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IMPLEMENTING AN EVIDENCE-BASED HYPERTENSION GUIDELINE INTO FINNISH PRIMARY CARE NURSING

by

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ABSTRACT

The overall purpose of this study was to produce recommendations on how to facilitate the adoption of the evidence-based Current Care (CC) Guidelines into the out-patient services of Finnish primary care nursing. Phase I evaluated the extent and style of the Hypertension (HT) Guideline implementation in all Finnish health centres. Phase II assessed nurses' attitudes towards guidelines and their experiences of implementation. In phase III, nurses' views on important factors to adoption were evaluated.

According to chief executives, the HT Guideline was in use in the majority of Finnish health centres, but their views regarding the agreements on the implementation of the HT Guideline recommendations in their health centres differed in several aspects. Moreover, implementation styles varied. Health centres with opposite implementation styles were identified, and classified as disseminators and implementers. Disseminators utilized few or no implementation channels, whereas implementers utilized multiple channels.

Nurses' attitudes towards guidelines were highly positive; they believed them to be a reliable source of advice, and that they improved the quality of care. The local adaptation of guidelines and support from management and physicians was considered highly important to implementation, but in general, any type of intervention resulted in more positive attitudes and more active self-reported use of guidelines.

In conclusion, the CC Guidelines seem to be accepted in clinical nursing practices. To improve their adoption, attention should be paid to the local adaptation of guidelines and to defining the duties of professional groups. Support from chief executives and physicians is of utter importance.

Keywords: evidence-based guideline, hypertension, nursing, primary care

Seija Alanen

KOHONNEEN VERENPAINEEN HOITOSUOSITUKSEN KÄYTTÖÖNOTTO SUOMEN PERUSTERVEYDENHIOLLON HOITOTYÖSSÄ

Hoitotieteen laitos, Lääketieteellinen tiedekunta Turun yliopisto, Turku

TIIVISTELMÄ

Tutkimuksen tavoitteena oli tuottaa suosituksia näyttöön perustuvien Käypä hoito -suositusten käytön edistämiseksi perusterveydenhuollon hoitotyössä. Tutkimuksen ensimmäisessä vaiheessa arvioitiin Kohonneen verenpaineen hoitosuosituksen käyttöönottoa terveyskeskuksissa. Toisessa vaiheessa selvitettiin hoitajien hoitosuositusasenteita ja kokemuksia hoitosuosituksen käyttöönotosta. Kolmannessa vaiheessa selvitettiin hoitohenkilöstön näkemyksiä hoitosuosituksen käyttöä edistävistä tekijöistä.

Kohonneen verenpaineen hoitosuositus oli ylilääkäreiden ja ylihoitajien mukaan otettu käyttöön lähes kaikissa terveyskeskuksissa, mutta heidän näkemyksensä suositusten käyttöönottoa koskevista terveyskeskuksissa tehdyistä sopimuksista erosivat toisistaan monilta osin. Myös käyttöönoton toteutuksessa oli suurta vaihtelua terveyskeskusten välillä. Toteutustavan perusteella ääripäissä sijaitsevat terveyskeskukset luokiteltiin yksittäisin ja monin keinoin käyttöönottoa tukeneiksi.

Hoitajien hoitosuositusasenteet olivat hyvin myönteisiä ja hoitosuosituksia pidettiin luotettavina tiedonlähteinä, ja niiden uskottiin parantavan hoidon laatua. Hoitosuositusten paikallinen soveltaminen sekä johdon ja lääkäreiden tuki olivat hoitajien mielestä keskeisiä käyttöönotossa, vaikkakin tulosten mukaan kaikki käytetyt keinot olivat yhteydessä positiivisempiin hoitosuositusasenteisiin sekä aktiivisempaan hoitajien itsensä ilmaisemaan hoitosuositusten käyttöön.

Yhteenvetona voidaan todeta, että Käypä Hoito -suositukset on hyväksytty osaksi kliinistä hoitotyön käytäntöä. Niiden käytön tehostamiseksi tulisi kiinnittää huomiota suositusten paikalliseen soveltamiseen ja eri ammattiryhmien tehtäväkuvien määrittelyyn. Tähän tarvitaan terveyskeskusten johdon ja lääkäreiden selkeää tukea.

Avainsanat: näyttöön perustuva hoitosuositus, kohonnut verenpaine, hoitotyö, perusterveydenhuolto

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ABBREVIATIONS

CC Guideline	Current Care Guideline
ECCE	Evaluation of Current Care Effectiveness consortium
HT Guideline	Hypertension Guideline
UK	United Kingdom
USA	United States of America
RCT	Randomized Controlled Trial

LIST OF APPENDICES

LIST OF ORIGINAL PUBLICATIONS

This thesis is based on the following publications which are referred to in the text by the Roman numerals I – V:

I Alanen SI, Johannala-Kemppainen R, Ijäs JJ, Kaila M, Klockars M, Mäkelä M, Välimäki MA. 2007. Evaluation of current care effectiveness: A survey of hypertension guideline implementation in Finnish health centres. Scandinavian Journal of Primary Health Care 25: 232-236.

II Ijäs J, Alanen S, Kaila M, Ketola E, Nyberg S, Välimäki MA, Mäkelä M, for the ECCE study group. Primary care guidelines: Senior executives' views on changing health centre practices in hypertension treatment. Scandinavian Journal of Primary Health Care. Accepted 7.10.2008.

III Alanen S, Kaila M, Välimäki M, for the ECCE study group. Attitudes towards guidelines in Finnish primary care nursing: a questionnaire survey. Resubmitted.

IV Alanen S, Ijäs J, Kaila M, Mäkelä M, Välimäki M. 2008. Hypertension guideline implementation: experiences of Finnish primary care nurses. Journal of Evaluation in Clinical Practice 14: 830-835.

V Alanen S, Välimäki M, Kaila M. Nurses' experiences of guideline implementation: a focus group study. Journal of Clinical Nursing. Accepted 23.10.2008.

1. INTRODUCTION

One of the challenges facing today's health care organizations is ensuring that patient care is safe, effective, and based on the best available evidence (Haines & Donald 2002, Ollenschlager et al. 2004, Ministry of Social Affairs and Health 2008a). However, it seems that a large gulf exists between what is regarded the best available evidence and what is actually practised (Bero et al. 1998, Davis et al. 2003, Grol & Grimshaw 2003, Butzlaff et al. 2006). Evidence-based clinical guidelines have been produced for over ten years almost all over the world in the hope of bridging this gulf (Cook et al. 1997, Bero et al. 1998, Effective Health Care 1999, Grimshaw et al. 2004, G-I-N 2008). The ultimate goal of these guidelines is to improve patient outcomes by reducing the variations in health care (Woolf 1992, Closs & Cheater 1999, Davis et al. 2003, Taylor & Allen 2007). Secondary goals are to update practitioners with new scientific evidence, to enhance quality assurance, to reduce the growing costs of health services, and to improve education (Evidence-based Medicine Working Group 1992, Haynes & Haines 1998, Norman 1999, Thorsen & Mäkelä 1999, French 2000, Swinkels et al. 2002, Miles et al. 2004, Murphy-Smith et al. 2004).

Evidence-based guidelines are usually developed by specialized national institutions, since this requires skills and other resources not available to individuals or single health care organizations (Ciliska et al. 2001, Ollenschlager et al. 2004). In Finland, the Finnish Medical Society Duodecim (2008) began the production of evidence-based clinical guidelines, the Current Care Guidelines (CC Guidelines), in 1994 under the auspices of the Ministry of Health and Social Welfare. The first one was published in 1997, and by the end of 2007, there were a total of 81 CC Guidelines available. These guidelines are intended for multidisciplinary use and are widely disseminated to various audiences (Ketola et al. 2004). In addition to these multidisciplinary guidelines, the Finnish Association for Nurses produce specific nursing guidelines in their 'Evidence-Based Nursing Project' (Suomen sairaanhoitajaliitto 2008). The first clinical practice guideline from this project; 'Identification of and intervention in child maltreatment', was published in the spring of 2008.

However, merely producing and disseminating guidelines does not seem to be sufficient to actually change professional practices; effective implementation strategies are needed to ensure their adoption (Cabana et al. 1999, Grol & Grimshaw 2003, Grimshaw et al. 2004). However, imperfect knowledge of the effectiveness of different implementation interventions makes the selection of an implementation strategy difficult (Cheater & Closs 1997, Bero et al. 1998, Grimshaw et al. 2004, Hakkennes & Dodd 2008). The problem seems to be that most interventions are effective under certain circumstances, but none are effective under all circumstances (Effective Health Care 1999, Grimshaw

et al. 2004). The context-specific effectiveness of implementation interventions indicates that the organizational and professional aspects of guideline implementation should be studied in more detail (Hawe et al. 2004, Wensing et al. 2006, Grol et al. 2007).

Research evidence on the implementation of the Finnish CC Guidelines in primary health care is scarce. There is some evidence that agreements on adopting the CC Guidelines into care practices in Finnish health centres were made as early as 2001 (Kaila et al. 2006), and that some existing treatment practices of some diseases are equivalent to the CC Guideline (Rautakorpi & Koskinen 2004, Klaukka et al. 2005). However, while physicians in primary care report being familiar with the CC Guidelines (Mäkinen et al. 2005, Kuronen et al. 2006, Jousilahti et al. 2007), nurses' knowledge of them is poor (Kuronen et al. 2006). Nevertheless, despite this, the general attitudes towards guidelines in both professionals' groups were positive (Kuronen et al. 2006). Knowledge does not exist of the interventions utilized to implement the guidelines, or of their impact on clinical practices in primary care.

The overall goal of this study was to assess the implementation of one particular CC Guideline - the Hypertension Guideline - in Finnish primary care. The focus was on the strategies utilized in the implementation of the HT Guideline in the clinical practices of health centre out-patient services, and on how the guideline recommendations are translated into practices. In order to evaluate the acceptance and utility of guidelines in nursing practices, the emphasis was on the viewpoint of nurses. Based on the findings of the studies, practical recommendations to enhance the implementation of guidelines are proposed.

This study was conducted as part of a larger research initiative by the Evaluation of Current Care Effectiveness (ECCE) consortium, which was established in 2003 to study the important factors of CC Guideline implementation. As such, it belongs to the sub-project established for evaluating the HT Guideline implementation, which was further divided into three studies conducted by three PhD students. The studies assess both the process and outcomes of guideline implementation from different viewpoints (those of chief executives, physicians, nurses, and patients). This sub-project was accepted as part of the Health Services Research programme launched by the Academy of Finland in 2003 (Academy of Finland 2008), which enabled intensive collaboration between PhD students and experienced researchers in the ECCE consortium.

The purpose of this study was mainly explorative and descriptive, as seemingly little was previously known of the implementation of the guideline into Finnish primary care nursing. However, in order to discover the most important factors of the guideline implementation, correlational research was also employed for assessing relationships between implementation interventions, attitudes towards guidelines, and the self-reported adoption of the guideline.

2. LITERATURE OVERVIEW

2.1 Evidence-based clinical guidelines

The concept 'evidence-based' has its origins in medicine, and was launched at the beginning of the 1990s (Institute of Medicine 1992, Woolf 1992). *Evidence-based medicine* (EBM) has been defined as "… the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients…evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research.*"* (Sackett et al. 1996, p. 71).

This concept was soon adopted into other disciplines allied to medicine (Thomas et al. 1999, Swinkels et al. 2002). The terms *evidence-based nursing (EBN)* and *evidence-based practice (EBP)* have been frequently used to emphasize the input of nursing science or multiple disciplines into the evidence base of treatment practices (Closs and Cheater 1999, Ciliska et al. 2001).

In the first phases of this evidence-based movement, the idea was that individual practitioners should develop the skills needed for searching for the best available evidence (Ghali & Sargious 2002). However, this kind of evidence-based practice soon proved to be an unrealistic assumption, due to the scarcity of time and skill resources of clinical practitioners (Haynes & Haines 1998, Norman 1999, Ghali & Sargious 2002). Thus EBP's 'doers' and 'users' remain as two separate groups; the 'doers' being important contributors to the creation of an evidence base, which can then be applied by the 'users' (Ghali & Sargious 2002).

Evidence-based clinical guidelines have been produced by several organizations for over ten years to help clinical practitioners access the best available evidence (Ollenschlager et al. 2004). They have become an integral part of EBP (Bassand et al. 2005, Taylor & Allen 2007) and are argued to be 'the best thing since sliced bread' (Miller & Kearney 2004, P. 814), since they attempt to distil a large body of expertise into a convenient, readily usable format (Cook et al. 1997). Evidence-based clinical guidelines should be distinguished from other guidelines, protocols or standards, which are more authoritative statements, not based on rigorous research evidence (Strohschein et al. 1999, Miller & Kearney 2004). They are defined as "…systematically developed statements to assist practitioner and patient decisions about appropriate health care." (Institute of Medicine 1992, p. 2).

As stated in the definition, guidelines are intended to assist in decision-making, not to determine how to act or to substitute clinical expertise (Sackett et al. 1996, Colyer & Kamath 1999, Parker 2002). Clinical expertise will always be needed, since guidelines reveal nothing of patient's preferences, which are essential in clinical decision-making in order to ensure patient adherence to recommended treatment (Closs & Cheater 1999,

Parker 2002). Clinical expertise is also important when patients have several diseases with conflicting treatment options or do not respond to treatment recommended in guidelines (Bradshaw 2000, Parker 2002, Geanellos 2004). Thus, evidence-based clinical guidelines should always be seen as aids or tools which can help practitioners in decision-making, but not substitute them.

In the context of evidence-based guidelines, the term 'evidence' refers to the results of well-designed clinical studies (Upshur 2002, Gupta 2003). This evidence is constituted during a process which involves the conversion of an answerable question, a search for the best available evidence, a critical evaluation of the evidence, and the application of the results in clinical practice (Sackett & Haynes 1995). The best available evidence in this context is ranked by the research methods used in such a way that randomized controlled trials are at the top of the evidence hierarchy, while unsystematic clinical observations lie at the bottom (Norman 1999, Gupta 2003).

Despite the seemingly wide acceptance of the benefits of evidence-based practice, the best available evidence has often been a target of criticism, since it includes several sources of potential bias. First, the sources of research funding favour studies that are likely to have commercial value (Norman 1999, Parker 2002, Gupta 2003). Second, technical bias favours research that we already know how to carry out (Gupta 2003). Third, publication bias favours publications with positive and/or statistically significant results (Norman 1999, Gupta 2003). Fourth, negative evidence is not distinguished from a lack of evidence, which means that no studies have been conducted (Geanellos 2004, Howland 2007). Fifth, evidence is argued to ignore clinical judgement and experience, and fosters an inappropriate reliance on epidemiology and statistical methodology, in particular a dogmatic adherence to randomized control trials (Bradshaw 2000, Upshur 2002, Geanellos 2004).

The criticism against guidelines, particularly that concerning the lack of evidence on topics essential to nursing practices (Bradshaw 2000, Geanellos 2004, Rycroft-Malone et al. 2004, Taylor & Allen 2007), as well as the ignorance of clinical experience (Bradshaw 2000, Swinkels et al. 2002, Hewitt-Taylor 2003, Rycroft-Malone et al. 2004, Flynn & Sinclair 2005) has been widely discussed among nursing scholars. The applicability of guidelines targeted towards multiprofessional use in nursing practices has also been questioned (Miller & Kearney 2004). On the other hand, it has been stated that evidence-based practice does not devalue an individual nurse's skills, but provides her/him with the best available tool-kit for providing care. This enables nurses to work collaboratively with other health care professionals within a shared framework of understanding (Bonell 1999, Closs & Cheater 1999, French 2000, Miller & Kearney 2004).

In conclusion, it can be argued that the evidence in evidence-based guidelines does not constitute the truth - it *may* be true, but is not necessarily so, as pointed out by some scholars (Upshur 2002, Gupta 2003). The truth, however, is not the ultimate goal

of guidelines. They are, after all, merely systematically developed statements based on the best available evidence which should not be neglected, since other approaches to practice, called 'impressionist', 'eminence-based' practice (Bassand et al. 2005) 'common-sense' or 'faith-based' practice (Miles et al. 2004) are presumably even more of an approximation of the truth.

2.2 Current Care Hypertension Guideline

Both national and international programmes with evidence-based clinical guidelines have been launched to improve the treatment of hypertension, which has not been of a satisfactory level (Ketola et al. 2000a, Guidelines Committee 2003, Williams et al. 2004, Fretheim et al. 2006, Kastarinen et al. 2006, Midlöv et al. 2008). The main problems in the care of hypertensive patients, and thus the main messages in these hypertension guidelines, seem to be the same in every country (Oliveria et al. 2002, Williams et al. 2004, Adair et al. 2005, Primatesta & Poulter 2006), namely the unsystematic identification and recording of cardiovascular risk factors (Ketola et al. 2000a, Langham et al. 2002, Sheerin et al. 2007), the tolerance of higher blood pressure levels than those recommended (Berlowitz et al. 1998, Oliveria et al. 2002, Williams et al. 2004, Midlöv et al. 2008), and ineffective patient counselling on important lifestyle changes in the treatment of hypertension (Lahdenperä & Kyngäs 1998, Ketola et al. 2000b, Takala et al. 2001, Hobbs & Erhardt 2002).

