECG changes or 3) new diagnostic findings on imaging e.g. echocardiogram.

Based on the Beck Depression Inventory (BDI) scores indicating presence or absence of depressive symptoms (Beck et al. 1961, 2001), patients after MI were stratified, sampled and randomized into control group (n=52) and intervention group (n=51). Patients in the intervention group received standard care and IPC, while patients in the control group received standard care after MI. Standard care included spoken and written instructions for control visits and prescriptions after MI. The instructions also included guidance on how to find non-psychiatric and psychiatric health care services when needed; however getting in touch with health care services was in practice the patients' own responsibility.

4.2 Instruments

Patient characteristics (Appendix 2) requested at baseline consisted of sociodemographic factors (Table 2 in 5.1) and clinical factors (Table 3 in 5.1).

Depressive symptoms and distress were measured using the 21-item BDI (Beck et al. 1961, 2001) and 25-item Symptom Checklist-25 (SCL-25) (Derogratis et al. 1976, Joukamaa et al. 1994*)*, which were filled in by the patients themselves during follow-up (Table 1).

BDI has been extensively validated against DSM-III classification and other depression questionnaires (Beck et al. 1988), and seems (version II) to be an effective tool for screening depressive symptoms after MI. Every statement on the BDI gives a score of 0-3 (max. 63), scores of 10-18 indicating mild, 19-29 moderate to severe and scores ≥ 30 severe depression. In this study the cut-off point for the presence of depressive symptoms was 10. Every statement on the SCL-25 gives a score of 1-4; the sum of scores is divided by the number of answers. Scores ≥ 1.54 indicate distress, which includes items of anxiety, cognitive-affective, and somatic depressive symptoms.

Table 1. Instruments in this study

IN HOSPITAL	**IPC-INTERVENTION GROUP** (n=51)	**CONTROL GROUP** (n=52)
Informed consent form	**X**	**X**
Patient characteristics form	**X**	**X**
BDI	**X**	**X**
SCL-25	**X**	**X**
EQ-5D	**X**	**X**
IPC form (filled in by intervention nurse)	**X**	
6 MONTHS AFTER DISCHARGE		
BDI	**X**	**X**
SCL-25	**X**	**X**
EQ-5D	**X**	**X**
Recovery experienced by the patients (diaries kept after discharge)	**X**	**X**
UHCS-q	**X**	**X**
Satisfaction with IPC intervention form (interview by telephone)	**X**	
18 MONTHS AFTER DISCHARGE		
BDI	**X**	**X**
SCL-25	**X**	**X**
EQ-5D	**X**	**X**
UHCS-q	**X**	**X**
PDQ-4+	**X**	**X**
Recovery experienced by the patients (interview by telephone)	**X**	**X**

HRQOL was measured with EuroQol 5-Dimensions (EQ-5D). The first part of the questionnaire, the EQ-5D descriptive system, consists of five dimensions comprising three levels: no, moderate and extreme problems. The EQ-5D system generates a total of 243 theoretically possible health states. EQ-5D health states were combined into EQ-5D index using valuation formulas that are based on the health state evaluation exercises of a representative Finnish population sample based on general population preferences. The second part of EQ-5D is a visual analogue scale, EQ VAS, with endpoints labelled "best imaginable health state" anchored at 100 and "worst imaginable health state" at zero. (EuroQol Group 1990, 2010, Brooks et al. 2003.) EQ-5D has been tested with MI patients (Schweikert et al. 2006, Nowels et al. 2005). EQ-5D has also been evaluated for reliability and validity in two studies using Finnish populations and large samples (Ohinmaa et al. 1996, Ohinmaa & Sintonen 1999).

The use of health care service was evaluated with a questionnaire designed in three phases. In the first phase, the Use of Health Care questionnaire (UHCS-q) was developed on the basis of a literature review and the experiences of the staff in the ward where the data were collected. In the second phase, it was verified by a researcher group and by PhD students in nursing science with several controls. Thirdly, the instrument was verified again by the staff in nursing practice after MI. The UHCS-q includes items of health care services from specialized health care (4 items), primary health care (3), and mental health care services separately from specialized health care and primary health care (4) and the cardiac rehabilitation programme of a registered association derived from specialized health care (1).

Satisfaction with IPC was measured using a 9-item semi-structured form (Appendix 3). Patients could report their satisfaction with all items with school grades from 4 to 10, and their spoken assessments of IPC were asked by telephone and written down by the researcher.

Satisfaction with information was measured using a semi-structured form. Patients could report their satisfaction with information received from the professionals with school grades from 4 to 10, and their spoken assessments of information received from the professionals were asked by telephone and written down by the researcher.

Furthermore, as a background variable besides patient characteristics, and in order to ensure the homogeneity of the groups and to describe the data, the Personality Disorder-4+ questionnaire (PDQ-4+) was used at 18 months after hospital discharge (Bagby & Farvolden 2004). The PDQ-4+ is a self-reported questionnaire of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) designed to assess 12 personality disorders. It has been reported to be efficient for screening patients with personality disorder. In addition, if there were statistically very significant differences between groups, this might affect the result of reported depressive symptoms, as personality disorders seem to affect the scores of BDI. (Hyler et al. 1990.) At the same, there seems to exist over-reporting of self-reported personality disorders (Whyte et al. 2006).

Recovery experienced by the patients was examined using a diary and an interview. All patients (n=103) were given a diary in hospital. The diaries were returned by 40 patients 6 months after discharge. All patients (n=91) were asked to be interviewed 18 months after discharge from hospital. In the diaries and the interviews the patients first had a possibility to describe their recovery after MI in general. After that the same open-ended questions were asked:

1. What factors have been supporting your recovery after MI?
2. What factors have been inhibiting your recovery after MI?

In the diaries, there were instructions to make notes once a month during the six-month follow-up. The interviews were performed once in the final phase of the study at 18 months after hospital discharge.

4.3 Data collection

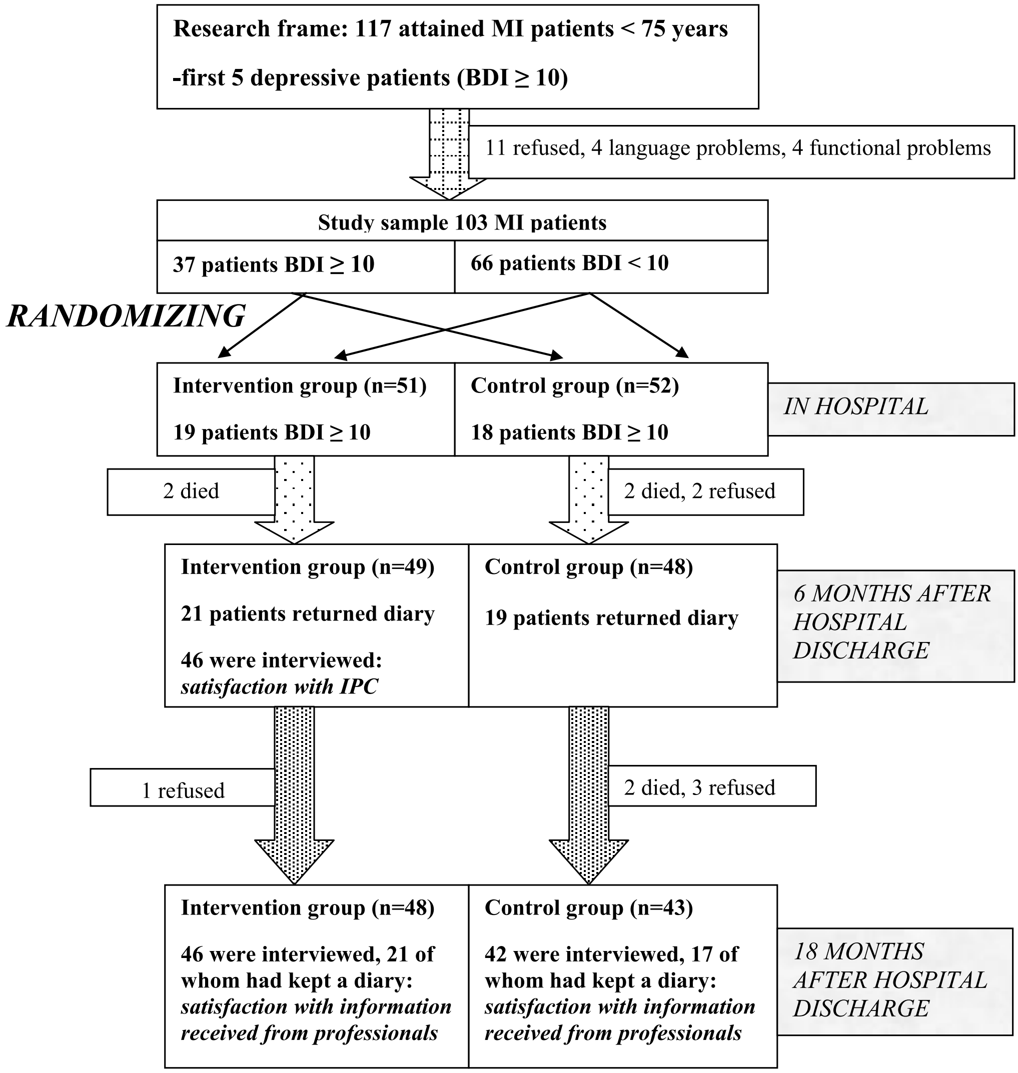


Figure 5. Data collection and drop-outs during the 18- month follow-up

Data were collected from September 2004 to August 2008 (Figure 5). Previously enrolled patients returning with another MI were not included in the study again. The data from this study were collected within an intent-to-treat framework. If a patient assigned to the IPC group was non-compliant with the study protocol and behaved as if assigned to the control group, no attempt was made to reclassify him/her. The primary goal in this study was to collect only depressive (BDI ≥ 10) patients. Due to difficulties in recruiting patients, the protocol was changed and all eligible MI patients were accepted at baseline with or without depressive symptoms. However, the first 5 patients who were depressive were included in the data set.

4.4 Data analysis

Statistical methods were used in analyzing structured quantitative data and content analysis in examining open-ended questions in the qualitative data. Statistical analyses were performed using SAS System for Windows, version 9.1.3 (SAS Institute Inc., Cary, NC). P-values less than 0.05 were considered statistically significant. Inductive content analysis was used with diary data and deductive content analysis with interviews concerning supporting and inhibiting factors in recovery experienced by the patients. In addition, an attribution analysis was used with both data sets. Additional comments related to satisfaction with IPC and with information received from professionals were analyzed with content analysis.

The differences in patient characteristic variables between the intervention and control groups were tested with chi-square test or Fisher's exact test (Paper I, II and III). In the attribution analysis differences between the groups were tested with chi-square test. Normality of continuous dependent variables was checked by graphical methods. Inductive (Graneheim & Lundman 2004, Burns & Grove 2005, Neuendorf 2005) and deductive content analysis (Krippendorf 2004, Burns & Grove 2005, Neuendorf 2005) was used in data analysis of diaries and interviews. In diaries and interviews, supporting and inhibiting factors in main categories were analyzed by attribution analysis, which provides the frequency with which certain characterizations are referred to (Krippendorf 2004).

Results of logistic regression (Paper I, II and III) were presented using odds ratios (OR) with their 95% confidence intervals (CI). The internal consistency reliability of BDI, SCL-25 and EQ VAS in EQ-5D was measured with Cronbach's alpha (Paper I and II).

BDI and SCL-25 (Paper I)

The differences with BDI in the change during the follow-up of cognitive-affective group items and somatic group items between the groups were tested with Mann-Whitney U-test. The differences in the changes between the groups and the changes in the intervention and control groups in the depressive symptoms and distress during the 18 month follow-up were analyzed using logistic regression. The generalized estimating equations (GEE) method was used to account for correlation between repeated measurements using unstructured working correlation structure (Agresti 2002). The association of patient characteristics variables with depressive symptoms and distress at 6 and 18 months was analyzed using logistic regression. The effects of patient characteristics on the effectiveness of IPC during the follow-up were analyzed with logistic regression using generalized estimating equations.

EQ-5D (Paper II)

The baseline differences between groups in EQ VAS were tested with two-sample t-test and in EQ-5D index with Mann-Whitney U-test. Repeated measures analysis of variance with heterogeneous compound symmetry covariance structure was used to test the differences in the changes between the groups, the effect of patient characteristics variables on the effects of IPC and the changes in the intervention and control groups in EQ VAS. The differences in the change of EQ-5D index between groups were tested using two-sample t-test and the changes within groups using paired t-test. The effects of patient characteristic variables on the effects of IPC were analyzed using two-way analysis of variance. The differences in the changes between the groups and the changes in the intervention and control groups in the EQ-5D descriptive system during the 18-month follow-up were analyzed using binary logistic regression. The generalized estimating equations (GEE) method was used to account for correlation between repeated measurements (Agresti 2002). The effects of patient characteristic variables on the effects of IPC in the EQ-5D descriptive system at 6 and 18 months were analyzed using logistic regression.

UHCS-q (Paper III)

The association of background variables with health care service during 6 month and from 6 to 18 months was analyzed using Chi-square test or Fisher´s exact test. The effects of patient characteristic variables on the effectiveness of IPC during the follow-up were analyzed with logistic regression.

Diary and interviews (Paper IV)

Firstly, 6 months after hospital discharge, the content of diaries after 6 months was analyzed by using inductive content analysis including open coding, creating categories and abstraction (Polit & Hungler 1999, Burns & Grove 2005, Neuendorf 2005, Polit & Beck 2010). The diary notes written by the patients, consisting of 71 pages (A4) of computer-written text (1.5 spacing), were first written by the researcher into text format at the same time as reading them. The written material was read through repeatedly to examine similarities and differences between expressions used in the text. Meaning units – constellation of words and statements that related to the same central meaning

(Graneheim & Lundman 2004, Burns & Grove 2005, Neuendorf 2005, Elo & Kyngäs 2008) consisted of manifestation of the data (answers to the questions). The context of the text resolved the meaning unit. One patient could report many different factors under one category as supporting or inhibiting, but the same factor was reported only once for each patient. Five main categories of recovery experienced by the patients were derived from the meaning units. Supporting and inhibiting factors were separated in each main category. In addition, sub-categories were formed by creating tentatively supporting and inhibiting factor gestalts of the central meaning units.

Secondly, 18 months after hospital discharge, a deductive frame of analysis was used to create a structure of the interviews. The data consisted of the interviews (n=86) in the intervention group (n=44) and in the control group (n=42) 18 months after hospital discharge. The telephone interviews were executed by the researcher. The data were written down. Also in the second phase, one patient could report many different factors in one category as supporting or inhibiting, but one factor could only be reported once. The data were coded to the main categories as supporting or inhibiting factors and further subcategories.

4.5 Ethical considerations

Ethical issues apply in all stages of a clinical trial, in which a careful planning is an essential covenant to accomplish a high level (Everitt & Wessely 2008). According to Emanuel et al. (2000) ethical conduct of clinical research consist of criteria such as value, scientific validity, fair selection of participants, a favourable benefit/risk balance, independent review, informed consent and respect for participants. Ethical considerations and the general principles of research ethics were complied with at every phase of the study (ETENE 2002, World Medical Association Declarations of Helsinki 2002, ICN 2003, Burns & Grove 2005, ETENE 2009). All the necessary permissions to conduct the study were applied and granted. The research protocol was approved by the Research Ethics Committee of the University Hospital in Finland. Ethical considerations of the study were taken into account by making sure that patients could not be identified in any phase of the study and that participation in the study was voluntary (Redsell & Cheater 2001, Artinian et al. 2004, Burns & Crove 2005). BDI and SCL-25 are questionnaires used generally and worldwide in psychiatric care and treatment. Therefore, there was no need to obtain separate permissions for their use. Registration for the EQ-5D user was done. The EuroQol Group was contacted by e-mail to have Finnish EQ-index values. The UHCS-q was developed in co-operation with a university hospital MI ward for this study.

At the beginning of the study in hospital, all participants were informed and they gave written informed consent (Appendix 4-5). Information was given about the study and the intervention. Ethical considerations, such as the possibility to refuse or withdraw from the study at any phase of the study, anonymity and confidentiality were explained orally before obtaining written informed consent. The patients gave their contact information, which was used only by the intervention nurse with IPC patients and by the researcher.

At the second contact at 6 months and the third contact of the study at 18 months all patients were contacted by post with questionnaires and cover letters (Appendixes 6-7), which included again the ethical considerations in a written form, and contact numbers of the researcher for possible contacts and questions during and after the study. In addition, about a week after sending the letters, all the patients were contacted by telephone at 6 and at 18 months after hospital discharge by the researcher. Informed consent was ensured at both contacts in cover letters and again by telephone, if necessary. Except for the interviews of satisfaction with IPC or information received from professionals, all participants had the possibility to ask questions and discuss the study in general, the questionnaires or ethical questions.

If at any phase of the study patients reported to have or was diagnosed with severe depression or other mental problems calling for more sensitive treatment, the intervention nurse or researcher would guide them to psychiatric services and discontinue their participation in the study. While in hospital, one possible participant was guided to mental health services. During the follow-up, one patient at 6 months and one patient at 18 months in the control group had BDI scores (≥30) indicating severe depressive symptoms (none at baseline). Both of them reported receiving psychiatric treatment. Even though the aim was to for the study to be as close to a randomized controlled trial, there was no placebo group and all patients received the same standard care in hospital. After the study, one patient contacted the researcher and was guided to seek help. Patients in the control group received standard care and patients in the intervention group received standard care and IPC. Therefore there were no ethical problems with respect to non-treatment.

5 RESULTS

The results of this study are reported in three parts. Firstly, patient characteristics describe participants at baseline in hospital, separately in the intervention group and in the control group. In addition, patient characteristics at baseline are reported of those who kept diaries during 6 months and were interviewed at 18 months after hospital discharge. After patient characteristics, the results are presented according to the research questions. The second chapter compares the depressive symptoms, distress, HRQOL and the use of health care services during the follow-up between the intervention and the control group. In addition, the level of satisfaction with intervention and information received from professionals is described. The second chapter presents the recovery experienced by the patients. The main results are stated. More comprehensive and precise results are described in original papers I-IV.

5.1 Patient characteristics

At baseline, there were no statistical differences between the groups in terms of patient characteristics, which consisted of sociodemographic and clinical factors (Table 2 and Table 3). Neither were no differences found between the groups in the personal aspects using PDQ-4+. However, 63.7% of the patients with no differences between the groups reported items indicating “too good”, which means that they underestimated and flattered their personal aspects. This is why these results are presented very briefly in the dissertation.

5.2 The outcomes of interpersonal counselling after myocardial infarction

Section 5.2 presents the outcomes of IPC first on depressive symptoms and distress, secondly the effects on HRQOL, thirdly the association with the use of the health care services and fourthly patients’ the satisfaction with IPC and the information received from professionals. Finally as their own entity in section 5.3, supporting and inhibiting factors experienced by the patients in recovery after myocardial infarction, are offered.

5.2.1 Depressive symptoms and distress (Paper I)

Measurements in hospital, at 6 and at 18 months after hospital discharge indicated a decrease in the number of MI patients with depressive symptoms in the intervention group, while the depressive symptoms were at a high level in the control group during the follow-up (Paper 1, Figure 2). The severity of depressive symptoms was divided to mild (BDI 10-18 scores), to moderate (19-29) and to severe (BDI≥30) depressive

Table 2. Sociodemographic factors in this study

Variable	**Patients (n=103) after MI f (%)**	**Intervention group (n=51) f (%)**	**Control group (n=52) f (%)**	**p-value* between the groups f (%)**	**Diary contributors (n=40) f (%)**	**Interviewees (n=86) f (%)**
Gender						
Male	**73 (70.9)**	**38 (74.5)**	**35 (67.3)**		**22 (55.0)**	**61 (70.9)**
Female	**30 (29.1)**	**13 (25.5)**	**17 (32.7)**		**18 (45.0)**	**25 (29.1)**
				0,42		
Age: mean, mode, SD	**59.6, 60, 10.1**				**62.5, 62, 8.1**	**59.6, 60, 10.1**
Age under 60 years	**45 (43.7)**	**27 (52.9)**	**18 (34.6)**		**13 (32.5)**	**37 (43.0)**
Age 60-74 years	**58 (56.3)**	**24 (47.1)**	**34 (65.4)**		**27 (67.5)**	**49 (57.0)**
				0,06		
Marital status						
Married	**62 (60.2)**	**31 (60.8)**	**31 (59.6)**		**28 (70.0)**	**50 (58.1)**
Other marital status	**41 (39.8)**	**20 (39.2)**	**21 (40.4)**		**12 (30.0)**	**36 (41.9)**
				0,90		
Way of living						
Living alone	**30 (29.1)**	**11 (21.6)**	**19 (36.5)**		**9 (22.5)**	**26 (30.2)**
Living with someone	**73 (70.9)**	**40 (78.4)**	**33 (63.5)**		**31 (77.5)**	**60 (69.8)**
				0,10		
Level of education						
No professional education	**41 (39.8)**	**19 (37.3)**	**22 (42.3)**		**18 (40.0)**	**35 (40.7)**
Upper secondary education	**39 (37.9)**	**20 (39.2)**	**19 (36.59**		**12 (30.0)**	**30 (34.9)**
College-level education	**18 (17.5)**	**9 (17.6)**	**9 (17.3)**		**7 (17.5)**	**16 (18.6)**
University education	**5 (4.9)**	**3 (5.9)**	**2 (3.99**		**5 (12.5)**	**5 (5.8)**
				0.96**		
Profession						
Blue collar	**62 (60.2)**	**32 (62.7)**	**30 (57.7)**		**23 (57.5)**	**50 (58.1)**
White collar	**25 (24.3)**	**11 (21.6)**	**14 (26.9)**		**10 (25.0)**	**21 (24.4)**
Businessman	**16 (15.5)**	**8 (15.6)**	**8 (15.4)**		**7 (17.5)**	**15 (17.4)**
				0,81		
Retirement						
Retired	**57 (55.3)**	**24 (47.1)**	**33 (63.5)**		**27 (67.5)**	**49 (57.0)**
Not retired	**46 (44.7)**	**27 (52.9)**	**19 (36.5)**	**0,09**	**13 (32.5)**	**37 (43.0)**

*Chi Square –test, **Fisher's Exact Test

Table 3. Clinical factors in this study

Variable	**Patients (n=103) after MI f (%)**	**Intervention group (n=51) f (%)**	**Control group (n=52) f (%)**	**p-value** between the groups f (%)**	**Diary contributors (n=40) f (%)**	**Interviewees (n=86) f (%)**
Depressive symptoms in hospital*						
Non-depressive (BDI < 10)	**66 (64.1)**	**32 (62.7)**	**34 (65.4)**		**22 (55.0)**	**31 (36.1)**
At least mild symptoms (BDI ≥ 10)	**37 (35.9)**	**19 (37.3)**	**18 (34.6)**		**18 (45.0)**	**55 (64.0)**
				0.78		
Previous depression						
No depression before	**83 (80.6)**	**41 (80.4)**	**42 (80.8)**		**31 (77.5)**	**69 (80.2)**
At least one depression sometime in lifetime	**20 (19.4)**	**10 (19.6)**	**10 (19.2)**		**9 (22.5)**	**17 (19.8)**
				0.96		
Previous antidepressive medication						
Never used antidepressive medication	**91 (88.3)**	**46 (90.2)**	**45 (86.5)**		**35 (87.5)**	**76 (88.4)**
Previous history of antidepressive medication use	**12 (11.7)**	**5 (9.8)**	**7 (13.5)**		**5 (12.5)**	**10 (11.6)**
				0.56		
MI history						
No previous MI	**80 (77.7)**	**42 (82.4)**	**38 (73.1)**		**31 (77.5)**	**67 (77.9)**
At least one previous MI	**23 (22.3)**	**9 (17.6)**	**14 (26.9)**		**9 (22.5)**	**19 (22.1)**
				0.26		
Other long-term diseases						
No other long-term diseases	**39 (37.9)**	**17 (33.3)**	**22 (42.3)**		**14 (35.0)**	**32 (37.2)**
At least one long-term disease	**64 (62. 1)**	**34 (66.7)**	**30 (57.7)**		**26 (65.0)**	**54 (62.8)**
				0,35		
Smoking status						
No smoking	**65 (63.1)**	**29 (56.9)**	**36 (69.2)**		**28 (70.0)**	**57 (66.3)**
Smoking at least sometimes	**38 (36.9)**	**22 (43.1)**	**16 (30.8)**		**12 (30.0)**	**29 (33.7)**
				0,19		

*First 5 patients were recruited with depressive symptoms before changing the composition **Chi Square-test symptoms. At 18 months, none of the 16.7% of depressive patients in the intervention group suffered from moderate to severe symptoms any longer (Paper 1, Figure 3). The change of status of cognitive-affective group items (p=0.005) as well as somatic group items (p=0.002) was more positive and descending in the intervention group at 6 months. At 18 months, there were still fewer cognitive-affective symptoms in the intervention group (p=0.003), but this was no longer the case with somatic symptoms (p=0.665).

Depressive symptoms decreased statistically significantly (p=0.009) in the intervention group compared with the control group during the 18-month follow-up as measured with BDI. Among the patients in the intervention group, the decrease of the depressive symptoms was statistically significant during the 6- and the 18-month follow-up. Among the patients in the control group, the change in depressive symptoms was not statistically significant during the 6- or the 18-month follow-up (Table 4).

Table 4. Depressive symptoms and distress among patients in the intervention group (IPC) and in the control group (CTRL) during the follow-up

DEPRESSIVE SYMPTOMS	**OR**	**95% Cl**	**p-value***
IPC during the 6-month follow-up	0.42	0.21-0.84	0.014
CTRL during the 6-month follow-up	1.28	0.76-2.14	0.347
IPC during the 18-month follow-up	0.31	0.16-0.61	0.001
CTRL during the 18-month follow-up	1.15	0.60-1.22	0.672
DISTRESS			
IPC during the 6-month follow-up	0.59	0.30-1.17	0.132
CTRL during the 6-month follow-up	1.14	0.62-2.12	0.671
IPC during the 18-month follow-up	0.42	0.21-0.84	0.015
CTRL during the 18-month follow-up	0.90	0.43-1.86	0.773
DISTRESS IN PATIENTS UNDER 60 YEARS			
IPC, during the 18-month follow-up	0.34	0.13-0.89	0.028
CTRL, during the 18-month follow-up	4.83	1.11-21.07	0.036

*logistic regression

The change in distress during the 18-month follow-up was not significant (p=0.299) between the intervention and control group. In the intervention group, the decrease in distress was not significant during the 6-month follow-up, but it became significant during the 18-month follow-up. In the control group the change was not significant during the 6-month or the 18-month follow-up.

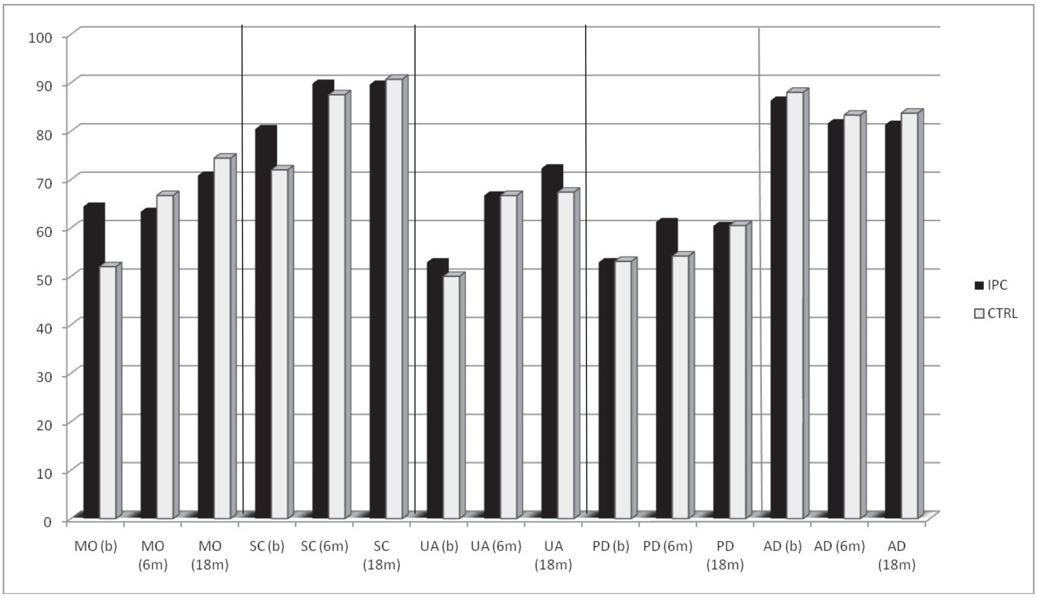
Considering patient characteristics without IPC, at least one other long-term disease at baseline was associated with depressive symptoms at the 6-month follow-up (p=0.045). Previous self-reported use of some antidepressive medication in lifetime was associated with depressive symptoms (p=0.007 and p=0.017, respectively) and distress (p=0.010

and p=0.003, respectively) at 6- and 18- month follow-up. Self-reported depression sometime in lifetime was associated with depressive symptoms (p=0.031 and p= 0.010, respectively) at the 6- and 18-month follow-up, and distress at 18 months follow-up (p=0.038). Depressive symptoms at baseline were associated with depressive symptoms in the intervention and control group at 6 and 18 months (p<0.0001). Distress at baseline was associated with distress of at 6 months (p=0.0001) and 18 months (p=0.003).

During the 18-month follow-up, IPC was more effective on distress with patients under 60 years than with older patients (p=0.033). There was a significant decrease in distress in patients under 60 years in the intervention group during the 18-month follow-up, while an increase was seen in the control group (Table 4).

5.2.2 Health-related quality of life (Paper II)

HRQOL was assessed with EQ-5D, consisting of the EQ-5D descriptive system, EQ index and EQ VAS. At baseline, there were no differences in the EQ-5D descriptive system dimensions mobility, self-care, usual activities, pain/discomfort, anxiety/depression, EQ index or EQ VAS between the groups. HRQOL was relatively good during follow-up in both groups (Figure 6). In the intervention group, significant improvement was found in usual activities during the 6-month (OR=2.0, 95% Cl 1.1.-3.8, p=0.024) and 18-month (OR=2.7, 95% Cl 1.5-4.6, p=0.001) period after hospital discharge. In the control group, mobility improved during the 6-month (OR=1.9, 95% Cl 1.0-3.4, p=0.046) and during the 18-month (OR=2.7, 95% Cl 1.3-5.7, p=0.009) follow-up. Improvement in self-care was also significant during the 6-month (OR=2.6, 95% Cl 1.3-5.2, p=0.006) and 18-month (OR=3.6, 95% Cl 1.3-9.9, p=0.012) follow-up. Usual activities increased in the control group during the 6-month (OR=2.1, 95% Cl 1.1-4.2, p=0.030) and 18-month (OR=2.3, 95% Cl 1.1-4.7, p=0.019) period after hospital discharge.