Despite the fact that hypertension care in Finland has improved over the last decades, the difference between the actual situation at population level, and the treatment goals is vast (Kastarinen et al. 2006). The achievement of treatment goals requires more attention, since hypertension is a major risk factor for cardiovascular diseases (Oliveria et al. 2002, Williams et al. 2004). Furthermore, since the prevalence of hypertension in Finland has been among the highest in Europe - in 2002, half of all men and a third of women were classified hypertensive (Wolf-Maier et al. 2003, Kastarinen et al. 2006) – it is clear that the HT Guideline is targeted towards a major health problem. Hypertension has also been the most common reason for special reimbursement for medication - at the end of 2007 over half a million people were entitled to reimbursements (The Social Insurance Institution of Finland 2008), and the financial burden for individuals and society in general is considerable.

The Finnish evidence-based Guideline on Hypertension was first published on November 22, 2001 in the series of Current Care Guidelines (The Finnish Medical Society of Duodecim 2008). The aims of the HT Guideline are to make the prevention, diagnosis, and treatment of hypertension more efficient and consistent, thus reducing cardio-vascular diseases, co-morbidity and mortality. It is targeted towards physicians and other health professionals who treat hypertensive patients in primary care, occupational health care, and specialized care (Kohonneen verenpaineen hoito 2001).

The main messages of the HT Guideline (Kohonneen verenpaineen hoito 2001, Kohonneen verenpaineen hoito 2005) include recommendations on the diagnostic and

measurement practices of hypertension, as well as the follow-up and lifestyle-guidance of hypertensive patients. Concerning measurement practices, the guideline states that (1) the diagnosis and choices of treatment options should be based on the mean value of two separate measurements of blood pressure, repeated at least four times in separate measures; that (2) measurements conducted by nurses or by patients themselves at home should be preferred, since blood pressure levels measured at physicians' appointments tend to be higher than normal; and that (3) hypertensive patients should undergo basic diagnostics tests and be evaluated for cardiovascular disease risk factors. Furthermore, (4) instructions must be given concerning the regular calibration of measures. Recommendations concerning follow-up practices include that (5) the target level of blood pressure should be defined; and that (6) this should be achieved through lifestyle changes, combined, if needed, with drugs; and that (7) follow-up frequency should be defined according to blood pressure balance and patients' other possible diseases. In addition, (8) an effort should always be made to reduce the overall risks of cardiovascular diseases by providing effective lifestyle guidance. The most significant modifiable and lifestyle-related risk factors for elevated blood pressure are overweight, high intake of sodium, high intake of alcohol, and physical inactivity.

Even though the HT Guideline contains clear instructions, such as those concerning measurement practices, it does not make a stand on the best way of arranging the treatment of hypertensive patients in different organizations. On the contrary, national CC Guidelines are intended to be locally or regionally adapted through organizational house rules or clinical pathways to the healthcare district, in which the responsibilities of different health care professionals are defined.

2.3 Implementation of clinical guidelines

The transition from guideline development to guideline use in clinical practice is not straightforward. The intended users must first become aware of the guidelines, then agree with them, decide to adopt them in their practice, and finally, succeed in adhering to them (Pathman et al. 1996, Rubinson et al. 2005). The available research among nurses indicates that the awareness of guidelines varies from good (Redfern & Christian 2003, Offerhaus et al. 2005, Quiros et al. 2007) to none (Elomaa 2003, Tucker et al. 2003, Hansson & Wenström 2005, Colón-Emeric et al. 2007), and thus the implementation process, may already be hindered at this phase. However, those who are aware of guidelines also seem to agree with them (Brooks &Anthony 2000, Harrison et al. 2002, Offerhaus et al. 2005, Quiros et al. 2007), which provides a positive foundation for the implementation of activities. On the other hand, although good adherence has also been reported (Lia-Hoagberg et al. 1999, March et al. 2000, Elovainio et al. 2001, Eccles et al. 2002, Saliba et al. 2003), adherence to guidelines has frequently been low (Redfern & Christian 2003, Ross et al. 2005, Cunningham 2006).

Although the awareness-agreement-adoption-adherence process is at risk of being interrupted at any time, it can also be facilitated by different means. These means may be classified as a spectrum of interventions, from plain diffusion of information to dissemination and implementation, depending on how targeted the interventions are (Table 1) (Davis & Taylor-Vaisey 1997, Effective Health Care 1999, Mäntyranta et al. 2003, Rogers 2003, Greenhalgh et al. 2004, Grimshaw et al. 2004). This classification is used in this study to emphasize the need for active and planned interventions in ensuring the adoption of guidelines, even though in the English literature, the term implementation is frequently used to cover all these activities (Mäntyranta et al. 2003, Greenhalgh et al. 2004).

Table 1. Classification of interventions used to facilitate adoption of guidelines.

Intervention	Definition
Diffusion	Passive spreading of guidelines.
Dissemination	Targeted, audience-specific communication of guidelines.
Implementation	Active and planned efforts to enhance the adoption of guidelines.

The goal of implementation interventions is the adoption of guidelines, which means changing practitioners' behaviour in a way which is consistent with guideline recommendations (Moulding et al. 1998, Michie et al. 2005). Achieving the required change in behaviour requires a positive attitude towards such behaviour, positive subjective norms (perceptions of the views of others), and the ability to act according to the intended behaviour (e.g. skills, time, co-operation of others) (Ajzen 1991, Levin 1999, Puffer & Rashidian 2004). Even though the plain diffusion or dissemination of guidelines can sometimes be enough to change behaviour, they are most often ineffective (Effective Health Care 1999, Grol & Grimshaw 2003, Francke et al. 2008). Thus, active implementation activities are needed, which are targeted towards the numerous factors which supposedly have an impact on professional behaviour.

Many theories or frameworks have been generated within social and behavioural sciences, in order to organize the factors essential to implementation (Davis & Taylor-Vaisey 1997, Kitson et al. 1998, Moulding et al. 1999, Rosswurm & Larrabee 1999, Solberg et al. 2000, DiCenso et al. 2002, Rogers 2003, Fleuren et al. 2004, Greenhalg et al. 2004, Murphy-Smith et al. 2004). Despite this, no good basis for selection among them exists, since none of the theories or frameworks have been extensively tested (Michie et al. 2005). However, most of the factors emphasized in these different frameworks are included in the fairly recent framework by Fleuren et al. (2004), a modification of which is used to organize the research knowledge of guideline implementation in this study. The important implementation factors are divided into five categories: (1) characteristics of the organization, (2) characteristics of the person adopting the guidelines, (3) characteristics of the patient, (4) characteristics of the guideline, and (5) characteristics

of the implementation strategy. The contents of these categories, with research evidence of their importance are briefly described below.

The research knowledge regarding the **characteristics of the organization** highlights the importance of support from leaders (Flottorp et al. 2003, Grol & Grimshaw 2003, Redfern & Christian 2003, Stone et al. 2004), effective communication between care providers (Flottorp et al. 2003, Ross et al. 2005, Ward et al. 2005, Colon-Emeric et al. 2007), and opportunities for multidisciplinary collaboration (Cheater & Closs 1997, Poe et al. 2001). In addition, feedback of outcomes (Hader et al. 2007), consistent reinforcement (Lee et al. 2002), and change of responsibilities have shown to support guideline adoption (Ward et al. 2005). The complexity of the setting, organizational stability, and facility resources have been referred to as reasons for the differences in the success of implementation interventions between practices (Hulscher et al. 1998, Flottorp et al. 2003, Redfern & Christian 2003, Colon-Emeric et al. 2007, Simpson & Doig 2007, Estabrooks et al. 2008).

Important **characteristics of the person adopting the guidelines** include awareness of the guidelines (Grol & Grimshaw 2003, Hansson & Wenström 2005, Hader et al. 2007) and attitudes towards them (Puffer & Rashidian 2004, McDonald et al. 2005, Ward et al. 2005, Foley et al. 2006). Positive attitudes have proved to predict both the intention to use and the actual use of guidelines (Puffer & Rashidian 2004, Foley et al 2006). Perceived support from peers (Beaulieu et al. 1999, Lee et al. 2002, Sheldon et al. 2004, Stone et al. 2005, Estabrooks et al. 2008) and patients (Hader et al. 2007) have also been associated with the successful adoption of guidelines. Perceived ability to change practices or more often, a lack of it, has been among the greatest barriers to guideline implementation (Gerrish & Clayton 2004, Michie et al. 2004, Puffer & Rashidian 2004). Lack of time or heavy workload have also been associated with unsuccessful implementation (Gerrish & Clayton 2004, Powell-Cope et al. 2004).

Characteristics of patients or patient groups have been found to be significant to implementation even though research evidence on the impact of these characteristics does not exist largely (Fleuren et al. 2004). In fact, it is the practitioners' assumptions of patient characteristics, such as the awareness of guidelines or the acceptance of or resistance to guideline recommendations (Cabana et al. 1999, Hobbs & Erhardt 2002, Hader et al. 2007, Chenot et al. 2008), which have proved to affect implementation more than the actual characteristics of the patients themselves.

As regards the **characteristics of guidelines,** the clarity of their recommendations (Fleuren et al. 2004, Michie & Johnston 2004), their output (Adair et al. 2005, Stone et al. 2005, Simpson & Doig 2007), availability (Powell-Cope et al. 2004), frequency of use (Fleuren et al. 2004), and the source of the guidelines (Sheldon et al. 2004, Butzlaff et al. 2006) often prove to be important in implementation. The relative advantage of

guidelines for practitioners and patients (Beaulieu et al. 1999, Lee et al. 2002, Fleuren et al. 2004, Greenhalgh et al. 2004, Michie et al. 2004, Hader et al. 2007) are also claimed to be important, but it has remained unclear which features of a guideline or a situation create the assumption that implementation will be beneficial to practitioners or patients.

The **characteristics of implementation strategy** have been studied in connection to the effectiveness of interventions. The local adaptation of guidelines (Cheater & Closs 1997, Ketola et al. 2000a, Poe et al. 2001, Ward et al. 2005), lectures and educational meetings (Poe et al. 2001, Lee et al. 2002, Wahlström et al. 2003, Waldorff et al. 2003, Hansson & Wenström 2005, Ross et al. 2005), and educational outreach visits (Hulscher et al. 1998, Cranney et al. 1999, Waldorff et al. 2003, Simpson & Doig 2007) have been frequently proven as effective. Some evidence also exists on the effectiveness of using local opinion leaders (Wahlström et al. 2003, Ross et al. 2005, Jain et al. 2006, Simpson & Doig 2007), the distribution of educational materials (Lee et al. 2002, Ross et al. 2005, Jain et al. 2006), reminders connected to patient records (Waldorff et al. 2003, Ritchie et al. 2004, Simpson & Doig 2007), audit and feedback (Lee et al. 2002, Wahlström et al. 2003), and continuous quality improvement (Engels et al. 2003).

The existing research evidence on guideline implementation highlights the diversity of the factors that may influence the intended outcomes. Due to the large number of different contexts and professional groups, interventions and their combinations, and considerable variations in the observed effects of implementation interventions both within and across different contexts, it is difficult to draw solid conclusions on how to best facilitate an implementation in a specific situation. Thus, those in charge of implementation have a difficult task when deciding how to use their limited resources to facilitate the adoption of guidelines, which until now has been far from successful (Kirkman et al. 2002, Grol & Grimshaw 2003, Hulscher et al. 2005, Chenot et al. 2008).

2.4 Implementation in a primary care context

2.4.1 Characteristics of primary care

Primary care means community-based health services which are usually the patient's first point of contact with the health service. This mainly consists of general care, dealing with the full range of unselected health problems and all categories of the population. The focus in primary care is on continuity and comprehensiveness, which means that patients' health needs are covered longitudinally and by means of curative, rehabilitative, and supportive treatments. Despite the similar purposes of primary care, the ways in which services are organized vary a great deal between countries (Boerma 2006).

In Finland, the provision of primary healthcare is the responsibility of the municipalities (Primary Health Care Act 1972). Municipalities may produce health care services themselves, in co-operation with neighbouring municipalities, or purchase them from a

private service provider (Ministry of Social Affairs and Health 2008b). Primary health services may greatly differ from one health centre to another (Koivusalo 1999, Vuorenkoski 2008), because only certain basic services are defined by law (Primary Health Care Act 1972). In 2004, when the data collection began, 280 health centres provided services to 428 municipalities (Local Finland 2008). Providing out-patient services is the priority in service production, but health centres may also have wards for bed care.

The out-patient services in health centres are arranged as group practices in which physicians and nurses work together, making a common knowledge base and uniform treatment practices essential (Ketola et al. 2000a, Toropainen & Miilunpalo 2002, Litaker et al. 2003, Lindberg et al. 2005). This is especially important in the treatment practices of chronic conditions, when the follow-up of treatment and patient counselling are often a joint effort on the part of nurses and physicians (Ketola et al. 2000b, Harrison et al. 2002, Lindberg et al. 2005). The implementation of guidelines should therefore be targeted at these teams, and not at individuals or one particular group of professionals (Miilunpalo et al. 2002). However, the barriers and facilitators to guideline implementation are different between professional groups (McKenna et al. 2004), suggesting that multiple implementation interventions should be used. Moreover, the great number of relevant guidelines to primary care makes implementation a demanding task (Kuronen et al. 2006, Jousilahti et al. 2007, Nummenmaa 2007, Williams et al. 2007), which always requires time and other resources. Thus the relative importance of different guidelines has to be assessed before implementation. On the other hand, the teams in primary care are relatively small and stable, which may facilitate communication and enhance implementation (Elovainio et al. 2000, Litaker et al. 2003, Ward et al. 2005).

2.4.2 Research on implementation in primary care

Research on the implementation of guidelines has been mainly conducted in specialized care and may not be valid in primary care, where practitioners have to treat a wide variety of conditions and may thus need to implement numerous guidelines. In addition, the research has mainly been conducted from the viewpoint of one professional group, i.e. that of physicians, and the results may not be applicable to nursing practices and team-based care.

In order to attain an overview of the research conducted in primary care, in which implementation was examined from the viewpoint of teams or nurses, a literature search on guideline implementation in primary care was conducted. Electronic databases MEDLINE, CINAHL and the Cochrane Database for Systematic Reviews were searched using a combination of MeSH terms and free text words (Khan et al. 2003) on practice guidelines, implementation, and primary care. The search strategy produced 125 hits in MEDLINE (78 hits), CINAHL (42 hits) and the Cochrane Database (5 hits) published before 10th June 2008. After screening the titles and abstracts, 36 potentially relevant articles were identified. These were assessed using the following inclusion criteria: the study (i) assessed

an implementation intervention, or (ii) compared current practice against guideline recommendations, or (iii) described other aspects related to guideline implementation. Figure 1 outlines the flowchart of studies included in the literature review.

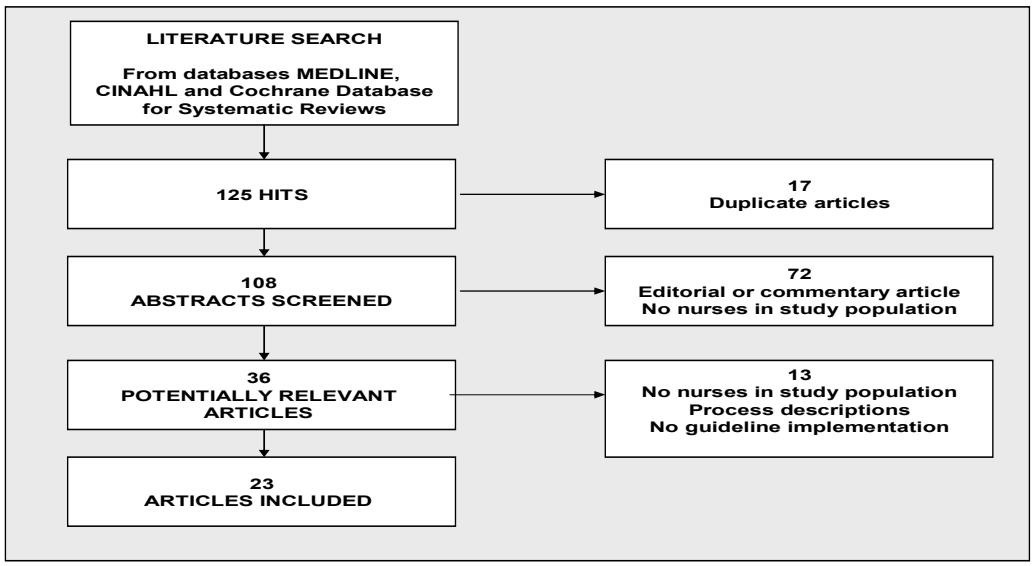


Figure 1. Flowchart of studies included in the literature review.

A description of the 21 empirical studies and their main findings are summarized in Table 2 (intervention studies, N=11) and Table 3 (non-intervention studies, N=10), which are organized in the order of article publication date. The two review articles are described in the text.

The intervention studies assessed the implementation of 14 different guidelines, which were targeted mainly towards common chronic conditions such as depression, hypertension, and diabetes. Several different, mostly multifaceted implementation interventions were utilized in the studies. The study designs varied from randomized controlled trials to case reports. The main outcomes measured in the studies included patient-, professional-, and process-related variables. All the intervention studies were conducted either in the UK (six studies) or in the USA (five studies), and their outcomes were varied. In two studies using intervention-control design, the outcomes in the intervention sites were better than those in the control sites (Katz et al. 2002, Wright et al. 2007), but in one study, no difference was found (Wright et al. 2003). In a study by Brown et al. (2000) which compared two different interventions, only one intervention was associated with better results in one outcome but not in others, whereby in a study by Horowitz et al. (1996) both interventions were associated with positive effects. No impact on measured outcomes was reported in one pre-post study (Button et al. 1998), while another study found positive impacts (Mott et al. 1998). (Table 2.)

Table 2. Summary of intervention studies on guideline implementation in order of publication date.

Author and year	Guideline topic	Intervention(s)	Setting/ Participants	Design	Main outcomes
Horowitz et al. 1996	Depression, hypertension	Academic detailing, or academic detailing and continuous quality improvement	4 clinics – 12 groups/3800 patients	Randomized controlled trial	Both interventions resulted in varied implementation across different organizations.
Button et al. 1998	Urinary continence	Guideline issued to all team members, workshops, regular meetings with facilitator and teams	1 general practice/ 1503 patients	Before-after study	Only minimal changes in patients' conditions.
Mott et al. 1998	Coronary heart disease	Facilitator, audits conducted by participating teams, training sessions	32 practices	Before-after study	All practices increased identification of heart disease patients. A small increase in drug therapy risk assessment, and lifestyle advice, Decrease in number of smokers
O'Connor et al. 1999	Hypertension	Training and standardization of practices	2 primary care clinics/ 1613 patients	Before-after study	Significant improvement in hypertension control among patients.
Brown et al. 2000	Depression	Academic detailing or continuous quality improvement	1 practice - 211clinicians/ 360 patients	Controlled before-after study	In academic detailing, group increase in number of receiving treatment, but no improvement in patients' symptoms. No differences in patients' depression scales or in number of patients taking antidepressants,
Rolnick et al. 2000	Paediatric asthma	Different interventions in different clinics; not specified in text	18 clinics - 23 practitioners	Descriptive	Training session were commonly used and considered practical. Guideline most often used in initial diagnosis, and least often in management of acute episodes or of chronic conditions. Majority of practitioners identified changes in treatment practices due to implementation.

(continued)

Author and year	Guideline topic	Intervention(s)	Setting/ Participants	Design	Main outcomes
Marshall et al. 2001	Venous leg ulcer	1-day workshop, facilitators	13 primary care teams	Descriptive	Knowledge acquired in workshop was not always disseminated to rest of team. Feedback of audits were motivating: Facilitation needs differed in each team.
Katz et al. 2002	Smoking cessation	Tutorial session and real-time reminders to clinicians, pharmacotherapy, self-help material, and telephone counselling for patients	8 primary care clinics/ 651 patients	Controlled before-after study	Intervention was associated with higher abstinence as well as higher number of attempts to give up among smokers. Concordance with guidelines was greater at intervention sites. Clinicians reported intention to change smoking cessation practices.
Wright et al. 2003	Asthma Angina	Local adaptation of Guidelines, education meetings or outreach visits, reminders (posters, desktop calendars etc.)	180 general practices/ 5470 patients	Controlled before-after study	Improvements in all outcome criteria Regardless of whether the guideline was actively implemented or passively disseminated. Greater proportion of professionals in implementation group reported seeing guideline.
Santos et al. 2004	Coronary heart disease	Guideline development, audit, staff training, development of resource pack	1 health board, 106 000 population	Audit of patient records	Disease registers established. Major improvements in cholesterol control. Trends towards better control of blood pressure. Improvements in lifestyle counselling.
Wright et al. 2007	Transient ischaemic attack (TIA) atrial fibrillation	Local adaptation of guideline, education meetings, reminders (posters, desktop calendars etc.)	63 general practices/ 2896 patients	Cluster-randomized trial	Increase in diagnosis of atrial fibrillation. Improved treatment of TIA Compliance with guideline in intervention practices significantly greater. Interventions were cost-effective.

The majority of the non-intervention studies, as well as the intervention studies themselves, were conducted in the UK (N=4) or the USA (N=4). Only one study was conducted in Finland, and one in South Africa. The non-intervention studies were heterogeneous in their aims, and thus also in their main findings. In three studies (Millard 1998, Miilunpalo et al. 2001, Ricketts et al. 2003), the aim was to assess the organizations' implementation strategies for guidelines in general. The results of these studies revealed that although the strategies differed between organizations, every participating organization implemented at least one guideline. A study by Hysong et al. (2007) assessed the differences between facilities classified as having low or high performance according to their guideline adherence. The results showed that high performing facilities had invested more resources into implementation than those with low performance. In three other studies (Gnani et al. 2004, Sherman et al. 2006, Watkins et al. 2006) one of the aims was to assess guideline adherence. These studies reported both poor and good adherence to guidelines. The aims of the remaining three studies were the development of guideline-based structured records in implementation (Daniels et al. 2000), the evaluation of the cost-effectiveness of implementation (Richardson et al. 2004), and the evaluation of the implementation process (Rollman et al. 2005). (Table 3.)

The review study by Dowie (1998) aimed to describe the research designs of guideline implementation studies in the UK in 1996. Of the 14 studies included in the review, eight different intervention strategies, or combinations of them, were identified. In the review by Renders et al. (2000), the aim was to assess implementation interventions conducted to improve the management of diabetes. A multifaceted strategy was used in all 41 studies included in the review. Findings revealed that a combination of professional interventions improved process outcomes. Furthermore, interventions which included patient education, or in which the role of nurses were enhanced, had favourable effects on patient outcomes.

Table 3. Summary of non-intervention studies on guideline implementation in order of publication date.

Study	Guideline topic	Study aim	Setting/Participants	Main findings
Millard 1998	Several guidelines	Assessment of implementation activity	44 health trusts	Most trusts had implemented at least one guideline. Acute trust implemented more guidelines than community trusts.
Daniels et al. 2000	Diabetes hypertension	Development of guideline-based structured records	1 clinic/ 12 practitioners	Practitioners preferred guidelines in form of structured record with references.
Miilunpalo et al. 2001	Several guidelines	Assessment of guideline implementation	31 health centres/ head physician & head nurse pairs	All health centres adopted at least one guideline, a third adopted several guidelines. A fourth assessed them as purposeful in implementation. Large units more goal-orientated than smaller ones.
Ricketts et al. 2003	Mental health	Evaluation of development, implementation and impact of protocols	12 health communities/ 154 practitioners	Majority of teams had developed one or more protocols. Primary care staff more likely to use protocols than secondary care staff. Primary care staff more often identified changes in clinical practice. Several barriers to implementation were identified: poor communication, and protocol overload within primary care.
Gnani et al. 2004	Heart failure	Comparison of treatment practices and guideline recommendations, assessment of constraints to implementation	2 general practices/ 14 practitioners	Shortcomings in recording practices. Lack of equipment needed for diagnosis. Implementation causes additional workload.
Richardson et al. 2004	hypertension	Model examination of cost-effectiveness of implementation	1 large general practice	Implementation of new guideline is more costly than that of previous ones, but more effective in reducing the risk of cardiovascular disease.
Rollman et al. 2006	Depression	Evaluation of implementation process	2 small group practices	Implementation needs leader support. Local adaptation of guideline important. Succession in routine collection of follow-up patient information
Tumiel-Berhalter &Watkins 2006	Asthma	Assessment of attitudes towards guidelines and adherence to them	89 primary care providers	Knowledge of guideline recommendations varied. Majority of care providers had positive attitudes. Positive attitudes were related to use of guideline-related tools.
Sherman et al. 2006	Smoking cessation	Assessment of adherence to guidelines	40 primary care facilities	Good adherence to guidelines. Systematic screening for smoking and counselling of smokers was implemented.
Hysong et al. 2007	6 guidelines	Comparison of implementation strategies of high and low performing facilities	6 primary care clinics/ 102 practitioners	High-performing facilities invested more in implementation of electronic medical records and resources for guideline-related initiatives than low-performing facilities.

Another literature review was conducted in the Medic database, using the keywords 'hoitosuositus' (care recommendation) and 'terveyskeskus' (health centre) or 'perusterveydenhuolto' (primary health care) for the period 1997-2008. This search strategy produced 20 hits, which were screened using the same inclusion criteria as in the other literature search. Six relevant articles were found, and are summarized in Table 4.

According to this review, the implementation of CC Guidelines into Finnish primary care has been studied over a seemingly long time period, considering that the CC Guidelines have only been available for ten years. Thus, when the data of the first studies were collected, the CC Guidelines were a new phenomenon, and inconsistent with the current situation. However, even in 1998, health care professionals reported that they perceived clinical guidelines as useful and reliable, although not easily available (Elovainio et al. 2001). The familiarity with and use of guidelines was greater among physicians than nurses (Elovainio et al. 2001). This may be because the topics of the first guidelines were targeted more towards physicians. However, the situation seems to have remained similar, since physicians' improved familiarity with, and more active use of guidelines was also confirmed in a recent study by Kuronen et al. (2006).

The implementation of guidelines began soon after their publication, since in 2001, when 28 CC Guidelines were available, 70% of head physicians reported that agreements had been made in their health centres on adopting guidelines into clinical practices (Kaila et al. 2006). However, the results of another study conducted in 2001 (Miilunpalo et al. 2002), were, from the viewpoint of professionals, somewhat contradictory: only about a third of professionals reported that they had been informed of guidelines or that agreements on their adoption had been made.

In an experimental study by Rautakorpi & Koskinen (2004), two interventions (problem-based learning and academic detailing) were used to implement five guidelines for infectious diseases. The results showed that description practices concerning the recommendations in guidelines changed, but the differences between experimental and control health centres were statistically significant in only one of the five guidelines.

A study assessing the implementation of the Resuscitation CC Guideline found that despite the generally positive attitudes towards guidelines, according to head physicians once again, they had only been implemented into clinical practice in less than a half of Finnish health centres (Mäkinen et al. 2005). However, despite low implementation rates, resuscitation practices had improved after the publication of the Resuscitation Guideline in 2002, and nurses' independent roles in these practices had strengthened (Mäkinen et al. 2005). This illustrates how plain dissemination can also cause change. Whether this change was true implementation is questionable, as in another study a majority of health care professionals placed the defibrillation electrodes incorrectly (Nurmi 2005).

Table 4. Summary of studies on guideline implementation published in Finnish in order of publication date.

Study	Guideline topic	Study aim	Setting/Providers	Main findings
Elovainio et al. 2001	Guidelines in general	Attitudes towards guidelines	6 health centres/ 444 practitioners	Doctors' attitudes towards guidelines more positive and use more active than nurses.
Miilunpalo et al. 2002	3 guidelines	Assessment of knowledge of guidelines, informing of guidelines	51 health centres/ 367 practitioners	Most practitioners considered guidelines important. Differences between professional groups in activities used to inform them of guidelines.
Rautakorpi & Koskinen 2004	5 guidelines for infectious diseases	Assessment of the impact of problem-based learning and academic detailing on care practices	30 health centres/ physicians and nurses	Most description practices shifted towards the recommendations in guidelines.
Mäkinen et al. 2005	Resuscitation	Assessment of attitudes, education and clinical practices concerning the guideline	Chief physicians in all Finnish health centres	Attitudes towards guidelines were positive, but the guideline had only been adopted in under a half of the health centres. Training regarding guideline and practicing resuscitation skills more active in health centres which had adopted the guideline. Nurses defibrillated more often in health centres where guideline had been adopted.
Kaila et al. 2006	Guidelines in general	Assessment of agreements made on implementation	Chief physicians in all Finnish health centres	70% of health centres had made agreements on implementation. The median number of guidelines implemented was 8 out of 28.
Kuronen et al. 2006	Guidelines associated with cardiovascular diseases	Assessment of attitudes, awareness and usage of guidelines	One primary health care region/ 220 practitioners	Attitudes towards guidelines were positive. Physicians more often familiar with guidelines than nurses. Half of the nurses had not attended any guideline training.

2.5 Summary of literature overview

From the viewpoint of both practitioners and administrators, evidence-based guidelines seem to have become established in health care. Guidelines are believed to keep practitioners up-to-date with new evidence and to thus improve patient care by reducing inappropriate variations. Furthermore, it is hoped that guidelines will reduce the growing costs of health services by guiding practitioners to use only effective treatments. However, their implementation into clinical practices has not been as successful as hoped. Several different variables seem to affect this. In addition, the importance of these variables seems to be dependent on multiple factors, such as the guideline itself, the intended users, and the context.

The available research on implementation conducted among primary care teams or among nurses is scarce, even though the importance of nurses' roles and team-based practices in primary care have been highlighted (Elovainio et al. 2001, Harrison et al. 2002, Litaker 2003, Haahtela et al. 2006). The research knowledge available is also so heterogeneous that it is not very helpful to those in charge of guideline implementation. However, it seems that almost all implementation interventions can have some positive impact on care practices. Based on the results of the intervention studies, we should consider locally adapting the guidelines and changing organizational practices. Organizational changes are essential, as implementation interventions which did not include them failed to change behaviours which require co-operation between professional groups, although they did have an impact on behaviours that clinicians could control (Brown et al. 2000, Katz et al. 2002). Furthermore, several articles pointed out that when guidelines were locally adapted and the professionals' roles redefined, there were positive effects on the behaviours dependent on co-operation (O'Connor et al. 1999, Marshall et all 2001, Katz et al. 2002, Santos et al. 2004). An example of the redefinition of professionals' roles which might be relevant to nursing was the increased use of nurses in the treatment of patients with hypertension (O'Connor et al. 1999). The findings of the non-intervention studies also highlighted the need for support from leaders and the local adaptation of guidelines (Rollman et al. 2005, Hysong et al. 2007). While positive attitudes towards the guidelines were reported (Daniels et al. 2000, Elovainio et al. 2000, Tumiel-Berhalter & Watkins 2006), so was an overload of guidelines and protocols to be implemented in primary care (Ricketts et al. 2003).

The study sets out to assess the implementation of one particular guideline, the HT Guideline, into primary care nursing practices in Finnish health centres. Based on knowledge of previous research, implementation interventions utilized in health centres are assessed from the viewpoint of chief executives, since organizational changes and support from leaders are frequently reported as important in implementation. Nurses' own experiences of implementation and their views on the most important factors are identified, because the effectiveness of implementation appears to be profession-related.

3. PURPOSE AND GOALS OF THE STUDY

The purpose of this study was to produce practical recommendations on how to facilitate the implementation of evidence-based clinical guidelines into Finnish primary care nursing. The study was conducted in three phases. Phase I created an overview of the HT Guideline implementation in Finnish primary health care. Phase II assessed nurses' attitudes towards guidelines and experiences of guideline implementation, and phase III explored nurses' views on the important factors of guideline implementation. Figure 2 outlines the objectives and specific research questions.

Objectives and research questions
Phase I **Evaluation of the extent and style of HT Guideline implementation** • How widely has the HT guideline been implemented in clinical practices in Finnish health centres? • What kind of interventions have health centres used in implementation? • What kind of differences exist between health centres with opposite implementation styles? **Assessment of senior executives' views on the adoption of the HT Guideline recommendations** • Have agreements been made regarding the adoption of the HT Guideline recommendations into clinical practices? • How consistent are the views of chief executive pairs on agreements made regarding the adoption of these recommendations?
Phase II **Assessment of nurses' attitudes towards guidelines** • What kind of attitudes do nurses have towards guidelines? • What kind of differences exist in these attitudes between nurses? **Assessment of nurses' experiences of the HT Guideline implementation** • Has the HT Guideline changed clinical practices? • What kind of experiences do nurses have of the HT Guideline implementation? • In what aspects do the experiences differ in health centres with opposite implementation styles?
Phase III **Identification of nurses' views on the most important factors in guideline implementation** • What do nurses think are the most important factors affecting the adoption of guidelines?

Figure 2. Objectives and research questions of the study.

4. MATERIALS AND METHODS

4.1 Study setting, populations and samples

The data in this study were collected from three different groups of respondents, in correspondence with the study phases. Figure 3 outlines the selection of the health centres from which the data were collected. The purpose of using these different samples was to first gain national-level knowledge of the Hypertension Guideline implementation in Finnish primary health care and then more focused knowledge on nurses' experiences of guideline implementation in health centres where it had been supported through seemingly different strategies. Another purpose was to clarify both the conceptions of chief executives who are in charge of implementing changes in health centres, and the experiences of practitioners who either implement the guideline recommendations in clinical practices or neglect them.