Percentage (%) of patients in the intervention group and in the control group with no problems in Mobility (MO), Self-Care (SC), Usual Activities (UA), Pain/Discomfort (PD) and Anxiety/Depression (AD) at baseline (b), at 6 months (6m) and at 18 months (18m) after discharge.

Figure 6. Descriptive system in the intervention and in the control group during the follow-up

There were no statistically significant differences in HRQOL between the groups during the 6- month and 18-month period in HRQOL. The improvement of HRQOL was statistically significant among patients in the intervention group during follow-up, but not in the control group, even if there was a tendency toward significance (Paper 2, Figure 2).

However, significantly better improvement of HRQOL was found among patients under 60 years of age compared with patients under 60 years in the control group (Paper 2, Figure 3). The improvement of EQ VAS was better during the 6-month follow-up (group × time effect, $p<0.001$) and during the 18-month follow-up (group × time effect, $p=0.004$). Considering the increase in the EQ-5D index in patients under 60 years, the improvement was better in the intervention group during the 18-month follow-up (group × time effect, $p=0.032$), but not quite during the 6-month follow-up (group × time effect, $p=0.08$).

5.2.3 The use of health care services (Paper III)

The Use of Health Care Services questionnaire, which was used at 6 and 18 months after hospital discharge, indicated that during 6 months after hospital discharge patients with no long-term disease used specialized health care services significantly less in the intervention group than in the control group (OR 0.18, 95% CI 0.04-0.74, $p=0.017$), while the use of somatic specialized health care services did not differ between the groups among patients with at least one long-term disease. From 6 to 18 months after hospital discharge, patients with no long-term disease used significantly less specialized health care services in the intervention group than in the control group (OR 0.07, 95% CI 0.01-0.44, p=0.004), while the use of specialized health care services did not differ among patients with at least one long-term disease (OR 0.44, 95% CI 0.11-1.80, p=0.252). Furthermore, fewer patients (44.7%) in the intervention group than in the control group (73.1%) used any somatic specialized health care services from 6 to 18 months after hospital discharge (p=0.007). There were no other statistical significant differences between the groups in the use of health care services after MI. Some psychiatric health care services were used in both groups with no differences between them (Paper 3, Table 2).

Gender, living alone or with someone, retirement, level of education, previous depression and other long-term diseases besides coronary artery disease had statistically significant associations with the use of health care services (Paper 3, Table 3). The use of some health care services was significantly increased by female gender, living with someone, being retired, having university education, depression sometime in the lifetime and both no long-term disease and at least one long-term disease. Other patient characteristics and IPC had no significant differences in the use of health care services.

5.2.4 Satisfaction with interpersonal counselling and with information received from professionals

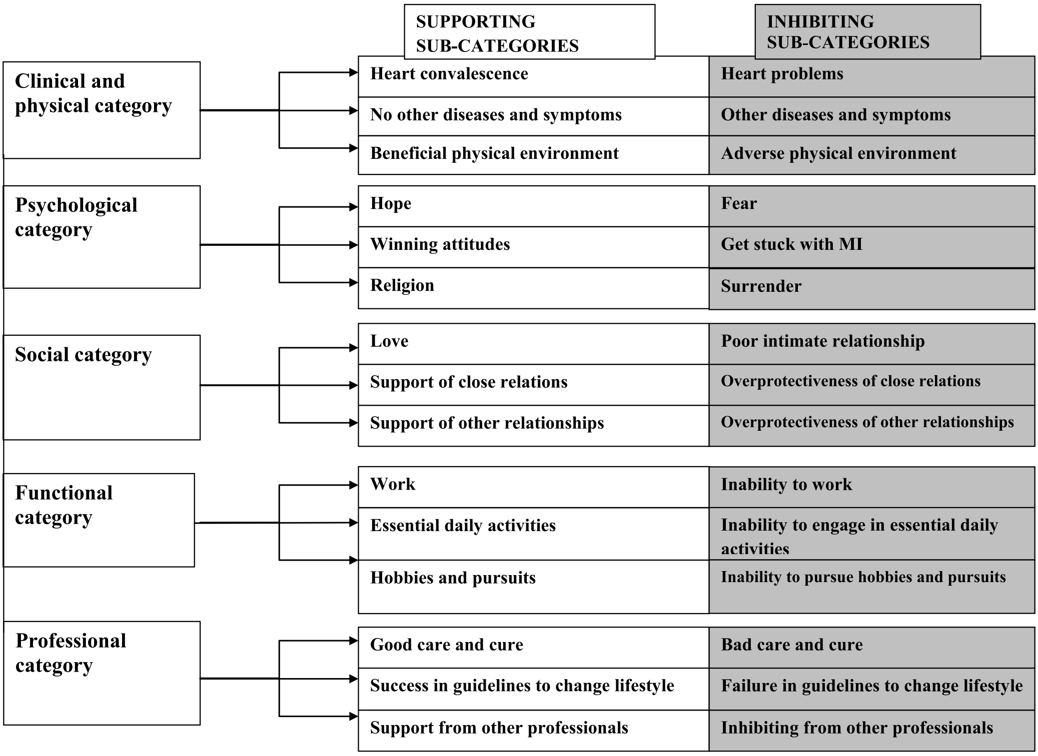
Using school grades from 4 to 10, patients (n=46) reported in the telephone interview 6 months after hospital discharge their satisfaction with IPC to be at the mean level 8.4 (Std Dev 1.23, median 9.0). They could also report their assessment of the utility of IPC. In these add-on comments, quite good satisfaction was reported. Those patients who felt themselves not to be at all depressive, reported mostly that intervention was necessary for many others as part of care after MI. None reported intervention to be insulting or stigmatizing.

Table 5. Patient characteristics and satisfaction with information

PATIENT CHARACTERISTICS	Mean	Std Dev	Median
Male (n=62)	7.7	1.46	8.0
Female (n=25)	7.3	1.90	7.5
Married (n=50)	7.5	1.61	8.0
Other marital status (n=37)	7.7	1.60	8.0
Age under 60 years (n=37)	7.4	1.85	8.0
Age 60-74 years (n=50)	7.8	1.39	8.0
Living alone (n=26)	7.9	1.61	8.0
Living with someone (n=61)	7.5	1.59	8.0
Retired (n=50)	7.6	1.60	8.0
Not retired (n=37)	7.7	1.62	8.0
Blue collar (n=53)	7.7	1.59	8.0
White collar (n=21)	7.2	1.77	7.0
Businessman (n=13)	8.1	1.42	9.0
No professional education (n=35)	7.5	1.53	8.0
Upper secondary education (n=32)	8.0	1.42	8.0
College-level education (n=16)	7.2	1.84	7.0
University education (n=4)	7.8	2.5	9.0
No previous MI (n=67)	7.7	1.60	8.0
At least one previous MI (n=20)	7.5	1.64	8.0
No previous depression (n=70)	7.7	1.54	8.0
At least one depression sometime in lifetime (n=17)	7.1	1.79	8.0
Never used antidepressive medication (n=77)	7.6	1.58	8.0
Previous history of antidepressive medication use (n=10)	7.4	1.82	8.0
No other long-term diseases (n=34)	7.7	1.70	8.0
At least one long-term disease (n=53)	7.6	1.55	8.0
No smoking (n=58)	7.8	1.54	8.0
Smoking at least sometimes (n=29)	7.2	1.67	8.0

Using school grades from 4 to 10, patients (n=86) reported in the interviews by telephone their satisfaction with information received from professionals to be on the mean level of 7.6. There were no statistically significant differences between the intervention (n=44, mean 7.6) and the control group (n=42, mean 7.5). Considering patient characteristics, there were some differences, but not statistically significant ones (Table 5). Patients could also report their assessment of the information received from professionals. In these in add-on comments, those who felt information needless reported mostly high-level grades, but there were also a number of dissatisfied patients. Own activity was reported to be very important in the terms of receiving information. More control and responsibility on the part of professionals was desired after hospital discharge. Furthermore, criticism was directed both to generally at health care system level and at professionals on an individual level.

5.3 Supporting and inhibiting factors in recovery after myocardial infarction (Paper IV)



	SUPPORTING SUB-CATEGORIES	INHIBITING SUB-CATEGORIES
Clinical and physical category	Heart convalescence	Heart problems
	No other diseases and symptoms	Other diseases and symptoms
	Beneficial physical environment	Adverse physical environment
Psychological category	Hope	Fear
	Winning attitudes	Get stuck with MI
	Religion	Surrender
Social category	Love	Poor intimate relationship
	Support of close relations	Overprotectiveness of close relations
	Support of other relationships	Overprotectiveness of other relationships
Functional category	Work	Inability to work
	Essential daily activities	Inability to engage in essential daily activities
	Hobbies and pursuits	Inability to pursue hobbies and pursuits
Professional category	Good care and cure	Bad care and cure
	Success in guidelines to change lifestyle	Failure in guidelines to change lifestyle
	Support from other professionals	Inhibiting from other professionals

Figure 7. Main categories and supporting and inhibiting sub-categories in recovery experienced by the patients

Five main categories of recovery experienced by the patients after MI were identified: clinical and physical, psychological, social, functional and professional categories. In the main categories supporting and inhibiting factors and sub-categories were identified (Figure 7). Moreover, the emphasis of supporting and inhibiting factors on recovery after MI in the intervention group and in the control group was analyzed. Table 6 of supporting factors after MI and Table 7 illustrate supporting and inhibiting factors at a concrete level reported by the patients.

Table 6. Examples of supporting factors after MI

CLINICAL AND PHYSICAL CATEGORY	PSYCHOLOGICAL CATEGORY	SOCIAL CATEGORY	FUNCTIONAL CATEGORY	PROFESSIONAL CATEGORY
-good recovery from MI	-hopeful mind	-love of my spouse	-work helps	-good physician
-good condition	-adapting to disease	-help from children;	-housework	-success in stopping smoking
-no symptoms	-take a day at a time	-meeting people	-outings	-retirement
-no pains	-sense of humour	-lovely grandchildren	-ability to return back to work	-wonderful nurse
-small damage in MI	-belief on God	-normal behaviour of near and dear	-shovelling snow	-diet works
-mental well-being	-optimism	-support from workmates	-jogging	-hearth courses
-less pain	-Finnish willpower	-cat	-nature	-expertise of ambulance staff
-better cholesterol level	-praying	-support from spouse	-working in the garden	-healthy regimes successful
-good blood pressure	-reasoning	-a neighbour with the same experience	-cycling	-part-time retirement
-better sleep	-license to take it easy attitude	-family	-summer cottage	-good medication
-good weather to breath	-joy	-cousins	-chopping woods	-good information

Table 7. Examples of inhibiting factors after MI

CLINICAL AND PHYSICAL CATEGORY	PSYCHOLOGICAL CATEGORY	SOCIAL CATEGORY	FUNCTIONAL CATEGORY	PROFESSIONAL CATEGORY
-new MI	-shock	-marriage was a mistake	-cannot work anymore	-bad medication
-cancer	-why me?	-my near and dear take care of too much	-cannot move outside the home	-giving up sweets did not succeed
-depression	- waiting only for death	-neighbours take care of too much	-no volleyball any longer	- no economical support from society
-arrhythmia	-uncertainty of future	-husband does not care;	-work was the content of my life	-cannot stop smoking
-breathing in bad weather	- difficult to accept MI	-wife scared	-inability to work in the garden	-the whole health care system is defunct
-diabetes	- I will never be healthy again	-too many visitors	-limited possibilities for sport	-no pension
-prolonged convalescence	-fear of new MI	-husband is a drink addict	-inability to drive a car	-poor behaviour of physician
-pain	-MI on my mind all the time	-overprotectiveness on the part of children	-difficult to take care of every day matters	-no information from anywhere
-drinking problem	-MI unfair punishment for the rest of my life	-overprotectiveness on the part of workmates	-forced to restrict actions	-diet did not succeed
-high blood pressure	-chaotic mind	-I can't help others any more	-renunciation of active sport	-bad staff
-chest pain	-confusion	-diseases of intimates	-cannot bath in sauna	-nobody cares

5.3.1 Clinical and physical category

The clinical and physical category included experiences by the patients as well as diagnosed symptoms and diseases reported by them. Clinical and physical factors were linked together due to their close interaction in recovery. “Heart convalescence” included supporting factors related to MI and the heart and health in general. “No other diseases and symptoms” consisted of absence and better condition from the point of view of other diseases and symptoms. “Beneficial physical environment” included such factors as “milder weather” belonging to this category, when they showed up in this context, and were experienced to influence the patient’s clinical and physical condition.

“Heart problems” as an inhibiting sub-category consisted of different kinds of problems, symptoms and diseases, related to the heart. Factors such as “depression”, “anxiety” or “fatigue”, which appeared in the context of clinical or physical factors, belong to the sub-category “Other diseases and symptoms”. There were a number of different diseases and symptoms in this sub-category. “Adverse physical environment” included inhibiting factors related generally to physical and clinical condition. There were more inhibiting than supporting factors, including many symptoms of MI and coronary disease, but also of many other diseases and symptoms.

5.3.2 Psychological category

The psychological category included such factors as feelings, attitudes and different kinds of personal defences, which were meaningful for MI patients and their recovery in terms of their psychological meaning for the patients. Supporting factors indicated successful psychological handling of MI reported in many personal ways. The subcategory “Hope” included hope, its synonyms and similar positive feelings and attitudes. The clear boundary between “Hope” and “Winning attitudes” was not always strict. For example, beneficial personal coping strategies and defences such as humour or reasoning, which appear considerably often in the supportive sense, could be used in both contexts. “Winning attitudes” pointed more towards an approach or decision of overcoming MI. “Religion” consisted of religious convictions as factors.

“Fear” included inhibiting and sometimes primitive reactions and emotions, which made recovery difficult. “Getting stuck with MI” consisted of factors that meant slackening and stagnation for the patient after MI. “Surrender” as a sub-category indicated that the patient had given up and no longer had enough strength.

5.3.3 Social category

The social category included the factors that were important for the patient’s recovery in the social meaning and context. “Love” consisted of intimate relationships, in which love and affection was present. Pets, which were especially important for some patients, were coded to this category. “Support of close relations” included more practical help and support from close relations such as family members, which was often highly valued. "Support of other relationships" referred to help, practical and emotional support from other relations such as work mates.

"Poor intimate relationship" included factors that were often long-term in nature and had emerged before MI, such as difficulties in marriage or other intimate relationship. Overprotectiveness and reactions towards the MI patient that were somehow unnatural in close relationships or other relationships are emphasized in the subcategories of "Overprotectiveness of close relations" and "Overprotectiveness of other relationships".

5.3.4 Functional category

The functional category included working, daily activities, pursuits, hobbies and things as nature, seasons, weather or birds in this context. "Work" as a subcategory included just work or job, reported as supporting by many participants. "Essential daily activities" consisted of everyday chores, housework or activities appreciated as being important. "Hobbies and pursuits" consisted of numerous different factors, often reported to be possible and following factors from other categories, such as "license for taking easy", pension or sick leave.

All three sub-categories "Inability to work", "Inability to engage in essential daily activities" and "Inability to pursue hobbies and pursuits" consisted of the similar factors as the supporting sub-categories, but inability was predominant in an inhibiting meaning.