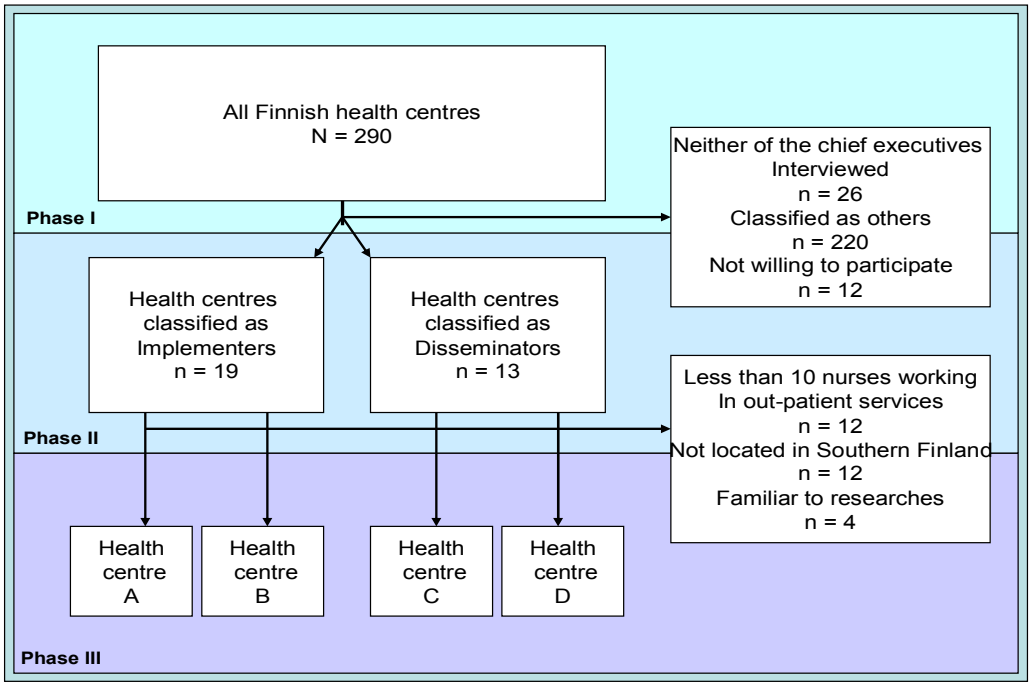


Figure 3. Selection process of health centres participating in the three study phases.

The participants of **phase I** consisted of head physicians and senior nursing officers from Finnish health centres. They were selected in two strata: first, all Finnish health centres were identified using the 2003 Terveyskeskuskäsikirja (health centre handbook), and second, every organizationally independent unit (from 2 to 10 units per centre) was

selected from health centres with a population base of 60 000 or more. In total, 290 health centre units and 577 participants were included (three health centres did not employ a senior nursing officer) (Paper I). Although responses were received from 264 health centres altogether, both the head physician and the senior nursing officer responded from 143 health centres, and formed the sample in Paper II.

In **phase II,** participants were invited from health centres classified in phase I as disseminators (N = 13) which had used few or no implementation channels, and from implementer health centres (N = 19) which had used multiple implementation channels and whose senior executives reported being willing to participate in further studies. These health centres, with opposite implementation styles, were selected in order to gain an insight into the diversity of nurses' experiences. The sample consisted of all nurses (N = 409) working in the out-patient services of these health centres (Paper III, IV).

Participants of **phase III** were invited from four health centres. Two of these were disseminators and the other two implementer health centres. The other inclusion criteria of the health centres were that there were at least 10 nurses working in their out-patient services, that the implementation of the HT Guideline had led to a new division of labour in one disseminator and implementer health centre and not in the others, that they were located in southern Finland, and that they were not familiar to the interviewers (Paper V).

4.2 Data collection

The data were collected using different methods from the samples described above. The purpose of the sequential use of these different methods was to reveal the different facets of the phenomenon, to add scope and breadth to the study, and to neutralize the possible biases inherent to particular methods (Sandelowski 2000, Johnstone 2004).

Phase I

The data from chief executives were collected using Computer-Assisted Telephone Interviews (CATI) carried out in October and November 2004 by trained interviewers from Statistics Finland. The questionnaire used in this survey was developed by the ECCE consortium, which consists of several experienced scholars in guideline development and implementation, as well as experts in nursing, medicine, and education. Panel discussions between the members of the consortium and PhD students resulted in the final questionnaire, which was then piloted in eight different interviews conducted by Statistics Finland. (Paper I, II.)

The questionnaire consisted of 30 questions in five main categories:

- Characteristics of the respondents and the organization (9 questions)

- Adoption of the Hypertension Guideline (3 questions)
- Informing patients and the population of the HT Guideline (6 questions)
- Introduction and teaching of the HT Guideline (7 questions)
- Agreements made upon the recommendations of the HT Guideline (5 questions)

(Appendix 1).

Questions were mainly closed-ended and included some conditional jumps, i.e. questions depending on preceding answers (Harris et al. 1993). Thus, all questions were not necessarily answered by every interviewee. Information concerning the size of the health centre (one characteristic of the organization) was collected from the Terveyskeskuskäsikirja (2003) or if it was not available there, from the health centre's website in January 2004. (Paper I, II.)

Phase II

The data collection in phase II was carried out in two parts. First, the senior nursing officers in selected health centres were telephoned in April 2006 and asked for their permission and co-operation in data collection. The telephone conversation served to collect information on the number of nurses, the way of organizing health centre services, and possible new divisions of labour between nurses and physicians due to the implementation of the HT Guideline (Appendix 2).

The rest of the data was collected using self-administered questionnaires, which were mailed to senior nursing officers who then distributed them to the nurses working in out-patient services. The questionnaires (Appendix 3) were accompanied by a cover letter (Appendix 4) and a stamped addressed envelope, and mailed in May 2006. Reminders went out in August 2006. Two ECCE consortium researchers further developed the questionnaire by collecting data both from primary care nurses and physicians (another study in the sub-project evaluating the HT Guideline implementation). The new questionnaire consisted of 25 questions; nine of them, concerning the implementation style of the HT Guideline, were the same as in the CATI survey. This made it possible to compare the nurses' and senior executives' experiences of HT Guideline implementation. The development of other questions was guided by the content of the HT Guideline. The topics of the questions were:

- Characteristics of the respondents (6 questions)
- Implementation style of the HT Guideline (9 questions)
- Counselling of patients with hypertension and their familiarization with the HT Guideline (5 questions)
- Agreements made regarding the HT Guideline recommendations (5 questions)

Responses to these questions were given by choosing an appropriate answer from either dichotomous or multiple-choice alternatives. (Paper III.)

The questionnaire also contained the Attitudes towards Guidelines Scale (AGS) by Elovainio et al. (1999). This instrument has been developed to assess perceived barriers and facilitators of guideline implementation and its validity and reliability has been tested in Finnish primary health care (Elovainio et al. 1999, Elovainio et al. 2000). It consists of seven subscales with two items in each. Response options to the questions are a 7-point scale ranging from strongly disagree (1) to strongly agree (7). Responses to negatively keyed items were reversed so that the higher scores expressed a more positive attitude. (Paper IV.)

Phase III

The data in phase III were collected through focus group interviews among nurses working in the out-patient services of selected health centres. Interviews were carried out in April 2007. Nurses were asked for their voluntarily participation, and received information regarding the topics of the interviews, confidentiality and practical arrangements of the interview sessions (Appendix 5) prior to data collection. A topic guide was developed which addressed the nurses' familiarity with guidelines, their experiences of their implementation, and the most important facilitators and main barriers to guideline implementation. The participants in the focus groups were, however, encouraged to have free discussions, and the topic guide was only to be employed if discussions diverged too much. (Paper V.)

4.3 Data analysis

The data in study **phases I and II** were analysed using SPSS software for Windows (version 12.0 in Paper I, and version 14.0 in Papers II, III and IV). In descriptions of the data frequencies, percentages and means with standard deviation were used. Other analysis methods are described separately below. In all studies a two-sided p-value of < 0.05 was considered significant.

In **phase I,** a criteria sum-score for the style of implementation was calculated for every health centre in order to describe HT Guideline implementation and to identify centres with opposite implementation styles. The sum-score value ranged from 0 to 11. Health centres with the lowest values in the sum-score (0-2) were classified as disseminators and those with the highest values (10-11) as implementers. The cut-off points in this classification were based on the needs of further studies - that is, to achieve a sufficient number of participants. Differences between health centre characteristics and sum-score values were assessed using cross-tabulation and a chi-squared test. (Paper I.)

Paired responses were used to measure congruence between the opinions of the head physician and the senior nursing officer in the same health centre. In order to study congruence all "do not know" answers were excluded. The McNemar-Bowker test was used to assess whether the distribution of answers was symmetrical, as the respondents were dependent. (Paper II.)

In **phase II,** the responses to AGS items were condensed by calculating subscale scores (mean of two items) and a composite score (mean of all 14 items). Before this, negatively expressed items were reversed. We used the subscale and composite scores in assessing associations between nurses' characteristics and attitudes towards guidelines. Non-parametric tests (cross-tabulations with the chi-squared test, the Mann-Whitney U-test, ANOVA, and the Spearman correlation) were used to test associations between nurses' characteristics, implementation interventions, and AGS scores. Cronbach's alphas were calculated for subscales to examine the inner consistency of the scale (Paper III.). The criteria sum-score for implementation style was counted for every nurse who responded to the questionnaire, and ranged from 0 to 10. The difference in the maximum value of the sum-scores used in study phases I and II, is due to the fact that one response option included in the criteria sum-score in phase I (doctors' participation in guideline development) was not included in the nurses' questionnaire. In comparisons of nurses' characteristics and sum-score values, cross-tabulation and a chi-squared test and t-test were used. Associations between variables were tested using the Spearman correlation. (Paper IV.)

The data in **phase III** were analysed using inductive content analysis (David & Sutton 2004). First the tape-recorded data were transcribed verbatim and read several times. Next, descriptions related to guideline implementation were underlined and given thematic expressions. These expressions were then organized into categories, which were further combined into main factors. In the final phase, the 11 main factors were organized into four main groups (Paper V).

4.4 Ethical considerations

The study was based on an accepted research plan, and throughout the research process honesty, general carefulness, and accuracy were heeded at all times (The National Advisory Board on Research Ethics 2002). No approval from the ethics committee was needed, as the participants were professionals, and not patients. The study followed the principles of research ethics and good scientific practice (The Declaration of Helsinki 2000, The National Advisory Board on Research Ethics 2002, Burns & Grove 2007), and utilized procedures to protect participants' rights, i.e. self-determination, anonymity and confidentiality, ensuring protection from discomfort and harm, and confirming informed

consent (Burns & Grove 2007). These are discussed below in more detail in relation to data collection methods.

Self-determination was fulfilled in data collection, since responding to the telephone interview in **phase I**, returning the questionnaires in **phase II**, and coming to the focus group session in **phase III** was voluntary, and required informed consent. Prior to data collection, participants were provided with either oral (telephone interview) or written information regarding study purposes, voluntary participation, and anonymity, in order to ensure that consent was informed.

In **phase I** the data collection was administered by Statistics Finland, and thus the compilation of statistics was regulated by the Statistics Act (280/2004). The basic data were released to researchers in such a form that individuals could not be identified. Only the names of the senior executives who were willing to participate in further studies and classified either as disseminators or implementers were given to researchers.

In **phase II**, the telephone interviews with senior nursing officers were also based on informed consent and voluntary participation, since the interviewer notified the subjects of the study purpose and asked for their permission to include them in the study. During the telephone contacts, the senior nursing officers were also asked for permission to let their nurses participate in the study. The questionnaires for nurses were distributed via senior nursing officers or another contact person which they themselves nominated. Even though the health centres could be identified from their code numbers, this information was only used to mail questionnaires and reminders and was known only to the two researchers of the HT Guideline implementation sub-project. Questionnaires were provided with a cover letter explaining the purpose of the study, the confidential treatment of responses, and informing that results would be published at group level so that respondents and their organizations could not be identified. Responding to the questionnaire was voluntary. Permission to use the AGS instrument was obtained from its developers.

In **phase III**, permission to conduct the focus group interviews was obtained from senior nursing officers. They were asked to select the participants (4-6 nurses) for the focus groups and to distribute an information leaflet to nurses. As pointed out by some authors, this kind of selection model may have caused pressure to participate (Mulhall 2003, Barbour 2005). However, during the group interviews, the atmosphere was quite enthusiastic and nurses seemed willing to discuss the topics; this can be interpreted as voluntary participation. Furthermore, the topic of the focus groups was highly practical and there were no intense emotional reactions. The group sessions began with some refreshments and informal discussions to make the atmosphere comfortable, as suggested by several experts in the field (Krueger 1994, Kitzinger 2000). Then the purpose and the confidentiality of the interviews were discussed, and nurses were asked for permission

to tape-record the sessions. The focus groups were arranged during working hours in the health centres' own facilities in order to make the participation as easy as possible. Two facilitators, one with previous experience as a focus group facilitator, were used in all groups to ensure that participants were encouraged to take part in discussions, which is considered important to multidimensional data (Sim 1998, Robinson 1999, Hyden & Bulow 2003). The researcher transcribed the tape-recorded data verbatim, and the study's two facilitators and supervisors carried out the analysis: thus no other people were able to see the original data.

5. RESULTS

5.1 Extent and style of HT Guideline implementation into Finnish primary care

A total of 410 (246 senior nursing officers and 164 head physicians) out of 577 chief executives were interviewed. They represent 264 Finnish health centres (91%). According to them, the HT Guideline was implemented into clinical practice in most health centres (Table 5). Most often it was a locally adapted house rule, rather than the original CC Guideline, and the least often a regional clinical pathway constructed to a healthcare district. The remaining 11% of respondents replied that no guideline was implemented. (Paper I.)

Table 5. Frequency of use of different implementation interventions in health centres.

Criterion for implementation	Positive responses (%) n = 410
1. Adoption of guideline	
House rule	40
Clinical pathway	22
Original CC Guideline	37
2. Participation in guideline development	
Doctor(s)	50
Nurse(s)	47
Representative from patient association	3
3. Agreement on updating the guideline	42
4. Discussed at professional meetings twice or more often	44
5. Discussed at multidisciplinary meetings twice or more often	39
6. Used in familiarizarion of new staff always or often	51
7. Guideline-based training arranged	43
8. Informative material for patients in waiting room	74
9. Population informed	
in local newspapers	21
on local radio or television channels	4
at patient association events	47
at health centres' own events	33

Interventions to enhance implementation were varied. According to nearly half of the respondents, guideline-based training for staff and guideline-focused discussions in multidisciplinary and professional meetings had been arranged. Over half claimed that

the guideline was used in the familiarization of new staff. Moreover, about a half of the chief executives responded that either nurse(s) or doctor(s) in their health centre had participated in the guideline development. The most often employed patient-centred interventions consisted of informing patients of the guideline by placing information in waiting rooms and arranging information events at health centres or with patient associations. Other patient-centred channels were utilized more seldom. (Paper I.)

The number of implementation channels used in individual health centres varied widely. The values of the criteria sum-score developed for describing the implementation styles varied from 0 to 11, the mean value being 6.0 (SD 2.6). Health centres with the lowest values (0-2) were classified as disseminators (N = 23) and those with the highest values (10-11) as implementers (N = 21), both groups representing 7 to 8% of all Finnish health centres. (Paper I.)

The disseminator and implementer health centres differed from each other in two aspects. First, disseminators had smaller population bases (78% less than 10 000) than implementers (19% less than 10 000) ($p < 0.001$). Second, in the disseminator health centres the organization of services was most often (65%) based on a traditional model, where patients are given appointments with any available physician, whereas in the implementer centres the family doctor system, where each general practitioner has his/her own panel of patients, was most common (81%) ($p = 0.003$). (Paper I.)

5.2 Agreements on adoption of HT Guideline recommendations

Both head physicians and senior nursing officers from 143 health centres responded - this represents nearly half (49%) of all health centres in Finland. The majority of head physicians (84%) and senior nursing officers (67%) claimed to be familiar with the HT Guideline. According to 42% of chief executive pairs, the implementation of the HT Guideline into clinical practices had led to new divisions of labour. Chief executives' views on the adoption of the recommendations in the HT Guideline are described in Table 6. (Paper II.)

According to the majority of chief executives, the recommendations concerning measurement practices, i.e. regular calibration of sphygmomanometers and double measurement of blood pressure, were adopted into clinical practices, and in these aspects their views were quite consistent. Agreements in the health centre on recording follow-up frequency, the target level of blood pressure, and cardiovascular risk evaluation in patient records were made less seldom, and the consistency between head physicians' and senior nursing officers' responses was lower (Table 6). Head physicians were more of the opinion that agreements had not been made ($p < 0.001 – 0.002$) (Table 6) than were senior nursing officers. On the other hand, senior nursing officers responded more often than head physicians that they did not know whether agreements on recording blood pressure, target level or cardiovascular risk evaluation had been made or not (Table 6). (Paper II.)

Table 6. Distribution (%) of head physicians' (HP) and senior nursing officers' (SNO) responses on agreements made on the implementation of the HT Guideline recommendations and the consistency (%) of their views.

Recommendation	Yes		No		Do not know		Consistency
	HP	SNO	HP	SNO	HP	SNO	HP & SNO pairs
Agreements on recording practices							
Follow-up frequency of measurement	60	73	34	17	6	10	68
Setting blood pressure target level	55	56	44	29	1	15	55
Cardiovascular risk evaluation	35	32	64	44	1	25	58
Measurement practices							
Regular calibration of measures	80	90	10	6	10	4	87
Double measurement	78	78	17	14	5	8	74
Group counselling in health centre							
Smoking cessation	69	60	29	39	1	1	66
Weight loss	92	87	6	12	1	1	86
Exercise	76	76	22	24	1	1	71

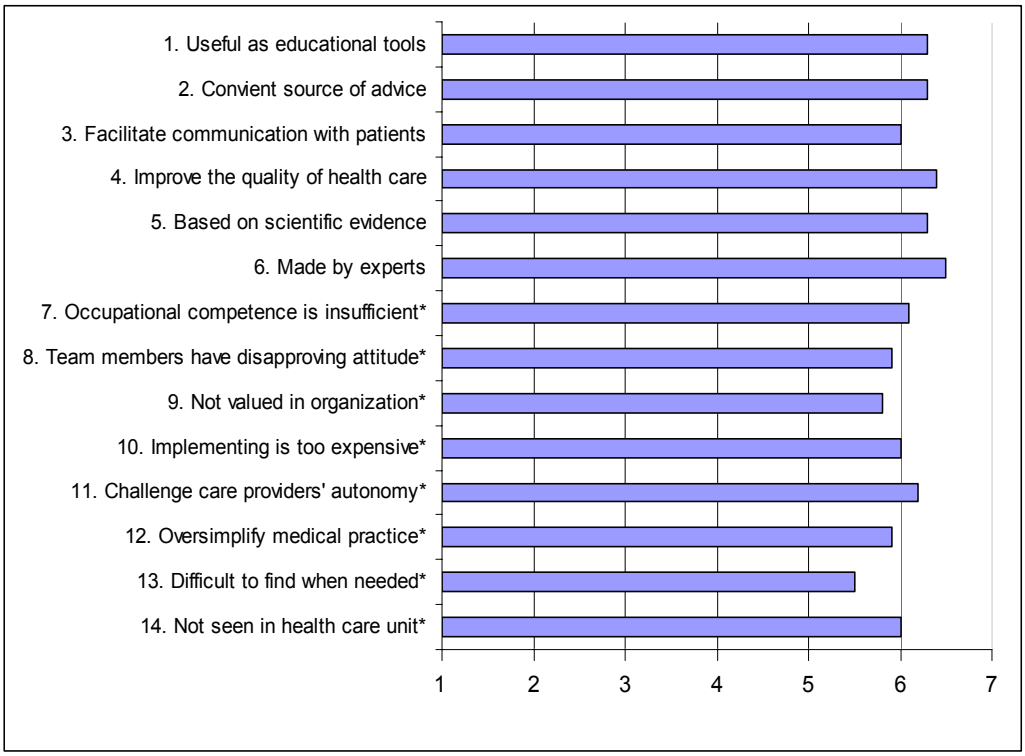
According to chief executives, group counselling for hypertensive patients, i.e. smoking cessation, weight loss, and exercise, was arranged in the majority of health centres. The consistency of their views in group counselling was highest in the arrangement of weight loss groups and lowest in facilitating smoking cessation. (Paper II.)

5.3 Relationships between guideline implementation, attitudes towards guidelines, and guideline use

A total of 327 nurses (response rate 80%) returned the questionnaire inquiry which included the Attitudes towards Guidelines Scale. However, responses to the scale were only available from 321-323 nurses, because a few nurses had not answered it at all, and some had not responded to all the questions. Responses were received from 12 disseminator and 19 implementer health centres. (Paper III.)

Nurses' attitudes towards guidelines were in general highly positive. The mean values of each AGS item were either near or over six on a scale where the most positive value was seven (Figure 4). The attitudes were most positive in the items 'Guidelines are made by experts' and 'Guidelines can improve the quality of health care'. The least positive attitudes were in items concerning the easiness of finding guidelines, and the evaluation of guidelines in respondents' organizations. In these two items, nurses from disseminator health centres had significantly less positive attitudes than nurses in implementer health centres (M 5.3, SD 1.87 vs. M 5.6, SD 1.40 and vs. M 5.3, SD 1.65 vs. M 6.0, SD 1.14 $p < 0.001$). (Paper III.) Nurses' attitudes were also associated with all assessed implementation interventions. Attitudes were better among those nurses who reported that an implementation intervention had been utilized in their health centre.

As regards nurses' characteristics (gender, age, work experience in the health care sector and in the current health centre, and occupation), age and work experience in the current health centre were associated with the AGS subscale concerning the reliability of guidelines (items 5 and 6). Older nurses ($r = -.17$, $p < 0.01$) and those with longer work experience ($r = .12$, $p < 0.05$) considered them less reliable. Nurses who reported being either very familiar or familiar with the HT Guideline had more positive attitudes towards them than those who were not familiar with them ($p = 0.033$ – $p < 0.001$). In particular, the subscale concerning the availability of guidelines (items 13 and 14) illustrated an obvious difference between these two groups (M 6.1, SD 0.96 vs. M 4.6, SD 1.65 $p < 0.001$). (Paper III.)



*Negatively keyed items – values reversed.

Figure 4. Mean values (range from 1 = strongly disagree to 7 = strongly agree) of nurses' responses in AGS items (n = 321-323).

Nurses' self-reported use of the HT Guideline was associated with attitudes towards guidelines. Those with more positive attitudes reported using the guideline always or nearly always more often than those with less positive attitudes (M 6.3, SD 0.48 vs. M 5.8, SD 0.54, $p < 0.001$).

5.4 Nurses' experiences of HT Guideline implementation

A total of 327 nurses responded (response rate 80%) from 12 disseminator and 19 implementer health centres. From one small disseminator health centre, no questionnaires were returned. However, all senior nursing officers in the 32 health centres were interviewed. (Paper IV.)

The implementation of the HT Guideline was assessed by asking if agreements on adopting some practical recommendations in the HT Guideline had been made in their health centre (Table 7). Nurses responded that the most often adopted recommendation was using double measurement, and the least often, recording cardiovascular risk evaluation in patient records. Nurses in disseminator health centres responded more often than nurses in implementer health centres, that no agreements on recording follow-up schedules ($p < 0.001$) and cardiovascular risk evaluations ($p = 0.011$) had been made. (Paper IV.)

The patients were most often informed about lifestyle changes crucial to the treatment of hypertension, and over half of the nurses also gave written information to patients. About a half of the nurses informed patients about the HT Guideline, whereas only a fifth of the patients themselves asked about it. There were no differences between nurses in disseminator and implementer health centres in these counselling practices. (Paper IV.)

Nurses' experiences of the HT Guideline implementation were also assessed using the criteria sum-score developed in phase I. The values of the sum-score (range 0-10) differed significantly between nurses in disseminator and implementer health centres (M 3.1 vs. M 5.4., $p < 0.001$). However, the sum-score values of nurses working in the same health centres also varied a great deal. (Paper IV.)

Table 7. Nurses' opinions on agreements made in their health centre on adopting the HT Guideline recommendations into clinical practice.

Recommendation	Nurses n = 327 (%)		
	Yes	No	Does not know
Double measurement used	96	4	-
Measures calibrated at least every other year	66	16	18
Follow-up schedule recorded	60	25	15
Target-level of blood pressure recorded	38	39	23
Cardiovascular risk recorded	15	45	40

Senior nursing officers reported that the implementation of the HT Guideline had led to a new division of labour in 17% of the disseminator and in 79% of the implementer health centres ($p < 0.001$). The new division of labour entailed that the main responsibility of patient counselling, the training of patients to use sphygmomanometers at home, and the follow-up of blood-pressure levels following predetermined criteria was assigned to nurses. (Paper IV.)

5.5 Important factors in guideline implementation

Four focus groups were formed, consisting of 16 primary nurses (from 3 to 5 participants in each group). Nurses' views on important factors in guideline implementation were seemingly similar, even though they represented health centres which had used different implementation strategies, at least when evaluated (2.5 years prior to this data collection) (Paper I). The main difference was that in groups A, B and C, the discussions on the important factors were more facilitator-orientated than in group D, where discussions were more barrier-orientated. (Paper V.) Four main groups of factors with 11 sub-themes essential to implementation were identified from the data. The main group factors and the sub-themes are described in Figure 5.

Of the factors related to organization, the local adaptation of the national HT Guideline was considered important by the nurses, since local house rules were more concise than the national HT Guideline, and presented by flow charts which were easy to use during patient appointments. The house rules also differentiated between the responsibilities of nurses and physicians in the treatment of hypertensive patients. Nurses in group D, where local adaptation had not been actualized, did not use the HT Guideline as actively as nurses in other groups. Another issue considered important was management support of the implementation; informing nurses of the HT Guideline and recommending its adoption into clinical practice, organizing training, and enabling access to Terveysportti (an internet portal for health care professionals). In addition, nurses felt that managers had supported the implementation of the HT Guideline by providing feedback on treatment practices to professionals via the quality assurance work conducted in three health centres (groups A, B and C). (Paper V.)

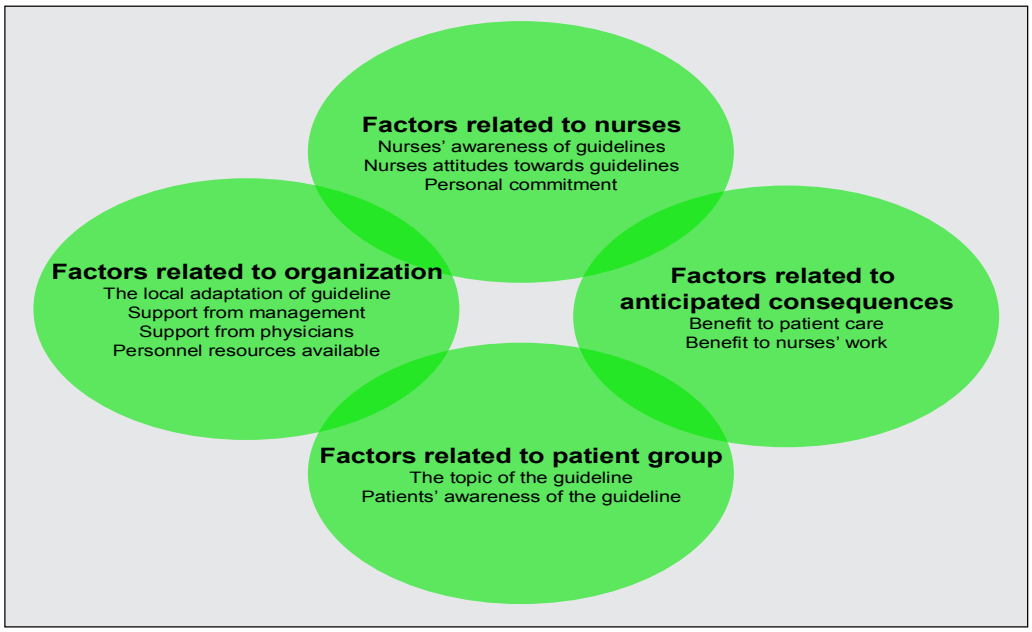


Figure 5. Nurses' views on important factors in guideline implementation.

Support from physicians was considered essential to implementation. When physicians followed the HT Guideline recommendations, they acted as important facilitators to implementation, whereas when they neglected it, they acted as major obstacles. Inadequate personnel resources in health centres, in particular the shortage of appointments with physicians and nurses, and a lack of resources for familiarizing substitute staff, were also seen as barriers to implementation. (Paper V.)

Important factors related to nurses were their awareness of the HT Guideline and their positive attitudes towards the national CC Guidelines in general; these formed a solid basis for implementation interventions. However, nurses also discussed the differences in personal commitment and activeness required for implementation, such as attendance of training and meetings, and familiarization with guideline recommendations. They also pointed out that some of them needed more time than others to adapt new practices. (Paper V.)

The anticipated consequences of guideline implementation were mainly positive. Nurses felt that their work had become more meaningful and independent after the implementation of the HT Guideline, due to the development of a house rule in particular. The implementation had also improved the follow-up practices of hypertensive patients so that unnecessarily frequent blood-pressure measurements were abandoned and more time used for patient counselling. This was beneficial both to the meaningfulness of nurses' work and to patients, who were thought to have become more independent in

the follow-up of their own blood pressure levels. Another benefit to patients was more consistent care with fewer variations between individual professionals. (Paper V.)

The topic of the guideline was highly important to the nurses. The HT Guideline was expected to be fairly easily adopted, since hypertension was common among patients. Patients themselves were thought not to be aware of the HT Guideline, and sometimes their poor compliance with medication regimes and lifestyle changes challenged nurses' patient counselling skills. (Paper V.)

5.6 Summary of results

The national HT Guideline seems to be well-known in Finnish primary health care, and has been introduced to some extent into clinical practices in most health centres. According to chief executives, the style of implementation varied widely among health centres. This variation was also confirmed by nurses, although there were some differences between the views of nurses in same health centre.

The impact of the HT Guideline implementation on clinical practices was two-fold. According to both chief executives and nurses, the precise recommendations on measurement practices were frequently implemented. On the other hand, agreements on recording follow-up frequency, target levels of blood pressure, and total cardiovascular risk evaluation were made less often. There was also a difference between the views of chief executives and nurses on the implementation of these recording practices, chief executives' views being more positive than nurses. The HT Guideline recommendation on patient counselling in important life-style related risk factors was often organized by arranging group counselling and informing patients of these issues during nurses' appointments. Furthermore, the implementation of the HT Guideline led to new divisions of labour between nurses and physicians in over half of the health centres.

The attitudes towards guidelines in general were highly positive among nurses, even more so among nurses who reported being either familiar or very familiar with the HT Guideline. The implementation style of a health centre was associated with nurses' attitudes towards the valuation and the availability of guidelines in their organization; nurses in disseminator health centres had more doubts about these matters. Nurses' positive attitudes and awareness of the HT Guideline were often articulated in focus groups as facilitators to implementation. In addition, they were fairly convinced that guidelines can have a positive impact on both the content of their work and on patient care, and were therefore willing to implement them. However, the change of clinical practices was considered ineffective without local adaptation, organizational support, education, or the commitment of management and physicians.

6. DISCUSSION

6.1 Validity and reliability of the study

6.1.1 Validity and reliability of data

The adequacy of a study depends on how valid and reliable its data collection measures are (Watson 1999, Polit et al. 2001, Burns & Grove 2005). The validity of a study refers to the instruments' ability to accurately measure what they are supposed to (Burns & Grove 2005, LoBiondo-Wood & Haber 2006). Reliability, which is an essential element of validity, is the extent of consistency with which something is measured (Watson 1999, Burns & Grove 2005). However, validity and reliability are not an all-or-nothing phenomenon, but rather a matter of degree (Burns & Grove 2005).

Triangulation of data collection methods, as well as data sources, was used to gain a versatile description of the research topic and thus, to add to the validity of the results (Sandelowski 2000, Johnstone 2004). By doing this, it was possible both to get an overview of HT Guideline implementation in Finnish primary care, and to gain deeper knowledge of the important factors. Assessment of the views of both chief executives and nurses further added to the reliability of the implementation data, since their views seemed consistent. Adding to the reliability of the study was also another reason for combining methods, since different methods have complementary strengths as well as their non-overlapping weaknesses (Sandelowski 2000). When questionnaire studies offer a practical means for collecting information from a large number of people, there is always the disadvantage that respondents may misunderstand the questions, or are just bored of them due to the considerable number of surveys conducted today, and thus not willing to respond (Harris et al. 1993, Boynton 2004). Qualitative interviews, on the other hand, although they can be used to assess the views of only a limited number of interviewees, also have the advantage that interviewees can express themselves in their own words, and that the understanding between interviewees and interviewer can be checked immediately (Sim 1998, Kitzinger 2000).

The two questionnaires (Papers I, II, IV) used to collect the quantitative data were developed to suit the needs of this study. Their validity was based on face validity, which is a subtype of content validity (Polit et al. 2001, LoBiondo-Wood & Haber 2006) assessed by the ECCE consortium. The selection of the topics concerning guideline implementation was further affected by several review articles (Cheater & Closs 1997, Bero et al. 1998, Effective Health Care 1999, Solberg et al. 2000, Grimshaw et al. 2004). The proposed effectiveness of interventions was the main selection criteria. However, health centres may have utilized interventions not included in this questionnaire. One such intervention was quality assurance work in some health centres, which nurses

discussed during the focus group interviews. Some respondents might have included it under the 'discussion in meetings' topic, but others may not. The topics related to the HT Guideline were selected to cover the main recommendations in it. When respondents were asked if agreements had been made in their health centre on adopting these recommendations, the term "agreements" was not clearly defined. This may have caused different interpretations of it, since agreements may have been made on either a team or health centre level. Chief executives may not have been aware of agreements made in teams. However, since chief executives' views on agreements were more positive than those of the nurses, this may not have been the case. The wording, construction, and length of the CATI questionnaire was discussed and revised according to the suggestions of a Statistics Finland researcher, who also piloted it (Harris et al. 1993, Nieman 2003, Wood et al. 2005). The overall appearance, wording, and length of the questionnaire given to primary care nurses was checked by several members of the ECCE consortium (Boynton & Greenhalgh 2004, LoBiondo-Wood & Harper 2006).

The reliability of questionnaires was not tested, since the measures used to test reliability, such as test-retest, interrater, split-half or internal consistency techniques were not applicable to the questionnaires used (Burns & Grove 2005, LoBiondo-Wood & Haber 2006). An exception was the AGS instrument included in the second questionnaire (Paper III), the validity and reliability of which had been previously tested (Elovainio et al. 1999, Elovainio et al. 2001, Mäkinen et al. 2005). In this study, the internal consistency of the 14 items in the instrument varied from 0.78 to 0.80. This is considered acceptable, since it is within the scope of the lowest acceptable values of 0.70 to 0.80 (Watson 1999, Burns & Grove 2005, LoBiondo-Wood & Haber 2006).