5.3.5 Professional category

The professional category included care, cure, actions and guidelines that had been provided by all the professionals involved, also others than health care professionals. The supporting sub-category "Good care and cure" was related to health care staff and their action. "Success in guidelines to change lifestyle" included experiences of success in lifestyle changes, such as smoking cessation or improved diet. "Support from other professionals" consisted of support outside the scope of health care.

In the professional category, the inhibiting subcategories "Bad care and cure", "Failure in guidelines to change lifestyle" and "Inhibiting from other professionals" were associated in a negative way with the same kind of factors as in the case of supporting sub-categories.

5.3.6 The emphasis of supporting and inhibiting factors on recovery after MI in the intervention group and in the control group

A number of supporting and inhibiting factors were quantified in the intervention group and the control group (Table 3 Paper IV) using attribution analysis. No statistically significant differences were found between the groups in the number of patients who mentioned at least one factor as supporting or inhibiting for each main category after MI. There were more references to supporting than inhibiting factors in the psychological, social, functional and professional categories in the two data sets. The percentage of inhibiting factors was lower in the interviews compared with the diaries in these categories. In the clinical and physical category, inhibiting factors made up the majority in both data sets in terms of the number of patients and references.

6 DISCUSSION

The purpose of this 18-month follow-up study was to evaluate the outcomes of interpersonal counselling implemented by a psychiatric nurse after myocardial infarction, and to examine the recovery experienced by the patients after myocardial infarction. The outcomes of IPC after MI included depressive symptoms and distress, HRQOL, the use of health care services and satisfaction with IPC and with the information received from professionals. Moreover, the purpose of the study was to describe and analyze the supporting and inhibiting factors in recovery experienced by the patients after MI. The aim of this study was to produce more knowledge from the perspective of psychiatric care in order to develop nursing practice after MI and to shed light on topics worth of further study. The discussion begins by looking at the validity and reliability of the study, moving on to comparing the results with those of earlier studies with summarized conclusions. Finally, clinical implications for nursing practice, and suggestions for further research are presented.

6.1 Validity and reliability of the study

Triangulation was used in this study in study design, sampling, instruments and data analysis. In this study composition, triangulation was a relevant solution in order to answer the research questions, which require different validity and reliability processing in the quantitative and qualitative phase of the study. The adequacy of the quantitative phase of the study was examined by assessing validity and reliability. Validity is a measure of accuracy and truth of the study related to the phenomenon of interest. Internal validity estimates the degree to which an instrument measures what it is supposed to measure, while external validity assesses the representativeness of the sample size and the generalizability of the results. Reliability represents the consistency of the measure obtained. (Polit & Hungler 1999, Polit & Beck 2010.) Validity and reliability are rather a matter of degree than all-or-nothing or either-or questions (Nummenmaa 1997, Burns & Grove 2009). The reliability and validity of the qualitative part of the study, diaries and interviews, and in this case, supporting and inhibiting factors in recovery, are examined through trustworthiness, which includes credibility, dependability and transferability (Lincoln & Guba 1985, Polit & Hungler 1999, Graneheim & Lundman 2004, Burns & Grove 2005, Polit & Beck 2010).

This study called for the use of different methods and instruments, which required present validity and reliability to be separated in the quantitative and qualitative phase of the study. In this section, firstly, the validity and reliability of the study is discussed concerning the study composition. Secondly, the validity and reliability of the study is discussed in relation to the outcomes of interpersonal counselling after myocardial infarction. Internal validity is presented through content, construct and statistical conclusion validity. External validity, including criterion-related validity and reliability, are presented as their own entities. Thirdly, validity and reliability are presented concerning the recovery experienced by the patients, diaries and interviews. Some limitations should be under more than one heading, but choices have been made to achieve an explicit and concise presentation.

6.1.1 Validity and reliability of the study composition

To conduct a high validity study, consolidated standards and principles of reporting randomized controlled trials (RCT) in general (Altman et al. 2001) and RCT in non-pharmacological treatments (Boutron et al. 2008), as well as applying qualitative interviews to report important aspects of the study methods, context of the study, findings, analysis and interpretations (Tong et al. 2007) were complied with. When conducting intervention studies in practice, it is difficult to reach all the conditions required by RCT: randomization, manipulation and double blinding (Rosenberger & Lachin 1993, Wood et al. 2008). It is unrealistic to provide, for example, standard care during the first six months for one group and IPC for another after MI, and then switch the methods after a new MI in order to be able to measure the scores experimentally. Blinding may be difficult or even impossible to carry out in non-pharmacological trials, in which the intervention that is being tested is usually complex, including several components (Boutron et al. 2008). This study was as close to a randomized controlled trial as possible. Randomization was carried out by assigning patients to the control and intervention group as agreed in advance. In manipulation, the intent-to-treat principle was followed: no patients were moved from intervention group to the control group or vice versa. Double-blinding or placebo treatment was not possible in this study composition. MI patients with IPC knew that they were in the intervention group, as did the patients in the control group.

6.1.2 Validity and reliability of the outcomes of interpersonal counselling after myocardial infarction

Internal validity

Internal validity estimates the degree to which an instrument measures what it is supposed to measure. Internal validity can be examined through content validity, construct validity and statistical conclusion validity. (Polit & Hungler 1999, Polit & Beck 2010.)

Content validity

Content validity involves the evaluation of whether the instruments are measuring what they are supposed to measure. It also includes operationalization of the concepts to be in a measurable form. (Polit & Hungler 1999, Polit & Beck 2010.) In this study, congruent instruments with high validity in previous studies were available to measure depressive symptoms (BDI), distress (SCL-25) and HRQOL (EQ-5D) according to the literature review (Joukamaa et al. 1994, Beck et al. 1998, Ohinmaa & Sintonen 1999, Schweikert et al. 2006). The UHCS questionnaire was developed in co-operation with the somatic ward where MI patients were recruited to the study, because the care-paths and health care services vary locally in Finland. The limitation is that no pilot testing of the UHCS-q was done with MI patients, because the process would have lasted too long. Both the literature review and the practical solutions of conducting the study resolved the selection of the instruments. All the patients were informed in writing and orally on how to use the instruments. The participants did not have many questions to ask during the phone contacts and the questionnaires were correctly filled in.

Construct validity

Construct validity refers to the degree to which inferences can legitimately be made from the operationalizations to the theoretical constructs on which those operationalizations were based; how the instrument measures the theoretical construct it is supposed to measure (Burns & Grove 2009). BDI and SCL-25 are used to measure depressive symptoms and distress including many items considering cognitive-affective and somatic symptoms. The interest in this study was on the number of patients according to the presence or absence of depressive symptoms and distress in three measures. The number of depressive and non-depressive patients was counted instead of the number of the scores given by these instruments. The reason for this solution was clinical: for example, for BDI scores a decrease from 8 to 3 is statistically significant, but this is not in the case from the perspective of an individual patient. In this study, the difficulties of measuring HRQOL exactly became evident, as has been reported with EQ-5D in different mental health states (Knapp & Mangalore 2007) as well as for day-case surgery patients (Suhonen et al. 2008a). The sample in this study does not allow a more analytical inspection using the EQ-5D. HRQOL improved statistically significantly in the intervention group and in patients under 60 years during follow-up, but it is difficult to specify exactly which part of the intervention might be helpful and what are the impacts of external factors, especially when healing occurs spontaneously. This study design allowed examining whether or not MI patients used different health care services. The purpose was not to gain a deeper understanding of the content or costs of these visits. To ensure the homogeneity of the groups, PDQ-4+ was used at 18 months after hospital discharge. If there were significant differences between groups, this might affect the result of reported depressive symptoms, as personality disorders seem to affect the scores of BDI (Hyler et al. 1990). There also seem to be over-reporting of self-reported personality disorders (Whyte et al. 2006). No differences between the groups in the personal aspects were found using PDQ-4+, but 63.7% of the patients with no differences between the groups reported items indicating “too good”, which means that they underestimated and flattered their personal aspects. Consequently, this result allows no deeper analysis.

There are limitations in intervention studies of this kind because controlling for extraneous variables and factors is challenging in intervention studies involving human interaction. IPC may have benefits after MI, but it is more difficult to pinpoint exactly what was helpful in the intervention. There are several possibilities: human contact, the discussion itself, courage to seek help, lifestyle changes or two or more of these together. On the other hand, it is not possible to compare the level of "standard care" to other hospitals and clinics, as the data collection focused on one university hospital in Finland. Due to the difficulties in recruiting patients, the protocol was changed after 5 patients with depressive symptoms (BDI ≥ 10) so that all MI patients were able to participate in the study. The increasing prevalence of depressive symptoms after MI (Luutonen et al. 2002, Carney et al. 2009) advocated the solution. In addition, the data were also tested without these 5 patients on depressive symptoms and distress, and the results were very similar to the results in this study.

One limitation of this study is that it included both patients with and without depressive symptoms. Furthermore, most of the depressive patients in this study had mild symptoms, and depression was not diagnosed according to DSM-IV or ICD-10. In conclusion, it is not possible to generalize the outcomes of IPC on clinical depression as probably only a minority of the patients had it. On the other hand, there are not enough skills or resources to diagnose and treat clinical depression in the real world and in practice in MI patient care and cure. Just screening depressive symptoms is more realistic. As a limitation, there were more females in the control group than in the intervention group (17 vs. 13). Depression is more prevalent and BDI may be more sensitive among females than males (Salokangas et al. 2002). However, gender or other patient characteristics did not explain depressive symptoms or distress in our study. BDI consists of cognitive affective statements and somatic statements, which were also measured separately, because somatic symptoms may confound the measurement of depressive symptoms in patients with somatic disease (Thombs et al. 2008, 2010). During the 6-month follow-up, both cognitive-affective and somatic symptoms although decreased more in the intervention group. As there was no register available on health care use in Finland, the patients reported their use of health care services themselves. As a result, possibilities for error exist, as patients may not recall things correctly. They may also be ashamed of reporting their use of services. However, they were not asked to report the reasons for their visits. Considering satisfaction with IPC and information received from the professionals, the school grades 4-10, as interviewed by phone, did apparently not have the same criteria between the patients – even if they were also asked to provide oral assessments.

Statistical conclusion validity

Statistical conclusion validity occurs when it is concluded that there is a relationship of some kind between the two variables being examined. Drawing conclusions from data to the real world can be threatened by low statistical power, error in statistical test assumptions or erroneous conclusions of relationships that are not true. (Burns & Grove 2009.) The statistical tests were carried out utilizing high-level Finnish statistical scholarship. The limitation is that no power analysis was done. The estimation of the sample size was based on the drop-outs – dead and refused in a previous study (Luutonen et al. 2002) which concerned depressive symptoms. The hypothesis that depressive symptoms decrease in the intervention group was confirmed. No power analysis was performed for the indirect effects of IPC on the HRQOL and the use of health care services, which was a tentative directional research question in this study.

External validity

External validity estimates the representativeness of the sample size and the generalizability of the results. External validity is related to generalizing, referring to the approximate truth of conclusions that involve the generalizations. (Polit & Hungler 1999, Polit & Beck 2010.)

The sample size was based on the composition of the previous study (Luutonen et al. 2002) with the same target group. The hypothesis that depressive symptoms decrease in the intervention group was confirmed. In addition, IPC had effects on distress and HRQOL among younger patients and effects on the use of specialized health care services. The duration of hospital treatment after MI is very short in Finland, as in other Western countries (World Health Organization 2006, 2008), which made it difficult to recruit patients for the study. In practice, it was not possible to prolong data collection, because changes in nursing practice over time might have affected the results. On the other hand, of total of 103 patients 6 patients died and only 6 refused during the 18-month follow-up. The size of the sample was small regarding the number of users of mental health services. The result of the use of health care services cannot be generalized, but it strongly indicates the need for further studies with larger, power analysed samples. The results of outcomes of IPC on depressive symptoms are in line with previous studies (Buckley et al. 2007, Markowitz 2008, May et al. 2009, Allen & Dennison 2010, Clark et al. 2010), which increases external validity. Consequently, the conclusion that IPC is effective on depressive symptoms and at least on distress among patients aged 60 years is justifiable. The findings of indirect effects on HRQOL and the use of health care services among younger patients are encouraging.

There are some limitations in generalizability in this study. The data collection focused on one area near a university hospital in Finland, which limits the generalizability of the results. However, the results of outcomes of counselling intervention on depressive symptoms are in line with previous studies in the Western countries (Buckley et al. 2007, Markowitz 2008, May et al. 2009, Allen & Dennison 2010, Clark et al. 2010). The participants were under 75 years of age. Consequently, the results are not generalizable to older MI patients. The data were collected at a time when the health care system was undergoing change. On the other hand, considering the use of health care services, the number of health care visits may partially depend on the system itself. However, getting in touch with the services was the patients' own responsibility.

Criterion-related validity

Criterion-related validity examines the accuracy of the instrument: how predictable the results are and how the results comply with those measured with another instrument (Burns & Grove 2009, Polit & Beck 2010). The outcomes of IPC after MI have probably not been studied before, even if results of the literature review indicated many benefits of counselling after MI. BDI (Huffman et al. 2010) has been reported to measure depressive symptoms, SCL-25 distress (Joukamaa et al. 1994) and EQ-5D (Ohinmaa & Sintonen 1999) HRQOL with high validity. The concepts depression or depressive symptoms and distress are close to each other in psychiatric nursing practice, while distress measured with SCL-25 included anxiety, cognitive-affective depressive and somatic depressive symptoms. In this study two instruments, BDI for depressive symptoms and SCL-25 for distress correlated highly in three measures. Spearman correlation coefficient between BDI and SCL-25 was 0.85 in hospital, 0.87 at 6 months, and 0.78 at 18 months. The rate varied between the instruments at three measurements from 0.8 to 0.89 in the intervention group and from 0.79 to 0.87 in the control group. Due to the flexible nature of IPC, it is also realistic to suppose that the positive results are not strictly dependent on the content of the counselling intervention after MI. It is realistic to assume that in future counselling studies on this topic are worth carrying out with these instruments.

Reliability

Reliability represents how repeatable or consistently the measurement technique measures the concept of interest. It determines the coverage to which random error are minimized. (Polit & Hungler 1999, Burns & Grove 2005, DiCenso et al. 2005.) To encourage patients to remain in the study and to improve its reliability each patient was contacted by phone at 6 and 18 months after hospital discharge. The validated questionnaires as well as interviews were simple to answer, and patients had in every contact an opportunity to ask about anything relating to the questionnaires or the study. The telephone contacts might have prevented drop-outs. The experiences of this study indicated that MI patients are ready for interventions concerning their mood and depressive symptoms. During the long-time follow-up MI patients were also able to fill in questionnaires with very personal and intimate questions. Only one patient in the intervention group and five patients in the control group refused to continue in the study during the 18-month follow-up. The fact that most patients remained very highly in the study strengthens the reliability of the results. In addition, patients' willingness to voice criticism in the interviews speaks on behalf of their trust in the study and the interviews and the reliability of the results. SCL-25 was chosen for the study to increase the reliability of depressive symptoms measured by BDI. The results advocate both the reliability of BDI and SCL-25 and the effectiveness of the intervention.

The intervention nurse was the one and only psychiatric nurse during the long-term data collection, which increases the conformability of the intervention. The learning process of IPC and modifying its structure for a practical setting is quite clear and easy.

IPC training took only one day, and most of the sessions could be carried out by phone. Besides being flexible, IPC is a structured intervention, which enabled follow-up with a structured form. The limitation is that data collection took almost four years, during which time the treatment and standard care of MI may have evolved and transformed.