The qualitative data were collected through focus group interviews, which are proven to be an effective technique for exploring the attitudes and experiences of health care practitioners (Sim 1998, Kitzinger 2000, Mortimer et al. 2004). A topic guide for discussions was carefully prepared based on previous research on implementation. Furthermore, two facilitators were used to ensure that all relevant topics were discussed and that all group members were encouraged to participate if needed. Participants' expertise on the topic was emphasized (Sim 1998, Kitzinger 2000). Since the number of group members in the focus groups was relatively small and the discussions progressed well, all had sufficient opportunities to express their opinions. They also seemed to be willing to talk about their work, which gave the facilitators the impression that the members felt comfortable enough to express themselves freely. The discussions were tape-recorded to allow accurate verbatim analysis of the data (Sim 1998), but unfortunately during the last session, the tape-recorder broke down and the data had to be based on field-notes only. (Paper V)

6.1.2 Validity and reliability of results

Responses to the CATI survey were collected from the majority of Finnish health centres - either head physicians, senior nursing officers or both chief executives responded from 91% of health centres. This high response rate made it possible to achieve a good overview of the HT Guideline implementation in Finnish primary care (Paper I). From nearly a half of health centres (49%) both chief executives responded, which allowed a comparison of the consistency of the chief executives' views (Paper II). The varying consistency of the responses was not considered an indication of the low reliability of the instrument, but was seen as a difference in chief executives' knowledge of implementation. This was because the inconsistencies were most obvious in items where the chief executive pairs' knowledge level was expected to differ, due to their different tasks in the organization; chief physicians participate in patient care whereas senior nursing officers carry out administrative work.

The response rate of questionnaires completed by primary care nurses varied from 70% in disseminators to 85% in implementer health centres. The lower response rate in disseminator health centres might reflect a lack of interest in the research topic among the nurses. Since the number of nurses working in disseminator health centres was already smaller in the study population, they were under-represented in the studies. This might have distorted the results in studies III and IV, presumably by giving more positive results concerning the attitudes towards guidelines and implementation of the HT Guideline recommendations. In addition, all the data concerning the implementation style and the implementation of guideline recommendations into clinical practices were self-reported, and may have been subjected to bias of over-estimation (Adams et al. 1999, Walker et al. 2001, Lombarts et al. 2005).

The validity or the trustworthiness (Holloway & Wheeler 2002, Tobin & Begley 2004, Tong et al. 2007) of the qualitative data refers to the dependability, credibility, transferability, and confirmability of the findings. The dependability of the findings came from a logical, traceable and clearly documented research process (Tong et al. 2007), the guidance of which was followed throughout the analysis and writing process. The credibility of findings means that the findings proposed by the researcher are compatible with the perceptions of participants. To enhance the credibility of findings, the analysis was performed partly in collaboration with one facilitator of the focus groups and two other researchers (Silverman 2000, David & Sutton 2004). Transferability refers to the generalizability of findings. The results of focus group interviews were highly consistent with each other, even though the participants in different groups came from health centres with presumably opposite implementation strategies. This consistency of views gives support to cautious generalization (Sim 1998, Tobin & Begley 2004). Finally confirmability means that the interpretations of findings are clearly derived from the data (Holloway & Wheeler 2002, Tobin & Begley 2004). In addition to describing the analysis

accurately, direct quotations were used to help the readers follow the interpretations made by the researcher (Tong et al. 2007). The trustworthiness of the findings was also supported by their consistency with previous research knowledge, even though this previous knowledge was not consciously used to guide analysis.

6.2 Discussion of results

6.2.1 HT Guideline implementation in health centres

According to the chief executives, the HT Guideline has been implemented into clinical practices in a majority of Finnish health centres, but the interventions used to facilitate implementation have varied. The differences found between health centres' implementation policies are congruent with previous research knowledge (Millard 1998, Miilunpalo et al. 2001, Flottorp et al. 2003, Sheldon et al. 2004). Health centres which had used few or no interventions were classified as disseminators, and health centres which had used multiple interventions as implementers. This classification was based on research evidence on the effectiveness of different interventions (Davis & Taylor-Vaisey 1997, Effective Health Care 1999, Grimshaw et al. 2004). Since the evidence is not coherent and even the effectiveness of multiple interventions was sometimes questionable (Bero et al. 1998), the classification should not be interpreted as any kind of superiority order. However, it can be seen as a reflection of chief executives' attitudes on the importance of guideline implementation, since they are the key stakeholders in implementation (Kitson et al. 1998, Flottorp et al. 2003, Grol & Grimshaw 2003, Redfern & Christian 2003, Stone et al. 2004).

The HT Guideline was frequently adapted to local circumstances by creating a house rule or regional clinical pathway, and in about 50% of health centres, nurses and physicians had participated in the development of this local version. Local adaptation has proved to be an important facilitator to implementation and has fostered the adoption of guidelines into clinical practices (Cheater & Closs 1997, Ketola et al. 2000a, Poe et al. 2001, Wright et al. 2003, Ward et al. 2005, Wright et al. 2007). In about 40% of health centres, the HT guideline recommendations were discussed in multidisciplinary and professional meetings twice or more, and training was also arranged, which presumably promoted awareness of the guidelines (Grol & Grimshaw 2003, Hansson & Wenström 2005, Hader et al. 2007), and enhanced multidisciplinary collaboration (Cheater & Closs 1997, Poe et al. 2001) and effective communication between care providers (Flottorp et al. 2003, Ross et al. 2005, Ward et al. 2005, Colon-Emeric et al. 2007); all of which are frequently shown to be essential to implementation. In a majority of health centres, information was provided to patients through posters or information events, which have resulted in moderate improvements in practitioners' performance, especially when targeting preventive services (Grimshaw et al. 2004).

The health centres classified as disseminator and implementer varied in two known characteristics: size and organization of services. The disseminator health centres were smaller (most often serving under 10 000 inhabitants) than implementers, and the organization of services was based on a traditional model, in which patients are given appointments with any available physician. Implementer health centres on the other hand were larger (most often serving over 20 000 inhabitants) and the organization of services was based on the family doctor system, under which each physician has his/her own panel of patients. The size and model of organizing services were associated with each other, and may be seen as two sides of the same coin. The size of the health centre was also found to be a differentiating factor in guideline implementation in a previous study conducted in Finnish primary care (Miilunpalo et al. 2001). It might be that larger health centres use more organized and formal means of implementation due to the complexity of the organization, and offer only minor opportunities for informal discussions among colleagues (Estabrooks et al. 2008). Additionally, smaller health centres might have more stable organizations, where the implementation of new ideas are carried out less formally (Redfern & Christian 2003). In conclusion, since associations between implementation style and the adoption of guidelines are not straightforward, the results should be interpreted as merely a description of efforts to implement the HT Guideline conducted in health centres.

6.2.2 Agreements made on implementing HT Guideline recommendations

The senior executives' views on the agreements made on the adoption of the HT Guideline recommendations into clinical practices were not consistent. Views were most consistent regarding precise, simple recommendations, whereas with recommendations requiring more agreement between practitioners working in health centres, the consistency of views was poorer. The chief executive pairs reported that regular calibration of sphygmomanometers and double measurement were adopted into clinical practices in most health centres, and the consistency of their views were good. This uptake of measurement practices was perhaps supported by their precise definition in the HT Guideline (Grol et al. 1998, Fleuren et al. 2004, Michie & Johnstone 2004, Hansson & Wennström 2005). Arranging group counselling (weight loss groups, exercise, and smoking cessation) was common in health centres, weight loss groups being most frequently arranged. However, even though these group counselling practices are relevant to hypertensive patients and emphasized in the guideline, the general health risks related to overweight, smoking, and lack of exercise are also generally well known (Ministry of Social Affairs and Health 2006). Thus, these practices may have been influenced by reasons other than the recommendations in the HT Guideline.

Agreements on recording practices, i.e. recording the follow-up frequency of blood pressure, the target level of blood pressure, and cardiovascular risk evaluation, were

made less often and the views of chief executive pairs were less consistent. The recommendation on recording cardiovascular risk evaluation in patients' files was least often adopted, which is consistent with other research findings (Van Drenth et al. 1998, Ketola et al. 2000a, Langham et al. 2002, Sheerin et al. 2007). More senior nursing officers reported being unaware of the agreements made on recording practices than did head physicians, which may be related to the fact that these tasks are mainly physicians' duties, and that training and discussions regarding them is specifically organized for physicians. Another explanation for nursing officers' unawareness is that senior nursing officers mainly do administrative work, while most head physicians also see patients, and are thus more aware of agreements concerning clinical practices.

Nearly half of the chief executive pairs reported that the implementation of the HT Guideline had led to new divisions of labour between nurses and physicians in their health centre. These arrangements may be crucial to implementation, since agreements made on changing professional groups' responsibilities have also shown to support adherence to guidelines (Kirkman et al. 2002, Ward et al. 2005, Wensing et al. 2006). Changing the responsibilities of professionals is not a simple task and requires multidisciplinary discussions and commitment in order to succeed. Guidelines can enhance these commitments by providing a common knowledge base and sufficient safeguards to different professional groups in task revision (Thomas et al. 1999, Harrison et al. 2002, Wensing et al. 2006).

It would have been interesting to assess associations between the consistency of views and implementation styles, but this was not possible, since identification information was only available on health centres classified as either disseminators or implementers, and willing to participate in further studies. The hypotheses would have been that views of chief executives in implementer health centres were more consistent, since using multiple implementation interventions requires support and many kinds of arrangements by chief executives (Rollman et al. 2005, Hysong et al. 2007), and thus also increases their knowledge on agreements made on implementation.

6.2.3 Nurses' attitudes towards guidelines

The HT Guideline was well known among nurses, and their attitudes towards it in general were highly positive. The most positive attitudes concerned the reliability of guidelines, i.e. guidelines were believed to be made by experts and based on scientific evidence. The argument that guidelines challenge the autonomy of practitioners (Bradshaw 2000, Flynn & Sinclair 2005, Taylor & Allen 2007) was not supported in this study. Furthermore, the criticism of the narrow and biased evidence-base of guidelines (Swinkels et al. 2002, Gupta 2003, Taylor & Allen 2007) and the centrality of medicine (Geanellos 2004) seemed not to affect nurses' confidence in them. The CC Guidelines were thought to be useful as educational tools and a convenient source of advice for nurses, even though

they are predominantly produced and developed by physicians of The Finnish Medical Society Duodecim (Sheldon et al. 2004, Butzlaff et al. 2006).

Many different reasons may have influenced the general awareness and acceptance of the CC Guidelines. First, the guidelines have been widely disseminated in a professional nursing journal as well as in health journals for lay persons. Second, the implementation interventions in health centres have increased the knowledge of and confidence in guidelines (Paper I, III). Third, the new divisions of labour that occurred between nurses and physicians in many health centres (Paper II, IV) might have caused the need for clear recommendations and support in clinical decision-making (Brooks & Anthony 2000, Harrison et al. 2002, McDonald et al. 2005). However, even though nurses were of the opinion that guidelines facilitate communication with patients and families, they were still not in active use in patient counselling (Paper III, IV). The discrepancy between these findings suggests that the knowledge base nurses use to guide their treatment decisions is not shared with patients.

The least positive attitudes towards guidelines concerned their availability and the value given to them in respondents' organizations. This has also been regarded as somewhat problematic in other studies (O'Donnell 2004, Mäkinen et al. 2005, Offerhaus 2005). These were the only aspects in which the attitudes among nurses in disseminator and implementer health centres differed, attitudes being more positive in implementer health centres. This finding can be seen to be fairly predictable in the context of this study, since guidelines presumably became more easily available when multiple implementation interventions were used (Wright et al. 2003, Powell-Cope et al. 2004). Similarly predictable were the more positive attitudes in implementer health centres concerning the valuation of guidelines, since active implementation must surely reflect this in the organization (Flottorp et al. 2003, Grol & Grimshaw 2003, Redfern & Christian 2003, Stone et al. 2004). The more positive attitudes towards guidelines in implementer health centres becomes even more obvious, when one considers that the perceptions of the views of others are an important factor in shaping attitudes (Ajzen 1991, Levin 1999, Puffer & Rashidian 2004). However, in addition to differences in attitudes between nurses in implementer and disseminator health centres, attitudes also differed in connection to the utilization of any single implementation intervention (Paper III). Thus, based on these results, no clear support for the higher effectiveness of multiple interventions versus single interventions, or of any particular single intervention was found. This finding is equivalent to previous research evidence, which has not been able to provide clear conclusions on the effectiveness of implementation interventions (Grimshaw et al. 2004, Francke et al. 2008, Hakkennes & Dodd 2008).

The attitudes towards guidelines were better among nurses who were either very familiar or familiar with the HT Guideline. Whether the attitudes have an impact on willingness

to become familiar with guidelines, or familiarity has an impact on attitudes, remains unclear. It might be that implementation interventions have an impact on both familiarity with guidelines and attitudes towards them.

Nurses' more positive attitudes towards guidelines were demonstrated by more systematic self-reported use of guidelines during patient counselling appointments. These discussions with patients presumably enhance patient awareness of guidelines and involvement in the decision-making regarding their treatment, which have been proposed as being important to implementation (Hobbs & Erhardt 2002, Hader et al. 2007, Chenot et al. 2008). Furthermore, this empowerment of patients could also improve their commitment to treatment, which is crucial in chronic diseases such as hypertension.

Of other nurse characteristics, only age and work experience in the current health centre were associated with guideline attitudes, namely concerning the reliability of guidelines. Older nurses and those with longer work experience considered the guidelines less reliable, and perhaps relied more on experiential knowledge (Gerrish & Clayton 2004).

Nurses' attitudes towards guidelines in Finnish health centres were more positive than in a study conducted ten years earlier (Elovainio et al. 2000), but highly similar to recent studies conducted among chief physicians (Mäkinen et al. 2005) and physicians in Finnish health centres (Jousilahti et al. 2007). Since the positive attitudes towards guidelines are proven to be important predictors of guideline use (Levin 1999, Puffer & Rashidian 2004, Tumiel-Berhalter & Watkins 2006), guideline implementation in Finnish primary care seems to have a solid basis.

6.2.4 HT Guideline implementation - nurses' viewpoint

Nurses' experiences of the implementation of the HT Guideline in their health centres were assessed using the same criteria as those used for chief executives. The values of criteria sum-scores among nurses working in disseminator health centres were lower than those of nurses working in implementer health centres, as assumed. However, the difference was not as considerable as could have been expected, on the grounds of chief executives' responses. The difference in criteria sum-scores between chief executives' and nurses' views can be partly explained by the 2.5 year gap between these two assessments. During this time, new interventions might have taken place in disseminator health centres and some of those conducted previously in implementer health centres might have been forgotten. The wide-ranging differences in views among nurses working in the same health centre could be a reflection of the importance of personal activity in implementation. Participation in meetings and training-sessions can be limited, if the attitudes towards guidelines are not highly positive (Grol & Grimshaw 2003, Puffer & Rashidian 2004, McDonald et al. 2005, Ward et al. 2005, Foley et al. 2006), workload is high (Gerrish & Clayton 2004, Powell-Cope et al. 2004), and perceived ability to change

practices is poor (Gerrish & Clayton 2004, Michie et al. 2004, Puffer & Rashidian 2004).

The patient counselling practices of nurses in disseminator and implementer health centres were highly similar. The majority of nurses reported informing patients of essential lifestyle changes in the treatment of hypertension, as recommended in the guideline, and over half gave written material to patients. However, also only about 50% of nurses informed patients of it. The use of the HT Guideline in patient counselling was not active even though a patient version is easily available on the internet. Counselling practices may be guided by factors other than guidelines, for instance by low expectations of patient compliance (Lahdenperä & Kyngäs 1998, McKenna et al. 2004, Powell-Cope et al. 2004), which can reduce the activeness of guideline use in patient counselling.

Results regarding nurses' views on agreements made on the adoption of HT Guidelines into clinical practices revealed some differences in the adoption of recommendations in disseminator and implementer health centres, but not all of them. Nurses' opinions differed on the adoption of two recommendations concerning recording practices, i.e. recording the follow-up schedule, and recording cardiovascular risk in patient files. Nurses in disseminator health centres were more often of the opinion that no agreements on adopting the recommendations had been made. When nurses' responses are compared to the opinions of chief executives on agreements made on the adoption of recommendations, similarities are found. The most often adopted recommendations were, according to both respondent groups, the measurement practices. Furthermore, views on the least often adopted recommendation; recording cardiovascular risk, were similar even though there was wider variance in the responses within both respondent groups. These similar findings in the studies confirm the wide adoption of simple and precise recommendations, and the problems in implementing the more complicated recommendations (Grol et al. 1998, Van Drenth et al. 1998, Langham et al. 2002, Hansson & Wennström 2005, Sheerin et al. 2007).

The number of nurses unaware that agreements had been made was surprisingly high in both disseminator and implementer health centres, ranging from a fifth to over a third of respondents. This makes the seemingly positive results on the implementation of recommendations questionable: if only a portion of nurses is aware of agreements on recommendation adoptions, can these recommendations be argued as being truly implemented?

6.2.5 Important factors in guideline implementation into nursing practices

Four main groups of factors, those related to (1) the organization, (2) nurses, (3) the anticipated consequences, and (4) the patient group, were identified as important in guideline implementation. The main groups are consistent with previous knowledge

in many ways (Solberg et al. 2000, Fleuren et al. 2004, Ring et al. 2005), but also have unique value as they emphasize the importance of organizational factors and the anticipated consequences of guideline-driven care.

Among factors related to organization, the local adaptation of guidelines (Cheater & Closs 1997, Ketola et al. 2000a, Poe et al. 2001, Ward et al. 2005) and support from management (Flottorp et al. 2003, Grol & Grimshaw 2003, Redfern & Christian 2003, Stone et al. 2004) were frequently discussed as being extremely important to implementation. These two factors are somewhat intertwined, since without management support, local adaptation would probably not take place. However, local adaptation has its own separate importance, since simple flowcharts to guide decision-making were created as a result of it. These flowcharts are shown to improve the clarity of recommendations (Fleuren et al. 2004, Michie & Johnston 2004) and to simplify the output of guidelines (Stone et al. 2005, Simpson & Doig 2007). In addition, the division of labour between nurses and physicians was more clearly manifested in the local house rule than in the national CC Guideline (Flynn & Sinclair 2005, Ward et al. 2005).

Management support was also shown through activities other than those of organizing the local adaptation of guidelines, such as informing nurses about the guidelines, organizing training, and discussions in meetings (Poe et al. 2001, Lee et al. 2002, Wahlström et al. 2003, Waldorff et al. 2003, Hansson & Wenström 2005, Ross et al. 2005), enabling access to Terveysportti (Estabrooks et al. 2003, McKenna et al. 2004), and providing feedback on treatment practices (Lee et al. 2002, Wahlström et al. 2003, Hader et al. 2007); all proven to facilitate guideline implementation.

According to nurses, support from physicians is essential to implementation, even though it has not been always evident. The extent of the lack of physicians' support is somewhat surprising, since physicians' acceptance and use of guidelines in Finland has generally been reported as good (Mäkinen et al. 2005, Jousilahti et al. 2007). Moreover, physicians reported that their knowledge of the HT Guideline in particular was good, and its impact on decision-making strong (Jousilahti et al. 2007).

The anticipated consequences of guideline implementation consisted of benefits to patient care and to nurses' work (Beaulieu et al. 1999, Lee et al. 2002, Fleuren et al. 2004, Greenhalg et al. 2004, Michie et al. 2004, Hader et al. 2007). Patient benefits were more consistent care (O'Connor et al. 1999, Santos et al. 2004, Wright et al. 2007) and increased independence in the follow-up of blood pressure, which in turn freed up nurses' time for patient counselling. The benefits to nurses were more meaningful and independent work, due to the enrichment of their tasks. The expansion of nurses' roles, especially when supported by guidelines, is worth considering, because their performance has been equal or even better than that of physicians when assessed by outcomes of care

(Thomas et al. 1999) or patient satisfaction (Horrocks et al. 2002). Another driving force of role expansion is highly practical - the shortage of physicians in primary care.

Nurses' awareness of guidelines and attitudes towards guidelines have been discussed in connection to previous papers (III, IV). The third factor nurses pointed out was the need for personal commitment in the adoption of guidelines. Nurses discussed the differences in their willingness to attend meetings and participate in training, and to adopt the recommendations, which can partly explain the results of nurses' different opinions on implementation interventions carried in their health centres (Paper III).

Of patient-related factors, the guideline topic was important to nurses. The great number of hypertensive patients and their frequent visits to nurses', especially before the guidelines were adopted and self-measurement practices organized, created the need for change. Thus, the relative advantage of guidelines to practitioners and patients was evident (Beaulieu et al. 1999, Lee et al. 2002, Fleuren et al. 2004, Greenhalg et al. 2004, Michie et al. 2004, Hader et al. 2007). Patients' poor awareness of guidelines and non-compliance with medication and lifestyle changes (Hader et al. 2007) were not discussed as a real barrier to the adoption of and adherence to guidelines, even though temptations to sometimes ignore guidelines and act according to patients' wishes were mentioned. In addition, inadequate resources for patient care, mainly lack of appointments, were occasionally found to impede the accomplishment of patient counselling in the way nurses wished (Rycroft-Malone et al. 2004, Ring et al. 2005).

6.3 Limitations

In **phase I,** the main limitations of the study are related to the data collection instrument (Paper I), criteria for the style of implementation (Paper I), and the inconsistencies in the views of chief executives (Paper II). The data were collected through an interview questionnaire, which was developed for the needs of the study, and the validity or reliability of which had not been tested. Additionally, criteria for the description of the implementation styles of health centres and for the identification of health centres with opposing implementation styles were created by the ECCE consortium, and have not been previously used. However, the main aims of the study; to gain an overview of the extent and style of HT Guideline implementation in Finnish health centres, and to identify the health centres that differed significantly in their styles of implementation were acheived. Even though another instrument or criteria would have given a different classification, it does not pose a major problem to the results, since the aim was only to identify health centres with different styles and not to rank them as active or passive.

Another limitation is that the knowledge of chief executives on the implementation interventions in health centres might not be highly accurate, since their views on the adoption of the HT Guideline recommendations were inconsistent. Due to this, it is

somewhat questionable how widely the recommendations in the HT Guideline are implemented into clinical practices. Furthermore, the self-reported answers might overestimate implementation and thus give a more positive picture of it than it is in reality. However, the commonness of the implementation of different recommendations is presumably correct, because there is no reason to assume that the inconsistencies of views would act differently between recommendations.

In **phase II,** the unwillingness of chief executives to participate in further studies, which was more typical in health centres classified as disseminators, may have biased the results. Even though the reasons for unwillingness are not known, one reason could be the lack of interest in guideline implementation. This may have resulted in under-representation of those health centres in which implementation has not been highly valued. On the other hand, this concern may be unwarranted, since the participating health centres and those not participating did not differ in the known characteristics,. However, unwillingness did cause an unequal number of nurse participants in health centres classified as disseminators and implementers (Papers III, IV). Moreover, the lower response rate in disseminator health centres emphasized the under-representation of nurses in disseminator health centres. Due to over-representation of implementer health centres, and the general tendency to overestimate implementation, the results may give a more positive picture of implementation than it actually is, as discussed in connection to studies on chief executives. Despite these limitations, the knowledge gained from nurses' experiences of HT Guideline implementation and of their attitudes towards guidelines in general are valuable, since this was the first study assessing the implementation of guidelines from nurses' point of view.

Whether the results can be generalized to include all nurses working in out-patient services in Finnish primary care is not self-evident, since the health centres were not randomly sampled and represent only 11% of all health centres in Finland. On the other hand, there is no obvious reason to assume that the participating health centres differ from others in any significant way, and in this sense the results could be valid for Finnish health centres in general.

The main limitations in **phase III** are connected to the credibility of the results. The focus groups were conducted in health centres with presumably very different experiences of guideline implementation, but as the participants were selected by senior nursing officers, they may have been nurses whose attitudes towards the guidelines were most positive, and who had actively participated in implementation. Indeed, this did actually seem to be the case. Furthermore, the selection of the participating health centres was based on knowledge of the HT Guideline implementation styles evaluated 2.5 years before data collection, and did not describe the situation during data collection. However, because the purpose of the study was to gain knowledge regarding nurses' experiences of

important factors in implementation, the possible selectiveness of participants may not only be a limitation, but also a strength.

Another threat to credibility is related to the data analysis, which was mainly carried out by one researcher. We tried to minimize this threat by double-checking the analysis of data collected from one group with another researcher, who was familiar with the content of focus groups as she was the main facilitator in the groups. In addition, the analysis was discussed with two other researchers involved in the study process. The findings identified from the data were in many aspects consistent with previous research knowledge, which might cause suspicions regarding their authenticity. On the other hand, this can also be seen as a confirmation of the findings.

6.4 Conclusions

The HT Guideline seems to be well known in the out-patient services of Finnish primary care, and efforts have been made to implement it into clinical practices. However, the implementation styles used differed widely between health centres. Moreover, nurses' experiences of implementation varied not only between but also within organizations, suggesting that the implementation interventions used in health centres had not reached everyone. An implication of this is that chief executives' views on the adoption of the main HT Guideline recommendation differed a great deal, suggesting that agreements on treatment practices are not sufficiently clear. Since support from managers is regarded as highly important for implementation, intensive co-operation between chief executive pairs is recommended, to guarantee consistent treatment practices among all professionals. Moreover, multidisciplinary interventions should be included in implementation, to create a shared understanding of treatment practices in health centres.

Nurses' attitudes towards guidelines were highly positive; they considered guidelines to be practical working tools in patient care. The least positive attitudes concerned the perceived availability of guidelines and the value given to the guidelines within the organization. The local adaptation of guidelines can be a particularly effective intervention, since the adaptation process itself reflects commitment from an organization, and makes the locally adapted guideline more easily available than the national equivalent. This local adaptation was also further emphasized in nurses' views on the most important factors in the implementation of guidelines. This can improve the practicality of guidelines by defining responsibilities and divisions of labour between different professional groups. The other important feature, which improved the practicality of the local guidelines, was a clear output. Thus, creating a house rule in, for example, an A4 format with a flowchart describing the treatment process should be seriously considered.

Nevertheless, from the scope of this study, enriching and strengthening nurses' roles in the follow-up, and the counselling of patients with chronic diseases is recommended. This

should be considered in particular with patient groups where guidelines are available, since it seems that these new responsibilities have a positive effect on job satisfaction through increasing the meaningfulness of nurses' work. It could also improve patient care, since the constant lack of appointments with physicians is most likely accompanied by inadequate follow-up practices.

6.5 Suggestions for nursing research

The results of the study suggest that CC Guidelines can serve as practical work tools for nurses working in out-patient services in Finnish primary care. However, their actual impact on care practices remained unclear. Further research is needed to clarify the impact of guidelines on clinical practices and patient outcomes.

1. The implementation of the HT Guideline is reported to have led to divisions of labour between nurses and physicians in out-patient services of Finnish primary care. However, the extent of these changes remains somewhat unclear. These new arrangements and changes in responsibilities should be assessed more thoroughly, since they may have an impact on the educational needs of qualified nurses and nursing students. In addition, if the new work arrangements and responsibilities are significant, they may raise the need for extra, more specialized nursing staff.

2. The extent to which the different HT Guideline recommendations were adopted into clinical practices varied. The more complicated recommendations were less frequently adopted than the simpler ones. It would be important to identify the exact barriers to poor implementation of these recommendations in order to help in targeting implementation interventions.

3. Nurses felt that the adoption of the HT Guideline had increased the meaningfulness and independence of their work. Whether this is relevant only to nurses working in out-patient services in primary care, or whether it is a wider phenomenon should be further clarified. In case nurses' job satisfaction can be improved by guideline-based care, implementing guidelines should be a topic issue, because nurses are the largest group of professionals in health care and highly important to the quality of care.

4. The study showed that the HT Guideline had some impact on patient care, but the treatment practices in general and their consistency with guideline recommendations need further assessment. Patient satisfaction regarding guideline-driven care in particular should be clarified.

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APPENDICES

Appendix 1

KOHONNEEN VERENPAINEEN KÄYPÄ HOITO -SUOSITUKSEN KÄYTTÖÖNOTTO TERVEYSKESKUKSISSA

Esimieskysely

Yhteystiedoista tulevat tiedot:
Keskussairaalapiiri _____
Terveyskeskus _____
Väestöpohja _____
Virkanimike _____

A VASTAAJAA JA TYÖYHTEISÖÄ KOSKEVAT TAUSTATIEDOT

1. Kuinka monta vuotta olette työskennellyt terveydenhuoltoalalla? _____vuotta
2. Kuinka monta vuotta olette työskennellyt terveyskeskuksessa? _____vuotta
3. Minkä ikäinen olette? _____vuotta

4. Mikä on korkein ammatillinen tutkintonne?
4.1. tohtori
4.2. lisensiaatti
4.3. maisteri
4.4. kandidaatti
4.5. sairaanhoitaja, AMK -tutkinto
4.6. sairaanhoitaja, opistotasoinen tutkinto
4.7. joku muu tutkinto

5. Osallistutteko kliiniseen työhön? (kysytään vain lääkäreiltä)
5.1. paljon
5.2. jonkin verran
5.3. ette lainkaan

6. Miten asiakkaat ohjautuvat terveyskeskukseenne, onko käytössänne?
6.1. omalääkärijärjestelmä
6.2. perinteinen vastaanottotoiminnan malli
6.3. jokin muu tapa, millainen_____

7. Kuinka suurella osalla terveyskeskuksenne lääkäreistä / hoitajista on työhuoneessaan Internet-yhteys?
7.1. kaikilla
7.2. yli puolella
7.3. noin puolella
7.4. alle puolella
7.5. ei kenelläkään
7.6. en osaa sanoa

8. Onko terveyskeskuksessanne käytössä Terveysportti?
8.1. kyllä
8.2. ei
8.3. en osaa sanoa
jos 8.2. tai 8.3. **Onko terveyskeskuksessanne intranetissä Lääkärin CD?**
1. kyllä
2. ei
3. en osaa sanoa

9. Arvioikaa keskimääräinen terveyskeskuksenne tai terveysasemanne lääkärien / hoitajien virkojen täyttöaste viimeisen kahden vuoden aikana. Onko
9.1. kaikki virat täytetty
9.2. lähes kaikki virat täytetty
9.3. huomattava osa viroista täyttämättä

B KOHONNEEN VERENPAINEEN KÄYPÄ HOITO-SUOSITUKSEN KÄYTTÖÖNOTTO

10. Mikä seuraavista kohonneen verenpaineen hoitosuosituksista on käytössänne?
(voi valita useamman vaihtoehdon)
10.1. Duodecimin Käypä hoito –suositus sellaisenaan → kysymys 12
10.2. yhteistyössä sairaanhoitopiirin kanssa laadittu hoitoketju, joka perustuu Käypä hoito –suositukseen
10.3. terveyskeskuksen oma hoito-ohje, joka perustuu Käypä hoito –suositukseen
10.4. jokin muu hoitosuositus, mikä_____
10.5. ei mikään → kysymys 14
10.6. en osaa sanoa → kysymys 14

11. Onko käytössänne olevan kohonneen verenpaineen hoitosuosituksen laatimiseen osallistunut?
11.1. Terveyskeskuksenne lääkäreitä?
11.1.1. kyllä
11.1.2. ei
11.1.3. en osaa sanoa
11.2. Terveyskeskuksenne terveyden- tai sairaanhoitajia?
11.2.1. kyllä
11.2.2. ei
11.2.3. en osaa sanoa
11.3. Potilasjärjestöjen edustajia?
11.3.1. kyllä
11.3.2. ei
11.3.3. en osaa sanoa

12. Onko terveyskeskuksessanne nimetty vastuuhenkilöä, ryhmää tai työparia huolehtimaan kohonneen verenpaineen hoitosuosituksen päivittämisestä?
12.1. kyllä → **Tiedättekö kuka tai ketkä siitä huolehtivat?** 12.1.1. kyllä
12.1.2. en
12.2. ei
12.3. en osaa sanoa

C POTILAILLE JA VÄESTÖLLE TIEDOTTAMINEN KOHONNEEN VERENPAINEEN KÄYPÄ HOITO –SUOSITUKSESTA

13. Annetaanko potilaille kirjallinen ohje kohonneen verenpaineen hoidosta?
13.1. aina
13.2. useimmiten
13.3. harvoin
13.4. ei koskaan
13.5. en osaa sanoa

14. Mikä potilasohje terveyskeskuksessanne on käytössä?
(voi valita useamman vaihtoehdon)
14.1. Käypä hoito –suosituksen potilasversio
14.2. Sydänliiton ohje
14.3. lääketehtaan ohje
14.4. lääkärin tietokannan potilasohje
14.5. itse tehty potilasohje
14.6. joku muu ohje, mikä_____
14.7. en osaa sanoa

15. Onko kohonneen verenpaineen hoitosuosituksesta potilasohje terveyskeskuksenne Internet-sivuilla?
15.1. kyllä
15.2. ei
15.3. ei Internet-sivuja
15.4. en osaa sanoa

16. Onko kohonneen verenpaineen hoitosuosituksesta laitettu tietoa vastaanottotiloihin?
(esim. julisteina, esitteinä tai kirjallisina ohjeina)
16.1. kyllä
16.2. ei

17. Käytetäänkö terveyskeskuksessanne kohonneen verenpaineen potilasohjauksessa jotakin seuraavista menetelmistä?
17.1. Internet-pohjaista neuvontaa
17.2. puhelinneuvontaa
17.3. jotakin muuta, mitä_____

18. Onko terveyskeskuksenne tiedottanut kohonneen verenpaineen Käypä hoito – suosituksesta viimeisen kahden vuoden aikana?
18.1. paikallislehdissä
18.1.1. kyllä
18.1.2. ei
18.2. alueradiossa tai alue-tv:ssä
18.2.1. kyllä
18.2.2. ei
18.3. potilasjärjestöjen tilaisuuksissa
18.3.1. kyllä
18.3.2. ei
18.4. terveyskeskuksen omissa yleisötilaisuuksisssa
18.4.1. kyllä
18.4.2. ei