Cronbach's alpha is a measure of internal consistency, i.e., how closely related a set of items are as a group. A high value of alpha is often used as evidence that the items measure an underlying or latent construct, although there is no consensus on the exact limits for acceptable coefficients. A reliability coefficient of .70 or higher is considered acceptable in most social science research situations. (Cronbach 1951, Zinbarg et al. 2006, Burns & Grove 2009.) Cronbach's alpha of BDI varied from 0.83 in hospital to 0.87 at 18 months. Measured by SCL-25, it was 0.92 on all three measurements. Cronbach's alpha of the descriptive system in EQ-5D was 0.879, and that of EQ VAS 0.779 in three measures. BDI, SCL-25 and EQ-5D can be argued to have acceptable high internal consistency in this study.

6.1.3 Validity and reliability of the recovery after myocardial infarction

Credibility refers to confidence in how well the data and processes of analysis address the intended focus (Polit & Hungler 1999, Burns & Grove 2005, Neuendorf 2005, Polit & Beck 2010). In this study design, the weight of supporting and inhibiting factors was measured with the number of reported patients and all mentions together, but not in terms of individual meaning for the patients. This study design limited supporting and inhibiting factors in recovery to the level that clarified and mentioned different factors and the number of the mentions, but it did not aim at a deeper understanding from the perspective of the individual patient. For example, it is impossible to know whether or not "chopping woods" was less important for the individual than "pancreatic cancer", even if the assessment and opinion of health care professionals may be guessed at. In addition, qualitative data are complex from the viewpoint of statistical tests (Weber 1985, Denzin & Lincoln 2000, Burns & Grove 2005, Neuendorf 2005). In this study, attribution analysis (Krippendorff 2004), which includes the quantifying of factors as a result of qualitative study, sets limits for statistical testing. However, attribution analysis was useful for clarifying the weight of supporting and inhibiting factors by presenting the number of mentions.

Dependability means the degree to which data change over time, and looking for ways to take into account factors of instability and factors of phenomenal or design-induced changes (Polit & Hungler 1999, Burns & Grove 2005, Neuendorf 2005, Polit & Beck 2010). The duration of hospital treatment after MI is very short in Finland, which made it difficult to recruit patients for the study, and the treatment of MI may have transformed during the long-time data collection. Patients kept diaries for 6 months, which was assessed to be an appropriate time for a task that was quite laborious. Only 40 patients out of 103 completed the diaries. This group included more females and highly educated patients than the sample taking part in the interviews. In addition, the content of the diaries varied more than the data of the interviews. The patients had more personal ways to write diaries than answering to interviews. However, 40 diaries were sufficient to saturate the data. In addition, the results of the interviews (n=86) were similar to the diaries, and in the deductive content analysis the structure of the main categories was applicable. It was also practical to carry out easy-to-adopt interviews at 18 months after discharge, at the end of the study.

Transferability refers to the extent to which the findings can be transferred to other groups or settings (Polit & Hungler 1999, Burns & Grove 2005, Neuendorf 2005, Polit & Beck 2010). Of course, the most important aspect is theoretical generalization of the qualitative results. In theoretical generalization, conclusions are drawn from constructs or features developed in a single or local study, which are then utilized in developing a wider theory (Lewis & Ritchie 2003). The data collection focused on the vicinity of a university hospital in Finland, which limits the transferability of the results of individual supporting and inhibiting factors. For example, some items in functional factors, such as “summer cottage” or “picking mushrooms” are very local and not necessarily at all important for other Europeans, but the sub-categories in the main categories are a lot broader and flexible, and may also be theoretically applicable outside of Finland.

6.2 Discussion of the results

The main results in this study concern the outcomes of IPC and recovery experienced by the patients after MI. IPC seems to be effective on depressive symptoms, and on distress among patients under 60 years of age, to have positive effects on HRQOL in younger patients, and it may have a downward association with the use of specialized health care services after MI. Main categories – clinical and physical, psychological, social, functional and professional category - in recovery experienced by the patients included sub-categories with numerous supporting and inhibiting factors. The results compared with earlier studies, are discussed according to the research question in this section. Satisfaction with IPC and information as a minor part of the study reinforces the main results.

The outcomes of interpersonal counselling on depressive symptoms and distress

Depression is related to many medical diseases, and it increases human suffering, poor recovery and health care costs (Katon & Ciechanowski 2002). The results of this study confirm the fact that it is possible to recognize depressive symptoms or depression related to somatic illness and to heal them on time. Early support would benefit patients, the health care system and society. In this study, depressive symptoms and distress after MI were at a high level, in line with previous studies (Luutonen et al. 2002, Frasure-Smith & Lespérance 2003, Nicholson et al. 2006). The hypothesis that IPC is effective on depressive symptoms and distress after myocardial infarction was set up due to encouraging results of counselling interventions (Buckley et al. 2007, May et al. 2009, Allen & Dennison 2010, Clark et al. 2010) after MI. The results of outcomes on depressive symptoms indicated that the hypothesis was at least partially justified. Distress decreased in the intervention group, and better than in the control group among patients under 60 years, but no differences were found between the groups. IPC achieved positive results on depressive symptoms during 18 months of follow-up, in line with previous short-term intervention studies concerning MI and CAD patients (Miller et al. 1998, Berkman et al. 2003, de Leon et al. 2006, Jonkers et al. 2007, Loh et al. 2007, Rollman et al. 2009). MI patients seem to be more able to find mental health services than has previously been reported in Finland (Luutonen et al. 2002), even if the number of users is still quite small. This may result from an improved standard of care, because no differences were found between the groups.

MI may increase somatic depressive symptoms due to its somatic nature (Thombs et al. 2010). In the intervention group, both cognitive-affective and somatic depressive symptoms decreased more than in the control group during the 6-month follow-up, but only cognitive-affective symptoms decreased more at 18 months after hospital discharge. The cognitive depressive symptoms seem to increase the recognition of depression soon after MI, while somatic symptoms seem to associate with long-term outcomes, mortality and rehospitalization after MI (Smolderen et al. 2009). The better results in the intervention group compared with the control group advocate the effectiveness of intervention, but the somatic nature of MI might be reason why there were no longer any differences in somatic symptoms between the groups at 18 months after hospital discharge. IPC seems also to be more effective on distress with patients under 60 years than with older patients. Benefits on depression have been reported with IPT in elderly people (Miller et al. 1998, 2001, Scocco & Frank 2002, Schulberg et al. 2007) and IPC (Mossey et al. 1996), so the result is encouraging. The patients in both groups had a number of long-term diseases. However, depressive symptoms increased only in the control group during the first 6 months. Initial and recurrent depression is a strong predictor of depression and shorter survival after MI (Carney et al. 2009). Not surprisingly, depression sometime in lifetime (or antidepressive medication) was indicated to be a risk for depressive symptoms after MI (Halaris 2009). Depression is more prevalent in non-educated population (Ladin 2008), but no educational differences were found in the level of depressive symptoms after MI in this study.

The outcomes of interpersonal counselling on health-related quality of life

HRQOL is a complex and multidimensional concept (Leino-Kilpi et al. 2005, Moons et al. 2006). HRQOL is known to be at a low level soon after MI, but to improve in the longer term (Simpson & Pilote 2003, Schweikert et al. 2009). HRQOL as an outcome of IPC was the interest of this study, because depression is probably a risk for poor HRQOL (de Jonge et al. 2006, Lee 2009, Page et al. 2010). As expected, HRQOL improved in both groups during recovery (Simpson & Pilote 2003), and no difference was found between the groups. Compared with general population, the status of mobility in both groups at 18 months after discharge was nearly on the same level as reported before, but less pain/discomfort and anxiety/depression was reported considering HRQOL with EQ-5D (Schweikert et al. 2009). However, it has been observed that self-reported depression with three items only seems to be underestimated compared with symptoms measured using more items in the instrument (Frasure-Smith & Lesperance 2003). Once again, this randomized trial has demonstrated that HRQOL may improve with standard care or spontaneously after MI (Simpson & Pilote 2003, Schweikert et al. 2009), which may partly explain the result with no differences between the groups.

Interestingly, the intervention did have an effect on the subgroup of people aged under 60 years of age. Depressive symptoms and distress are related to poor HRQOL (Lane et al. 2001, de Jonge et al. 2006, Page et al. 2010). At baseline, age under 60 years had no difference compared with older patients on depressive symptoms measured with BDI or EQ-5D. Depressive symptoms may have more impact on HRQOL in younger people (Schweikert et al. 2009), and counselling interventions, such as IPC, seem to work best for depressive symptoms in younger people (Bengtson et al. 2004); combined, these two factors contributed to the significant differences compared to older people. This is an important result, because a clinically poorer effect on HRQOL of MI has still been reported to be present in younger patients two years after MI (Bengtson et al. 2004). The improvement in younger patients may also partially be explained by the fact that old age with physical and somatic factors seems to be a very important predictor of poor quality of life after MI (Beck et al. 2001, Schweikert et al. 2009). From the point of view HRQOL, the results of this study indicated a need for development of further IPC to benefit all MI patients. In addition, other approaches to HRQOL may also be needed.

The outcomes of interpersonal counselling on the use of health care services

The treatment of MI and depression as a chronic diseases contribute to great health care expenditure in Western countries (Ministry of Social Affairs and Health 2009, WHO 2010b), and the co-morbidities of depression and other psychiatric problems are prevalent in Finland (Melartin et al. 2002, Vuorilehto et al. 2005). The association of IPC and the use of health care services in this study was one research question, because depression increases the use of health care services (Kurdyak et al. 2008, Blanchette et al. 2009, Smolderen et al. 2009), and on the other hand, depression is undertreated after MI (Frasure-Smith et al. 2000, Luutonen et al. 2002, Parashar et al. 2009). This study was the first stage of evaluating IPC and the use of health care services after MI. Firstly, the results indicated decreasing numbers in the IPC group compared to control group in patients who used somatic specialized health care services after MI, with a significant difference from 6-18 months after hospital discharge. Secondly, IPC for patients with no other long-term diseases indicated a significant reduction in the use of somatic specialized health care services during 6 months after hospital discharge. Thirdly, many patient characteristics in both groups had an effect on the use of health care services. Fourthly, some psychiatric health care services were used in both groups with no differences between the groups.

The main interest in the study was to evaluate whether depression-focused IPC reduces the use of health care services, because depression in itself increases it (Strik et al. 2003, Denollet et al. 2003, Kurdyak et al. 2008, Blanchette et al. 2009, Smolderen et al. 2009). While IPC had effects on depressive symptoms, the decrease in the use of specialized health care services might be derived from it. In addition, decrease among those who had no other long-term diseases increased that presumption, due to the somatic nature of depression. However, radical conclusion cannot be drawn yet after the first-stage study with indirect results.

Patient characteristics are known to affect on health behaviour and the use of health care services in everyday life and after MI (e.g. Carroll et al. 2007, Hutton & Perkins 2008, Blanchette et al. 2009). Patient characteristics in this study also had an effect on the use of health care services. Compared to those who were not retired, some somatic primary care services were used more by retired patients in both groups during the follow-up. This was expected, because higher age is a risk factor for rehospitalizations after MI (Carroll et al. 2007). A higher level of education increased the use of the cardiac rehabilitation programme during the 6 months of follow-up, conversely to the findings of a study in Germany (Altenhoer et al. 2005), but not the use of other health care services, as reported in Canada (Alter et al. 2004). The cultural aspects of the health care system probably play an important role in a study of this kind. Those who reported previous depression sometime in their lifetime used some form of mental health services more on both measurements during the follow-up, but depressive symptoms during the study had no effects on the use of health care services, as in previous studies (Cuellar et al. 2003, Blanchette et al. 2009). Compared to those who had at least one other long-term disease, more patients with no other long-term diseases reported using the cardiac rehabilitation programme after MI, and quite naturally, they used less primary care services during the 6-month follow-up after hospital discharge. Those who lived alone used some specialized health care services more during the 6 months after hospital discharge, which is slightly in line with what has been reported before (Carroll et al. 2007). In general, men are more in need of health care than women after MI (Hutton & Perkins 2008), but no gender differences were found with this data set and instrument.

Depressive patients after MI do not reach psychiatric health care system or medication adequately due to a number of factors, including problems in both diagnosis and treatment of depression after myocardial infarction (Frasure-Smith et al. 2000). The result indicated no differences between the groups, but it did demonstrate more use of psychiatric services in Finland after MI than at the beginning of 2000s (Luutonen et al. 2002). The evolved standard care after MI may have caused the improvement.

The outcomes of interpersonal counselling on satisfaction with interpersonal counselling and information received from professionals

Satisfaction with IPC and the information received from professionals was a study interest, because it is useful to investigate patients' opinions and perspectives on any new care or treatment - particularly sensitive and depression-focused IPC, which may cause some bias in the somatic staff. In addition, the satisfaction with care after MI with which satisfaction with information is linked seems to have a positive effect on recovery (Glickman et al. 2010), and lack of information has been reported before (Wright et al. 2001, Oterhals et al. 2006).

The satisfaction with IPC was at a desirable level, and remarkably, there were no strongly negative experiences among IPC patients. The patients reported that IPC and emotional and psychological aspects are important after MI. Those IPC patients who felt no depressive feelings and no specific need of IPC, reported the same. This might encourage staff in the somatic care to discuss psychological aspects as part of holistic care.

The result of satisfaction (mean 7.6, using school grades from 4 to 10) with information received from professionals may give too positive a picture of information sharing after MI. Many of those who needed no information or had good convalescence after MI gave a good or excellent assessment and grade. However, there were many patients who were dissatisfied with information received in hospital and after hospital discharge. On the other hand, IPC or patient characteristics had no statistical differences in terms of satisfaction with information. Perhaps satisfaction depended more on casual factors related to the patient, staff or care than patient characteristics. The main point in IPC was depressive symptoms, even if possibilities of seeking psychiatric help were presented. In general, the result that more activity, control and responsibility on the part of professionals was desired after hospital discharge is in line with previous studies (Wright 2001, Suhonen et al. 2005, 2006, Oterhals et al. 2006).

Supporting and inhibiting factors in recovery experienced by the patients after myocardial infarction

Patients are the best experts to recount their experiences of their illness to professionals. Supporting and inhibiting factors in recovery experienced by the patients after myocardial infarction describe Finnish circumstances, while the majority of previous studies of this topic are international. The hypothesis, which was set up based on the literature review, that the recovery experienced by the patient after myocardial infarction is a multidimensional concept and phenomenon, was tested. Clinical and physical, psychological, social, functional and professional main categories and their sub-categories involved a lot of individually varied supporting and inhibiting factors, which supported this hypothesis. The results of supporting and inhibiting factors in recovery do not seem to differ dramatically from previous Western studies, which have indicated similar components. International studies have reported for example problems with convalescence (Dixon et al. 2000), emotional distress (Robinson 1999, Ayers et al. 2009), the importance of social relations (Al-Hassan & Sagr 2001, Hutton & Perkins 2008), the significance of physical activities (Dixon et al. 2000) and the importance of activity and knowledge from health care services (Jensen & Petersson 2003), which could also be incorporated in the main categories.

Recovery experienced by the patients consisted of many supporting and inhibiting factors individually, as reported before (McInnes 2006, Hogg et al. 2007). The subcategories clarify on a more concrete level just how complicated a phenomenon recovery experienced by patients after MI is. The results that were similar in the data of diaries and interviews were identified as supporting and inhibiting factors in all main categories. MI patients had many diseases and different symptoms during the 18-month follow-up, even though many were still working. The psychological aspects are important for individuals in recovery. In addition, psychological recovery takes a long time (Riegel 1993, Rowan et al. 2005, Green et al. 2009). Close relatives are also very essential after MI. Considering the number of patients, the importance of functional factors seems to decrease during the recovery process. They may become self-evident during a successful recovery process. Conversely, supporting and inhibiting factors related to health care professionals are still important and strongly emotional for patients 18 months after MI. Supporting and inhibiting factors of the professional category may remain in the minds of patients with great significance.

The recovery itself leads to changes in experience. Supporting and inhibiting factors in recovery after MI were not different between the patients with IPC intervention and the patients receiving standard care. Our hypothesis was that IPC has an effects on depressive symptoms throughout recovery, but not necessary on supporting and inhibiting factors in recovery after MI. However, quantification of supporting and inhibiting factors might perhaps help in finding some possible guidelines towards improved recovery and topics for more specific studies.

6.3 Conclusions

As an intervention that seems to be accepted by patients, IPC is an effective way to decrease depressive symptoms after MI. In addition, IPC had positive effects on distress among patients under 60 years. IPC seems to have indirect benefits on HRQOL with younger patients, but not with all patients after MI, as HRQOL improves spontaneously in the long term. The tentative and suggestive result that IPC patients use less specialized health care services after MI would be significant in many ways if the result were verified and demonstrated in the other studies with larger samples. After MI not all patients are satisfied with the information received from professionals. A number of various supporting and inhibiting factors in recovery after MI indicates that recovery is an individual and complex process in both a positive and negative sense. This is challenging for health care system.

6.4 Clinical implications

The results of this study strengthened the perception that more nurses in primary care should train to specialize in depression care (Käypä hoito -suositus 2004). In Finland, the national KASTE project determines and specifies essential and fundamental goals and the actions for reaching them in developing social and health care. The comprehensive programme presents mental health problems as one main object by 2011 that needs to be addressed on time from the perspective of individual citizens. (Sosiaali- ja terveysministeriö 2008a.) The goal of another national project, MASTO, is to reduce work disablement caused by depression. It is directed to all working-age citizens. The policy consists for example of prevention, early diagnosis and treatment including effective and evidence-based interventions, and rehabilitation for depression. More effective interventions are needed that are practical to carry out. (Sosiaali- ja terveysministeriö 2008b.) MI as well as depression is a great issue for health care system and nursing practice. Depression in association with CAD and MI has been recognized to be a significant problem, with care and cure not at the optimal level. An intervention focussing on depressive symptoms preventively as well as on the early phases in association a notable and very prevalent disease complies excellently with the spirit and aims of these projects. Instead of early retirement, a great number of younger MI patients today have many years of working life left.

In the practical setting, there is a need for mental health perspective in the somatic wards as part of comprehensive nursing practice. Screening for depression after MI should be a routine part of treatment. The national plan for mental health and substance abuse 2009-2015 focuses on strengthening the status of the client, enhancing efforts to promote mental health and abstinence from intoxicants and to prevent problems and adverse effects, and developing the service system to focus on outpatient services and basic services while ensuring that both mental health and substance abuse problems are considered at the same time (Terveyden ja hyvinvoinnin laitos 2010). This study and its results are congruent with this mindset and perceptions, even if in other circumstances. Even though the intervention nurse was a psychiatric nurse, the learning process as well as education of IPC and modifying its structure to a practical nursing setting is quite clear and easy. Counselling interventions or integrating psychological aspects as a systematic part of care after MI is possible for nurses in somatic care, too. Patients seem to be ready to discuss their depressive feelings. They are aware of the limited duration of the intervention, and this is a signal that work must begin immediately. Only two patients did not want more than one session (mean 4.6), after which the nurse was no longer needed. The content of IPC was structured, but also flexible. It was thus possible for patients to discuss more varied topics than depressive symptoms and distress while participating in counselling. IPC is quite a natural way to have a mental health perspective in somatic care. It is easy for patients to admit that MI relates to changes in mood and interpersonal relations, as reported even by non-depressive patients.

Considering depressive symptoms or distress, the result indicates that IPC probable has benefits in clinical nursing after MI. The results also encourages taking notice of depressive symptoms after MI on individual, ward, clinic and health care system level. Routine screening for depression as well as counselling related to depressive symptoms ought to be a natural part of care after MI in hospital and afterwards. Of course, this requires efficient co-operation between specialized health care and primary health care services. It is possible to reduce depression after MI, and it would have many positive ramifications from the perspective of the patient and the health care system. Care after MI also needs to pay attention to information offering for all MI patients, many of whom call for more control and active support from professionals. On the administrative level and in developing clinical pathways, there is a trend in Finnish psychiatric care to minimize treatment in hospital. At the same time, resources are concentrated and focused on outpatient care, which is more often emphasized as a primary care service. Furthermore, psychiatric wards are placed together with somatic hospitals. (Mental Health Act. 1990, Ministry of Social Affairs and Health 2009.) This reform is supported by the benefits of IPC as a psychiatric intervention for somatic patients who normally get along well. The utilization of psychiatric expertise near somatic wards includes possibilities - besides direct patient care - for consultation, education, clinical supervision and other possible help from psychiatry to somatic care, and vice versa. Co-operation between all levels is important in education as well in developing care. Furthermore, on administration level, the care paths after myocardial infarction should be developed aiming at integration and collaboration between different actors. It is a great challenge for leadership to reach a shared understanding and functioning standard of activity, for example between policy-makers and actors in primary and specialized health care. The result that during some of the follow-up period, there was less use of specialized health care services in the IPC group, as well as among patients in the IPC group who had no other long-term disease in IPC group, is interesting. The high cost of specialized health care is an important reason for increasingly organizing health services as part of primary care. Consultative liaison nursing has been one way of recognizing and addressing psychiatric problems in somatic care that enables patients to have access to care and cure at the right time in the right place (Badger et al. 2004a, 2004b). IPC is a structured and easy-to-learn intervention, but it is also adjustable for further development based on patients' individual needs, such as patient characteristics. This study attempted to find the network of services used by patients for further studies aimed at developing nursing practice in co-operation with somatic and psychiatric care. From the perspective of psychiatric care, improvement and development of consultative liaison nursing might go ahead if we had evidence of the economical and administrative benefits of IPC, in addition to its psychological benefits for the patient.

The results of this study indicate that the recovery experienced by patients after MI is multidimensional, consisting of many kinds of supporting and inhibiting factors, which poses challenges to the health care system and nursing practice. More attention must be paid in nursing practice to counselling and developing care after MI from the perspective of patients' individual needs. In a worldwide perspective, there are many opportunities to improve care after MI. When developing and carrying out new nursing interventions, it is important to examine systematically the attitudes, the points of view and experiences of the patients, in addition to actual outcome measurements. The results of recovery after MI pointed out the consequences of the long-term nature of psychological inhibiting factors and the need to take spouses and close relatives into consideration in implementation of care and information. The supporting and inhibiting factors that emerged indicated patients' perspective on a concrete level, and indicated very different kinds of factors. In the middle of busy everyday nursing practice, it is nevertheless worth using a few minutes of working time to discuss a patient's personal needs and feelings. Actually, this should be a part of high-quality care.

6.5 Suggestions for future research

On the basis of previous literature review, there is a lack of nursing research on patients in the area of internal medicine. In general, more intervention and multidisciplinary nursing studies are also needed. In this chapter, the suggestions for further research consist of topics and ideas that apply to outcomes of interpersonal counselling and recovery experienced by the patients. Consequently, be based on the results, personal experiences and learning process of this study the following aspects for further research are presented:

1. Outcomes of interpersonal counselling

a) More IPC intervention studies on MI patients are needed. Depressive and not depressive patients should be studied separately to gain a better understanding of the role of IPC after MI. Furthermore, the outcomes of IPC on HRQOL could also be studied with another instrument. In addition, the outcomes of IPC on the use of health care services after MI should focus on a design with a precisely defined number of visits and costs to assess the effects on health care services. If further studies with larger samples support this finding, using the nursing intervention as part of standard care modified for depression could also be argued from the point of view of economy, with the aim of avoiding adverse selection in the use of health care services after MI.

b) The outcomes of IPC should be studied separately among younger and older MI patients, as indicated by the results concerning distress and HRQOL. IPC should be developed further and its efficacy should be tested in the context of elderly patients after MI in general, and on the outcomes measures of this study. In addition, developing IPC especially for younger MI patients could be justifiable, because the IPC had especially effects on distress and HRQOL among younger patients.

c) More evidence is needed on the outcomes of IPC on depressive symptoms in other somatic patient groups, as depression is prevalent in many somatic disease patients groups.

d) From the viewpoint of health policy, the outcome measures of this study after MI also call for other intervention research perspectives.

e) More nurse-led mini-intervention studies in general should be studied in nursing practice.

2. Recovery experienced by the patients after myocardial infarction

a) The supporting and inhibiting factors and the subcategories in the main categories created in this study call for more specific topics. Detailed and in-depth studies are needed to identify issues in need of development in nursing practice. For example, factors such as hope or fear after MI could be a topic for further research.

b) Supporting and inhibiting factors in recovery after MI could be useful material in developing and testing a quantitative instrument for more precise measuring of recovery after MI in a randomized setting. A new diagnostic instrument for nursing practice would be a research topic with clinical value.

c) The results also indicate many important topics experienced by the patients for studies of recovery after MI. Many validated questionnaires already exist, for example for psychiatric symptoms or psychological recovery.

d) To develop theory, it is worth examining the relationships of supporting and inhibiting factors in recovery after MI. There are numerous possibilities to test relationships between supporting and inhibiting factors, sub-categories and main categories as well as their associations to patient characteristics. For example, gender specific research could be valuable from the viewpoint of developing the theory for utilizing in nursing practice.

3. Health care system

The focus of this study was on clinical nursing practice, but the results encourage widening the research perspective to nursing administration and educational level. Today, patient education and counselling have an important role in developing nursing practice and care paths, and the outcomes of mini-interventions clarify the possibilities in the real world in nursing practice. In co-operation between hospital administration, different actors in health care and nursing education, studies carried out by nursing students could effectively reveal scientific knowledge towards evidence-based nursing practice.

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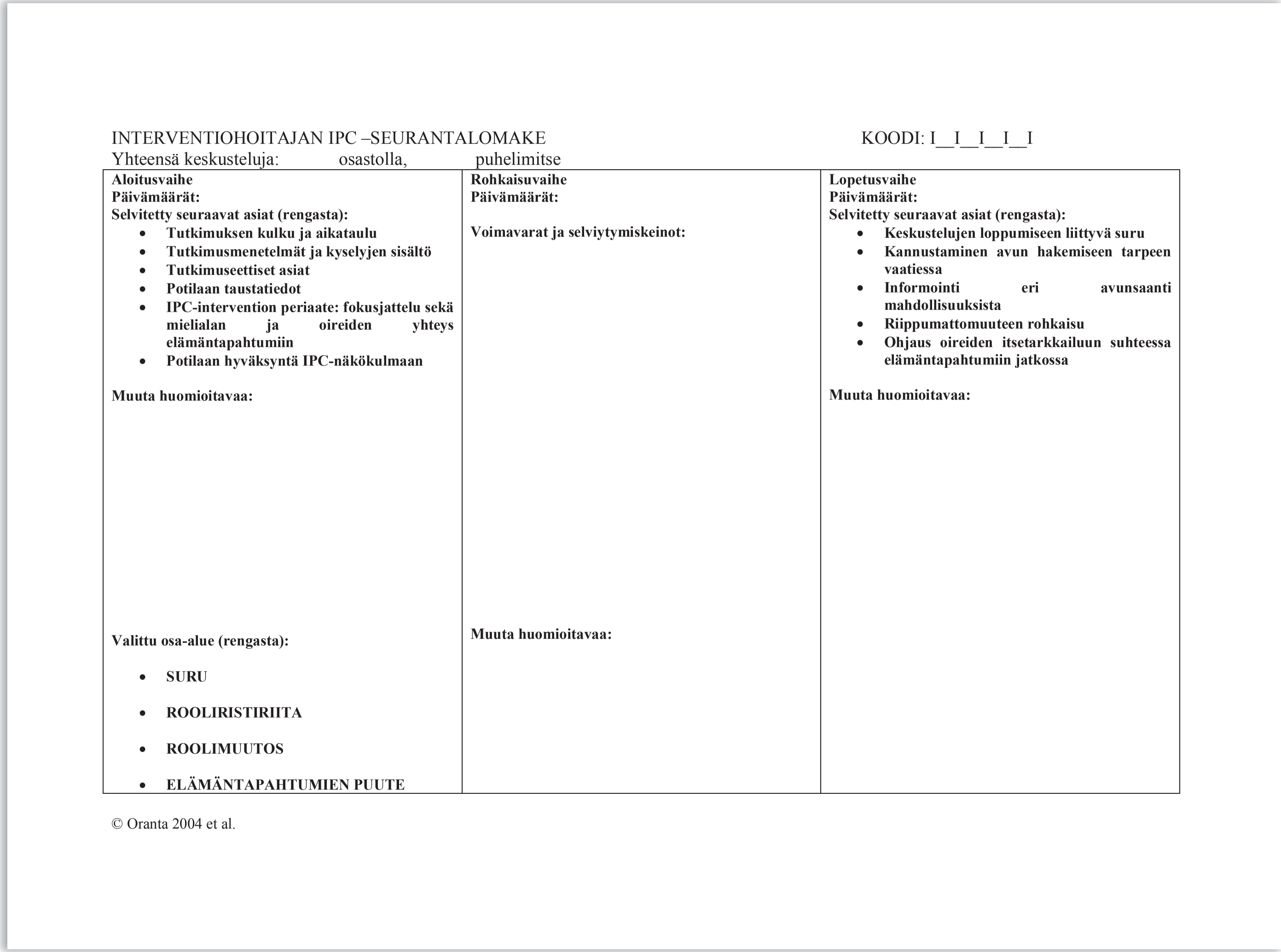
APPENDICES

Appendix 1. Intervention monitoring form



INTERVENTIOHOITAJAN IPC –SEURANTALOMAKE KOODI: I__I__I__I__I

Yhteensä keskusteluja: osastolla, puhelimitse

Aloitusvaihe **Päivämäärät:** **Selvitetty seuraavat asiat (rengasta):** • **Tutkimuksen kulku ja aikataulu** • **Tutkimusmenetelmät ja kyselyjen sisältö** • **Tutkimuseettiset asiat** • **Potilaan taustatiedot** • **IPC-intervention periaate: fokusjattelu sekä mielialan ja oireiden yhteys elämäntapahtumiin** • **Potilaan hyväksyntä IPC-näkökulmaan** **Muuta huomioitavaa:** **Valittu osa-alue (rengasta):** • **SURU** • **ROOLIRISTIRIITA** • **ROOLIMUUTOS** • **ELÄMÄNTAPAHTUMIEN PUUTE**	**Rohkaisuvaihe** **Päivämäärät:** **Voimavarat ja selviytymiskeinot:** **Muuta huomioitavaa:**	**Lopetusvaihe** **Päivämäärät:** **Selvitetty seuraavat asiat (rengasta):** • **Keskustelujen loppumiseen liittyvä suru** • **Kannustaminen avun hakemiseen tarpeen vaatiessa** • **Informointi eri avunsaanti mahdollisuuksista** • **Riippumattomuuteen rohkaisu** • **Ohjaus oireiden itsetarkkailuun suhteessa elämäntapahtumiin jatkossa** **Muuta huomioitavaa:**

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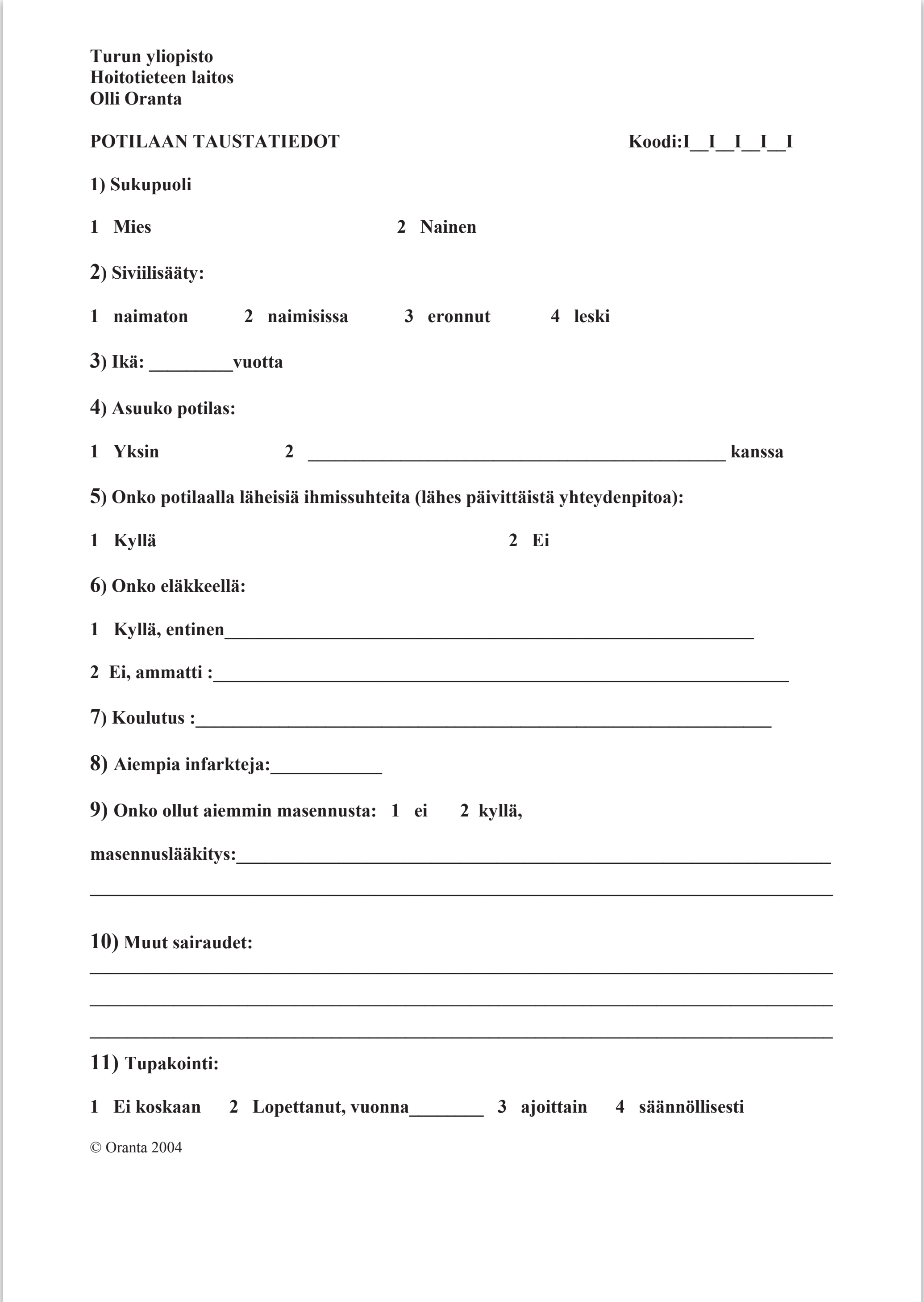
Appendix 2. Patient characteristics form



Turun yliopisto
Hoitotieteen laitos
Olli Oranta

POTILAAN TAUSTATIEDOT **Koodi:I__I__I__I__I**

1) Sukupuoli

1 Mies **2 Nainen**

2) Siviilisääty:

1 naimaton **2 naimisissa** **3 eronnut** **4 leski**

3) Ikä: _________vuotta

4) Asuuko potilas:

1 Yksin **2 ____ kanssa**

5) Onko potilaalla läheisiä ihmissuhteita (lähes päivittäistä yhteydenpitoa):

1 Kyllä **2 Ei**

6) Onko eläkkeellä:

1 Kyllä, entinen____

2 Ei, ammatti :____

7) Koulutus :____

8) Aiempia infarkteja:____________

9) Onko ollut aiemmin masennusta: 1 ei 2 kyllä,

masennuslääkitys:____

____

10) Muut sairaudet:

____

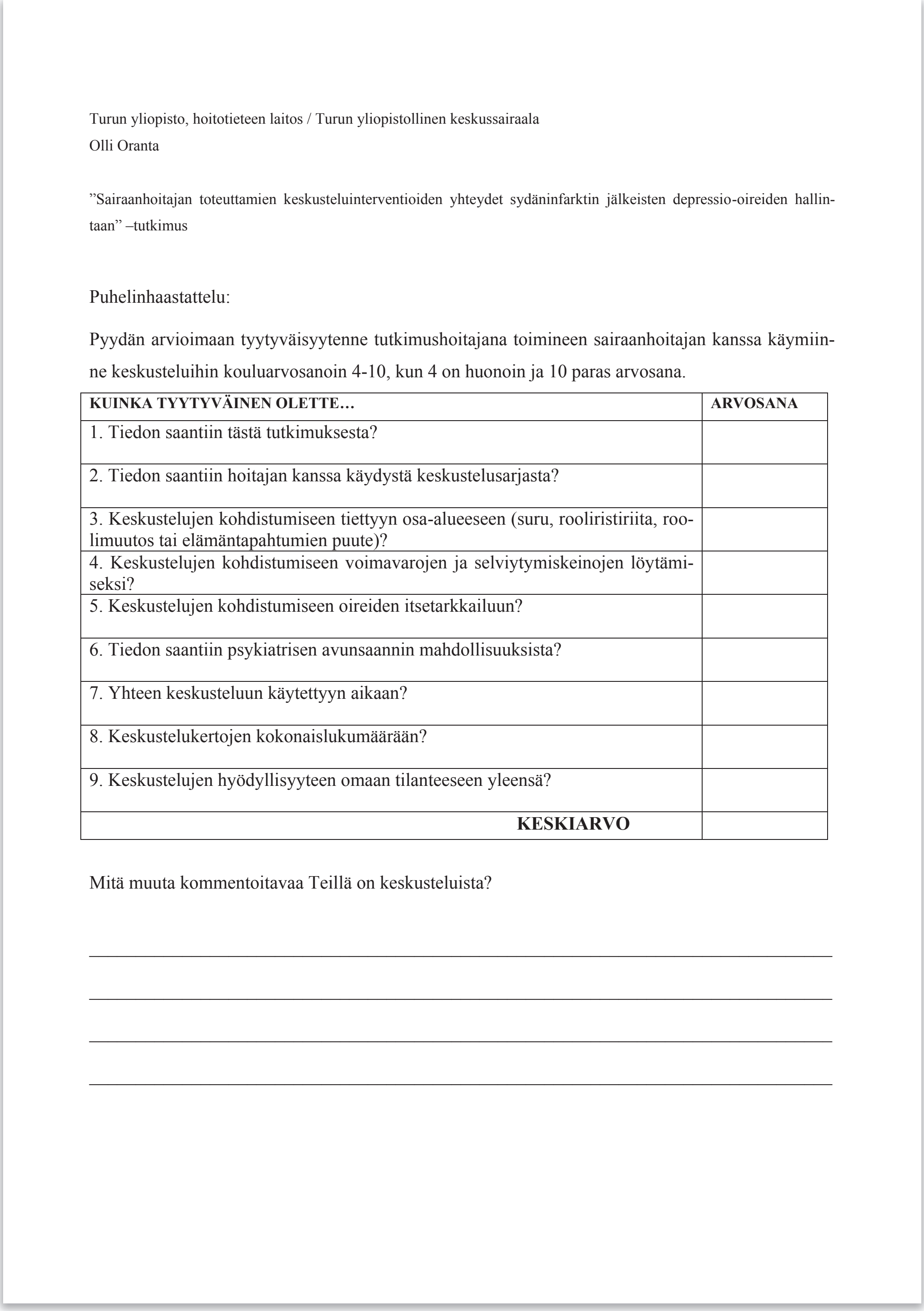
____

____

11) Tupakointi:

1 Ei koskaan **2 Lopettanut, vuonna________** **3 ajoittain** **4 säännöllisesti**

Appendix 3. Satisfaction with intervention monitoring form



Turun yliopisto, hoitotieteen laitos / Turun yliopistollinen keskussairaala
Olli Oranta

”Sairaanhoitajan toteuttamien keskusteluinterventioiden yhteydet sydäninfarktin jälkeisten depressio-oireiden hallintaan” –tutkimus

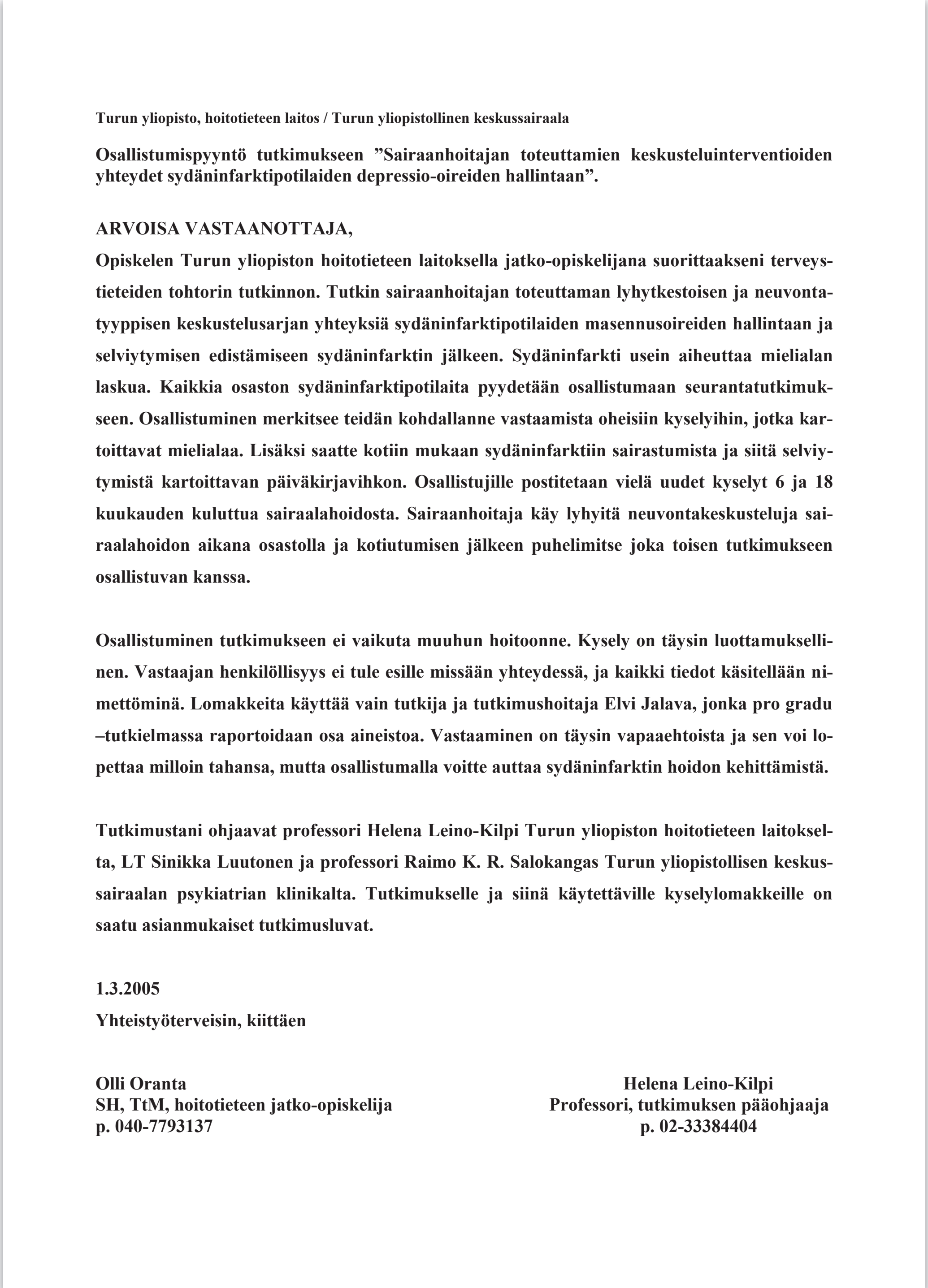
Puhelinhaastattelu:

Pyydän arvioimaan tyytyväisyytenne tutkimushoitajana toimineen sairaanhoitajan kanssa käymiinne keskusteluihin kouluarvosanoin 4-10, kun 4 on huonoin ja 10 paras arvosana.

KUINKA TYYTYVÄINEN OLETTE…	**ARVOSANA**
1. Tiedon saantiin tästä tutkimuksesta?	
2. Tiedon saantiin hoitajan kanssa käydystä keskustelusarjasta?	
3. Keskustelujen kohdistumiseen tiettyyn osa-alueeseen (suru, rooliristiriita, roolimuutos tai elämäntapahtumien puute)?	
4. Keskustelujen kohdistumiseen voimavarojen ja selviytymiskeinojen löytämiseksi?	
5. Keskustelujen kohdistumiseen oireiden itsetarkkailuun?	
6. Tiedon saantiin psykiatrisen avunsaannin mahdollisuuksista?	
7. Yhteen keskusteluun käytettyyn aikaan?	
8. Keskustelukertojen kokonaislukumäärään?	
9. Keskustelujen hyödyllisyyteen omaan tilanteeseen yleensä?	
KESKIARVO	

Mitä muuta kommentoitavaa Teillä on keskusteluista?

Appendix 4. Cover letter in hospital



Turun yliopisto, hoitotieteen laitos / Turun yliopistollinen keskussairaala

Osallistumispyyntö tutkimukseen ”Sairaanhoitajan toteuttamien keskusteluinterventioiden yhteydet sydäninfarktipotilaiden depressio-oireiden hallintaan”.

ARVOISA VASTAANOTTAJA,

Opiskelen Turun yliopiston hoitotieteen laitoksella jatko-opiskelijana suorittaakseni terveystieteiden tohtorin tutkinnon. Tutkin sairaanhoitajan toteuttaman lyhytkestoisen ja neuvontatyyppisen keskustelusarjan yhteyksiä sydäninfarktipotilaiden masennusoireiden hallintaan ja selviytymisen edistämiseen sydäninfarktin jälkeen. Sydäninfarkti usein aiheuttaa mielialan laskua. Kaikkia osaston sydäninfarktipotilaita pyydetään osallistumaan seurantatutkimukseen. Osallistuminen merkitsee teidän kohdallanne vastaamista oheisiin kyselyihin, jotka kartoittavat mielialaa. Lisäksi saatte kotiin mukaan sydäninfarktiin sairastumista ja siitä selviytymistä kartoittavan päiväkirjavihkon. Osallistujille postitetaan vielä uudet kyselyt 6 ja 18 kuukauden kuluttua sairaalahoidosta. Sairaanhoitaja käy lyhyitä neuvontakeskusteluja sairaalahoidon aikana osastolla ja kotiutumisen jälkeen puhelimitse joka toisen tutkimukseen osallistuvan kanssa.

Osallistuminen tutkimukseen ei vaikuta muuhun hoitoonne. Kysely on täysin luottamuksellinen. Vastaajan henkilöllisyys ei tule esille missään yhteydessä, ja kaikki tiedot käsitellään nimettöminä. Lomakkeita käyttää vain tutkija ja tutkimushoitaja Elvi Jalava, jonka pro gradu –tutkielmassa raportoidaan osa aineistoa. Vastaaminen on täysin vapaaehtoista ja sen voi lopettaa milloin tahansa, mutta osallistumalla voitte auttaa sydäninfarktin hoidon kehittämistä.

Tutkimustani ohjaavat professori Helena Leino-Kilpi Turun yliopiston hoitotieteen laitokselta, LT Sinikka Luutonen ja professori Raimo K. R. Salokangas Turun yliopistollisen keskussairaalan psykiatrian klinikalta. Tutkimukselle ja siinä käytettäville kyselylomakkeille on saatu asianmukaiset tutkimusluvat.

1.3.2005

Yhteistyöterveisin, kiittäen

Olli Oranta	**Helena Leino-Kilpi**
SH, TtM, hoitotieteen jatko-opiskelija	**Professori, tutkimuksen pääohjaaja**
p. 040-7793137	**p. 02-33384404**

Appendix 5. Informed consent form

Turun yliopisto / Turun yliopistollinen keskussairaala
Hoitotieteen laitos
Sairaanhoitajan toteuttamien keskusteluinterventioiden yhteydet sydäninfarktin jälkeisten masennusoireiden hallintaan
Olli Oranta

SUOSTUMUS TUTKIMUKSEEN OSALLISTUMISESTA

Täten vakuutan, että olen saanut kaiken itselleni tarpeellisen tiedon TtM Olli Orannan tutkimuksesta ja siihen osallistumisesta. Olen tietoinen, että voin halutessani keskeyttää tutkimuksen. Suostun osallistumaan tutkimukseen, ja mikäli olen mukana seurantatutkimuksessa, annan luvan käyttää potilasasiakirjojani tietoja muiden sairauksieni ja tämän hetken lääkitykseni osalta.

NIMI:____

OSOITE (tarvitaan, jotta Teille voidaan postittaa sairaalahoidon jälkeen kyselylomakkeita):____

____

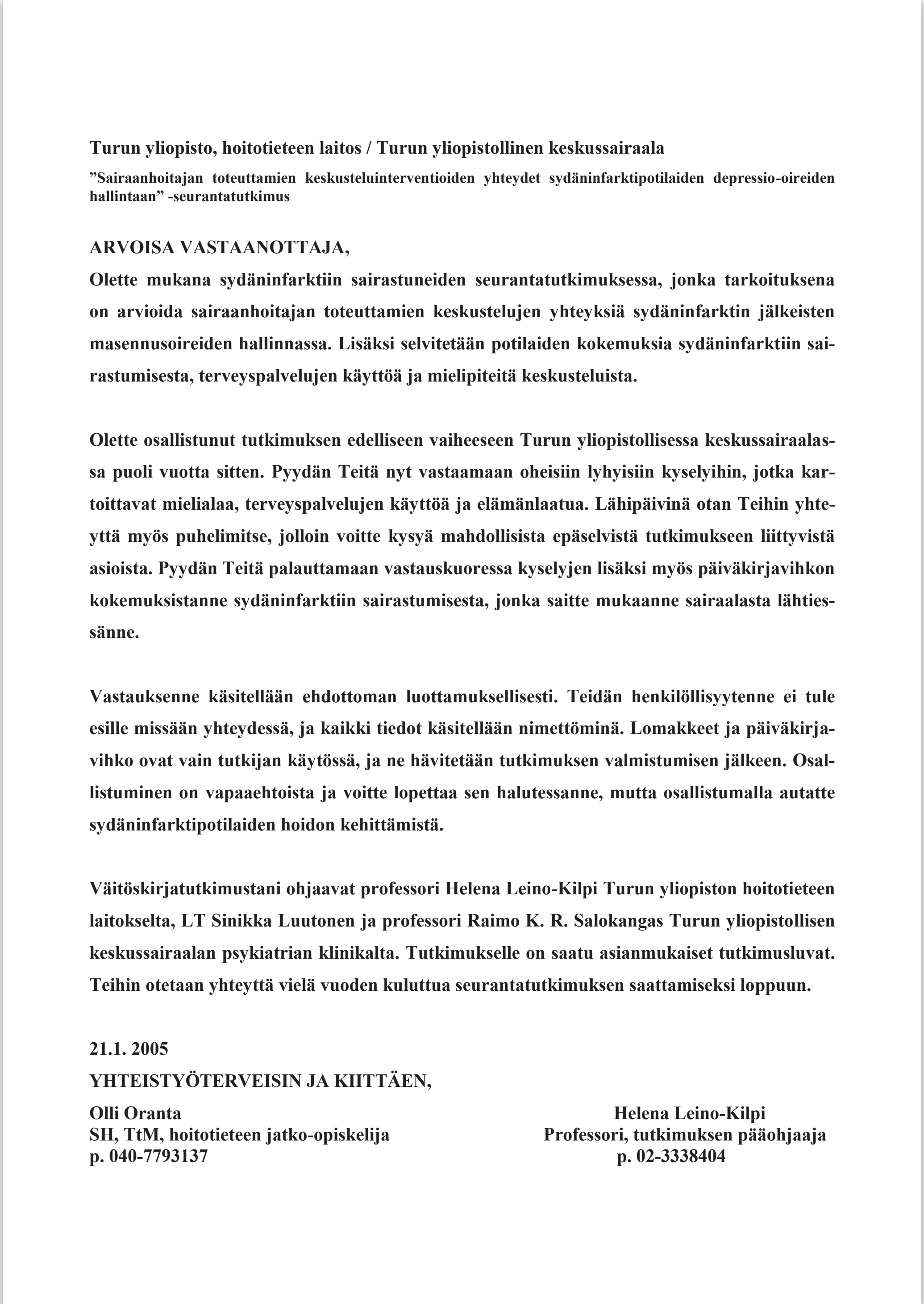
PUHELIN:__________________________

Päiväys:___/___200__

ALLEKIRJOITUS:______________________________________

Nimen selvennys

Appendix 6. Cover letter at 6 months after discharge



Turun yliopisto, hoitotieteen laitos / Turun yliopistollinen keskussairaala

”Sairaanhoitajan toteuttamien keskusteluinterventioiden yhteydet sydäninfarktipotilaiden depressio-oireiden hallintaan” -seurantatutkimus

ARVOISA VASTAANOTTAJA,

Olette mukana sydäninfarktiin sairastuneiden seurantatutkimuksessa, jonka tarkoituksena on arvioida sairaanhoitajan toteuttamien keskustelujen yhteyksiä sydäninfarktin jälkeisten masennusoireiden hallinnassa. Lisäksi selvitetään potilaiden kokemuksia sydäninfarktiin sairastumisesta, terveyspalvelujen käyttöä ja mielipiteitä keskusteluista.

Olette osallistunut tutkimuksen edelliseen vaiheeseen Turun yliopistollisessa keskussairaalassa puoli vuotta sitten. Pyydän Teitä nyt vastaamaan oheisiin lyhyisiin kyselyihin, jotka kartoittavat mielialaa, terveyspalvelujen käyttöä ja elämänlaatua. Lähipäivinä otan Teihin yhteyttä myös puhelimitse, jolloin voitte kysyä mahdollisista epäselvistä tutkimukseen liittyvistä asioista. Pyydän Teitä palauttamaan vastauskuoressa kyselyjen lisäksi myös päiväkirjavihkon kokemuksistanne sydäninfarktiin sairastumisesta, jonka saitte mukaanne sairaalasta lähtiessänne.

Vastauksenne käsitellään ehdottoman luottamuksellisesti. Teidän henkilöllisyytenne ei tule esille missään yhteydessä, ja kaikki tiedot käsitellään nimettöminä. Lomakkeet ja päiväkirjavihko ovat vain tutkijan käytössä, ja ne hävitetään tutkimuksen valmistumisen jälkeen. Osallistuminen on vapaaehtoista ja voitte lopettaa sen halutessanne, mutta osallistumalla autatte sydäninfarktipotilaiden hoidon kehittämistä.

Väitöskirjatutkimustani ohjaavat professori Helena Leino-Kilpi Turun yliopiston hoitotieteen laitokselta, LT Sinikka Luutonen ja professori Raimo K. R. Salokangas Turun yliopistollisen keskussairaalan psykiatrian klinikalta. Tutkimukselle on saatu asianmukaiset tutkimusluvat. Teihin otetaan yhteyttä vielä vuoden kuluttua seurantatutkimuksen saattamiseksi loppuun.

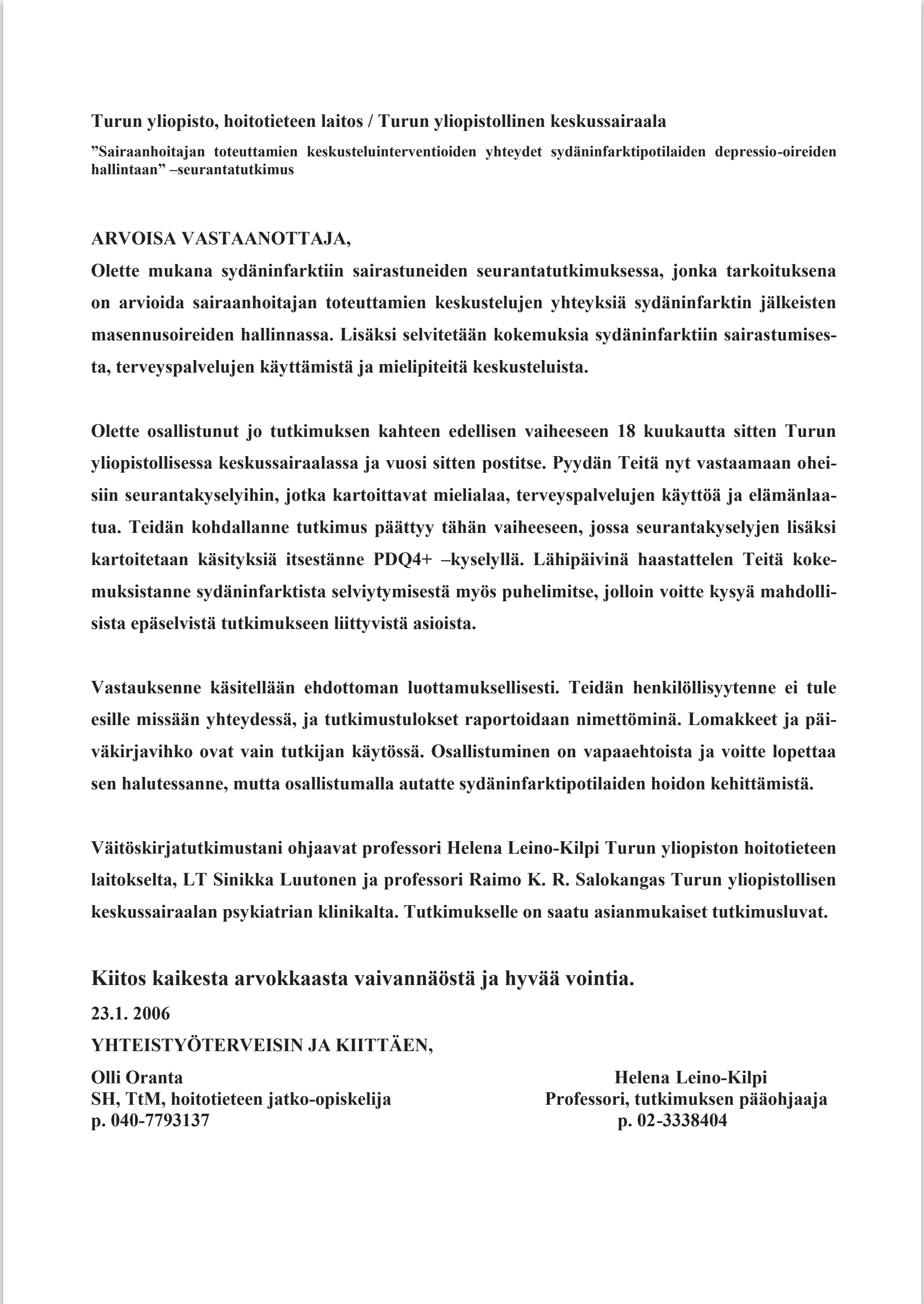
21.1. 2005

YHTEISTYÖTERVEISIN JA KIITTÄEN,

Olli Oranta
SH, TtM, hoitotieteen jatko-opiskelija
p. 040-7793137

Helena Leino-Kilpi
Professori, tutkimuksen pääohjaaja
p. 02-3338404

Appendix 7. Cover letter at 18 months after discharge



Turun yliopisto, hoitotieteen laitos / Turun yliopistollinen keskussairaala

”Sairaanhoitajan toteuttamien keskusteluinterventioiden yhteydet sydäninfarktipotilaiden depressio-oireiden hallintaan” –seurantatutkimus

ARVOISA VASTAANOTTAJA,

Olette mukana sydäninfarktiin sairastuneiden seurantatutkimuksessa, jonka tarkoituksena on arvioida sairaanhoitajan toteuttamien keskustelujen yhteyksiä sydäninfarktin jälkeisten masennusoireiden hallinnassa. Lisäksi selvitetään kokemuksia sydäninfarktiin sairastumisesta, terveyspalvelujen käyttämistä ja mielipiteitä keskusteluista.

Olette osallistunut jo tutkimuksen kahteen edellisen vaiheeseen 18 kuukautta sitten Turun yliopistollisessa keskussairaalassa ja vuosi sitten postitse. Pyydän Teitä nyt vastaamaan oheisiin seurantakyselyihin, jotka kartoittavat mielialaa, terveyspalvelujen käyttöä ja elämänlaatua. Teidän kohdallanne tutkimus päättyy tähän vaiheeseen, jossa seurantakyselyjen lisäksi kartoitetaan käsityksiä itsestänne PDQ4+ –kyselyllä. Lähipäivinä haastattelen Teitä kokemuksistanne sydäninfarktista selviytymisestä myös puhelimitse, jolloin voitte kysyä mahdollisista epäselvistä tutkimukseen liittyvistä asioista.

Vastauksenne käsitellään ehdottoman luottamuksellisesti. Teidän henkilöllisyytenne ei tule esille missään yhteydessä, ja tutkimustulokset raportoidaan nimettöminä. Lomakkeet ja päiväkirjavihko ovat vain tutkijan käytössä. Osallistuminen on vapaaehtoista ja voitte lopettaa sen halutessanne, mutta osallistumalla autatte sydäninfarktipotilaiden hoidon kehittämistä.

Väitöskirjatutkimustani ohjaavat professori Helena Leino-Kilpi Turun yliopiston hoitotieteen laitokselta, LT Sinikka Luutonen ja professori Raimo K. R. Salokangas Turun yliopistollisen keskussairaalan psykiatrian klinikalta. Tutkimukselle on saatu asianmukaiset tutkimusluvat.

Kiitos kaikesta arvokkaasta vaivannäöstä ja hyvää vointia.

23.1. 2006

YHTEISTYÖTERVEISIN JA KIITTÄEN,

Olli Oranta	**Helena Leino-Kilpi**
SH, TtM, hoitotieteen jatko-opiskelija	**Professori, tutkimuksen pääohjaaja**
p. 040-7793137	**p. 02-3338404**