D KOHONNEEN VERENPAINEEN KÄYPÄ HOITO –SUOSITUKSEEN PEREHTYMINEN JA KOULUTUS

19. Tunnetteko itse kohonneen verenpaineen Käypä hoito –suosituksen?
19.1. erittäin hyvin
19.2. hyvin
19.3. puutteellisesti
19.4. ette lainkaan
19.5. en osaa sanoa

20. Onko terveyskeskuksessanne käsitelty kohonneen verenpaineen nykyisen Käypä hoito -suositusta viimeisen kahden vuoden aikana?
20.1. lääkäreiden / hoitajien kokouksissa
20.1.1. kaksi kertaa tai useammin
20.1.2. kerran
20.1.3. ei kertaakaan
20.1.4. en osaa sanoa
20.2. moniammatillisissa kokouksissa
20.2.1. kaksi kertaa tai useammin
20.2.2. kerran
20.2.3. ei kertaakaan
20.2.4. en osaa sanoa

21. Käytetäänkö kohonneen verenpaineen Käypä hoito –suositusta uuden henkilökunnan perehdytyksessä?
21.1. aina
21.2. useimmiten
21.3. ei koskaan
21.4. en osaa sanoa

22. Onko lääkäreille / hoitajille tarjottu koulutusta kohonneen verenpaineen Käypä hoito -suosituksesta vuoden 2002 jälkeen?
22.1. terveyskeskuksenne järjestämänä
22.1.1. kyllä
22.1.2. ei → kysymys 23
22.1.3. en osaa sanoa → kysymys 23
22.2. onko siihen osallistuttu
22.2.1. kyllä
22.2.2. ei → kysymys 23
22.2.3. en osaa sanoa → kysymys 23
22.3. onko osallistuminen tapahtunut
22.3.1. omalla ajalla
22.3.2. työajalla
22.3.3. molemmilla
22.3.4. en osaa sanoa

23. Onko lääkäreille / hoitajille tarjottu koulutusta kohonneen verenpaineen Käypä hoito -suosituksesta vuoden 2002 jälkeen?
23.1. sairaanhoitopiirin järjestämänä
23.1.1. kyllä
23.1.2. ei → kysymys 24
23.1.3. en osaa sanoa → kysymys 24
23.2. onko siihen osallistuttu
23.2.1. kyllä
23.2.2. ei → kysymys 24
23.2.3. en osaa sanoa → kysymys 24
23.3. onko osallistuminen tapahtunut
23.3.1. omalla ajalla
23.3.2. työajalla
23.3.3. molemmilla
23.3.4. en osaa sanoa

24. Onko lääkäreille / hoitajille tarjottu koulutusta kohonneen verenpaineen Käypä hoito -suosituksesta vuoden 2002 jälkeen?
24.1. valtakunnallisesti järjestettynä
24.1.1. kyllä
24.1.2. ei → kysymys 25
24.1.3. en osaa sanoa → kysymys 25
24.2. onko siihen osallistuttu
24.2.1. kyllä
24.2.2. ei → kysymys 5
24.2.3. en osaa sanoa → kysymys 25
24.3. onko osallistuminen tapahtunut
24.3.1. omalla ajalla
24.3.2. työajalla
24.3.3. molemmilla
24.3.4. en osaa sanoa

25. Antakaa kouluarvosana neljästä kymmeneen (4-10) kohonneen verenpaineen Käypä hoito -suosituksen käyttöönotolle terveyskeskuksessanne? _____

E KOHONNEEN VERENPAINEEN HOIDON SEURANTA JA ELINTAPAOHJAUS

26. Onko kohonneen verenpaineen Käypä hoito –suositus aiheuttanut muutoksia terveyskeskuksenne lääkärien ja hoitajien välisessä työnjaossa?
(ei kysytä, jos kysymys 10 = 5)
26.1. kyllä
26.2. ei

27. Kalibroidaanko terveyskeskuksenne verenpainemittarit vähintään joka toinen vuosi?
27.1. kyllä
27.2. ei
27.3. en osaa sanoa

28. Käytetäänkö terveyskeskuksessanne verenpaineen mittauksessa kaksoismittausta?
28.1. kyllä
28.2. ei
28.3. en osaa sanoa

29. Onko terveyskeskuksessanne sovittu, että potilaan sairauskertomukseen kirjataan?
29.1. verenpaineen seurantaväli
29.1.1. kyllä
29.1.2. ei
29.1.3. en osaa sanoa
29.2. verenpaineen tavoitetaso
29.2.1. kyllä
29.2.2. ei
29.2.3. en osaa sanoa
29.3. potilaan sydän- ja verisuonitautien kokonaisriski
(arvio riskitekijöiden yhteisvaikutuksesta tai esim. Framingham tai SCORE-luokitus)
29.3.1. kyllä
29.3.2. ei
29.3.3. en osaa sanoa

30. Järjestetäänkö terveyskeskuksessanne seuraavia elintapaohjauksen ryhmiä?
30.1. tupakkavierotusryhmiä
30.1.1. säännöllisesti
30.1.2. satunnaisesti
30.1.3. ei lainkaan
30.1.4. en osaa sanoa
30.2. painonhallintaryhmiä
30.2.1. säännöllisesti
30.2.2. satunnaisesti
30.2.3. ei lainkaan
30.2.4. en osaa sanoa
30.3. liikuntaryhmiä
30.3.1. säännöllisesti
30.3.2. satunnaisesti
30.3.3. ei lainkaan
30.3.4. en osaa sanoa
30.4. diabetesryhmiä
30.4.1. säännöllisesti
30.4.2. satunnaisesti
30.4.3. ei lainkaan
30.4.4. en osaa sanoa
30.5. verenpaineryhmiä
30.5.1. säännöllisesti
30.5.2. satunnaisesti
30.5.3. ei lainkaan
30.5.4. en osaa sanoa

Appendix 2

Appendix 2 1(1)

Hoitotyön esimiehille osoitettavat kysymykset puhelinkontaktin yhteydessä:

Nimi_____puh_____
Osoite_____
Soittopvm_____

1. **Montako sairaan- tai terveydenhoitajaa työskentelee terveyskeskuksenne avovastaanotolla?**
   (ei osastotyössä, lasten- tai äitiysneuvolassa tms. työskentelevät) ____

2. **Onko terveyskeskuksenne käytössä**

   2.1. omalääkärijärjestelmä
   2.2. perinteinen vastaanottotoiminnan malli

3. **Toimitaanko terveyskeskuksessanne avovastaanotolla lääkäri-hoitaja työpareina?**

   1 kyllä
   2 ei

4. **Arvioikaa keskimääräinen terveyskeskuksenne tai terveysasemanne hoitajien virkojen täyttöaste viimeisen kahden vuoden aikana? Onko:**

   1 kaikki virat täytetty
   2 lähes kaikki virat täytetty
   3 huomattava osa viroista täyttämättä
   4 en osaa sanoa

5. **Onko kohonneen verenpaineen Käypä hoito –suosituksen pohjalta tehty uutta työnjakoa lääkärien ja hoitajien välillä**

   1 kyllä
   2 ei
   3 en osaa sanoa

   millaisia työnjakomuutoksia?
   _____
   _____
   _____
   _____
   _____

Appendix 3

Lomaketunnus___

KOHONNEEN VERENPAINEEN HOITOKÄYTÄNNÖT, TYÖYKSIKÖN TOIMINTATAVAT JA HOITOSUOSITUSASENTEET TERVEYSKESKUKSISSA

Vastaajaa ja työyhteisöä koskevat taustatiedot

Ympyröi sopivin vastausvaihtoehto tai kirjoita vastauksesi sille varatulle tyhjälle riville.

1. Virkanimikkeesi

1 sairaanhoitaja
2 terveydenhoitaja
3 jokin muu, mikä _____

2. Montako vuotta olet työskennellyt terveydenhuoltoalalla? ____vuotta

3. Montako vuotta olet työskennellyt tässä terveyskeskuksessa? ____vuotta

4. Minkä ikäinen olet? ____ vuotta

5. Oletko

1 mies
2 nainen

Kohonneen verenpaineen hoitosuosituksen käsittely ja hoitokäytännöt terveyskeskuksessa

6. Mikä seuraavista kohonneen verenpaineen hoitosuosituksista on käytössänne?
(voit valita useamman vaihtoehdon)

1 Duodecimin Käypä hoito -suositus sellaisenaan
2 yhteistyössä sairaanhoitopiirin kanssa laadittu hoitoketju, joka perustuu Käypä hoito -suositukseen
3 terveyskeskuksen oma hoito-ohje, joka perustuu Käypä hoito -suositukseen
4 jokin muu hoitosuositus, mikä?_____
5 ei mikään
6 en osaa sanoa

7. Oletko osallistunut käytössänne olevan hoitosuosituksen laatimiseen?

1 kyllä
2 en
3 hoitosuositusta ei ole käytössä

8. Onko terveyskeskuksessanne nimetty vastuuhenkilöä, ryhmää tai työparia huolehtimaan kohonneen verenpaineen hoitosuosituksen päivittämisestä?

1 kyllä
2 en
3 en osaa sanoa

9. Käytetäänkö kohonneen verenpaineen hoitosuositusta uuden henkilökunnan perehdytyksessä?

1 aina
2 useimmiten
3 harvoin
4 ei koskaan
5 en osaa sanoa

10. Kuinka hyvin tunnet kohonneen verenpaineen Käypä hoito -suosituksen?

1 erittäin hyvin
2 hyvin
3 puutteellisesti
4 en lainkaan

11. Kuinka usein kohonneen verenpaineen Käypä hoito -suositusta on käsitelty hoitotyön kokouksissa?

1 kaksi kertaa tai useammin
2 kerran
3 ei kertaakaan
4 en osaa sanoa

12. Kuinka usein kohonneen verenpaineen Käypä hoito -suositusta on käsitelty moniammatillisissa kokouksissa?

1 kaksi kertaa tai useammin
2 kerran
3 ei kertaakaan
4 en osa sanoa

13. Oletko osallistunut terveyskeskuksessanne järjestettyyn Käypä hoito -suositusta koskevaan koulutukseen?

1 kyllä
2 en
3 koulutusta ei ole järjestetty

14. Onko kohonneen verenpaineen Käypä hoito -suosituksesta laitettu tietoa potilaille vastaanottotiloihin esimerkiksi julisteina, esitteinä tai kirjallisina ohjeina?

1 kyllä
2 ei

15. Onko terveyskeskuksenne tiedottanut kohonneen verenpaineen Käypä hoito -suosituksesta viimeisen kahden vuoden aikana

a. paikallislehdissä?

1 kyllä
2 ei

b. entä alueradiossa tai alue-tv:ssä?

1 kyllä
2 ei

c. potilasjärjestöjen tilaisuuksissa

1 kyllä
2 ei

d. terveyskeskuksen omissa yleisötilaisuuksissa

1 kyllä
2 ei

16. Kuinka usein kerrot verenpainepotilaille kohonneen verenpaineen Käypä hoito -suosituksesta?

1 usein
2 melko usein
3 silloin tällöin
4 melko harvoin
5 en koskaan

17. Ovatko potilaat kysyneet uudesta kohonneen verenpaineen Käypä hoito –suosituksesta?

1 kyllä
2 ei

18. Annatko potilaillesi kirjallisen ohjeen kohonneen verenpaineen hoidosta?

1 aina
2 useimmiten
3 harvoin
4 ei koskaan
5 en osaa sanoa

19. Kalibroidaanko terveyskeskuksenne verenpainemittarit vähintään joka toinen vuosi?

1 kyllä
2 ei
3 en osaa sanoa

20. Onko terveyskeskuksenne sovittu, että potilaan sairaskertomukseen kirjataan verenpaineen seurantaväli (=hoitosuunnitelma)?

1 kyllä
2 ei
3 en osaa sanoa

21. Onko terveyskeskuksenne sovittu, että potilaan sairaskertomukseen kirjataan verenpaineen tavoitetaso?

1 kyllä
2 ei
3 en osaa sanoa

22. Onko terveyskeskuksenne sovittu, että potilaan sairaskertomukseen kirjataan potilaan sydän- ja verisuonitautien kokonaisriski?

1 kyllä
2 ei
3 en osaa sanoa

23. Käytätkö verenpaineen mittauksessa kaksoismittausta?

(paine mitataan kahdesti 1-2 minuutin välein, näiden keskiarvo tai molemmat tulokset merkitään ylös)

1 kyllä
2 en

24. Kuinka säännöllisesti terveyskeskuksessanne järjestetään seuraavia elintapaohjauksen ryhmiä?

A Tupakkavieroitusryhmiä?

1 säännöllisesti
2 satunnaisesti
3 ei lainkaan
4 en osaa sanoa

B Painonhallinta- ja/tai ravitsemusneuvontaryhmiä?

1 säännöllisesti
2 satunnaisesti
3 ei lainkaan
4 en osaa sanoa

25. Kuinka usein annat kohonnutta verenpainetta sairastaville potilaillesi elintapaohjausta?

1 usein
2 melko usein
3 silloin tällöin
4 melko harvoin
5 en koskaan

Asennoituminen hoitosuosituksiin

Seuraavaksi Sinulle esitetään hoitosuosituksia koskevia väittämiä. Laita rasti (X) mielestäsi sopivimman vastausvaihtoehdon kohdalle.

	Olen täysin eri mieltä	**Olen eri mieltä**	**Olen jossain määrin eri mieltä**	**Ei eri eikä samaa mieltä**	**Olen jossain määrin samaa mieltä**	**Olen samaa mieltä**	**Olen täysin samaa mieltä**
Hoitosuositukset ovat hyödyllisiä opetusvälineitä.	1	2	3	4	5	6	7
Hoitosuosituksista saa kätevästi neuvoja.	1	2	3	4	5	6	7
Hoitosuositukset voivat helpottaa vuorovaikutusta potilaiden ja omaisten kanssa.	1	2	3	4	5	6	7
Hoitosuositukset voivat parantaa terveydenhoidon laatua.	1	2	3	4	5	6	7
Hoitosuositukset perustuvat tieteellisesti todistettuun aineistoon.	1	2	3	4	5	6	7
Hoitosuositukset ovat asiantuntijoiden tekemiä.	1	2	3	4	5	6	7
Ammatillinen pätevyyteni on riittämätön, jotta voisin ottaa käyttööni viimeisimmät hoitosuositukset.	1	2	3	4	5	6	7
Useimmilla ryhmämme jäsenillä on kielteinen asenne hoitosuosituksiin.	1	2	3	4	5	6	7
Organisaatioissamme ei arvosteta hoitosuosituksia.	1	2	3	4	5	6	7
Hoitosuositusten toteuttaminen on liian kallista meille.	1	2	3	4	5	6	7
Hoitosuositukset rajoittavat hoitotyöntekijöiden itsenäisyyttä.	1	2	3	4	5	6	7
Hoitosuositukset antavat liian yksinkertaisen kuvan käytännön lääketieteestä.	1	2	3	4	5	6	7
Hoitosuosituksia on vaikea löytää tarvittaessa.	1	2	3	4	5	6	7
En ole nähnyt hoitosuosituksia terveydenhoitoyksikössämme.	1	2	3	4	5	6	7

Appendix 4

Käypä hoito - suositusten käyttöönotto terveyskeskuksissa

Arvoisa vastaanottaja

Helsingin yliopiston kansanterveystieteen laitoksen johtamassa tutkimushankkeessa, jonka tukijoina ovat Suomen Akatemia ja Lääkäriseura Duodecim, selvitetään vuonna 2002 julkaistun Kohonneen verenpaineen Käypä hoito –suosituksen käyttöönottoa Suomen terveyskeskuksissa.

Tutkimuksen ensimmäisen vaiheen kohderyhmänä olivat kaikkien Suomen terveyskeskusten avoterveydenhuollon ylilääkärit ja ylihoitajat tai vastaavat henkilöt, jotka olivat vastuussa hoitosuositusten käyttöönotosta. Tutkimus toteutettiin puhelinhaastatteluna loka-marraskuussa 2004. Haastattelun yhteydessä terveyskeskuksenne ylilääkäri tai ylihoitaja on antanut suostumuksen jatkotutkimukseen osallistumiseen.

Tässä tutkimuksen toisessa vaiheessa kohderyhmänä ovat kaikki **avoterveydenhuollossa verenpainepotilaita hoitavat sairaan- ja/tai terveydenhoitajat** ja **kaikki terveyskeskuksen lääkärit**. Tutkimuksessa selvitetään kohonneen verenpaineen hoitosuosituksen käyttöönottoa ja verenpainepotilaiden hoitokäytäntöjä terveyskeskuksessanne sekä hoitosuositusasenteita ja työyksikön toimintatapoja. Tutkimus toteutetaan lomakekyselynä.

Kyselylomakkeiden yläreunassa on terveyskeskuksellenne annettu tunnistekoodi vastausaktiivisuuden seuraamiseksi. Yksittäisten vastaajien henkilöllisyyttä tutkijat eivät kuitenkaan tiedä ja tutkimustulokset raportoidaan ryhmätasolla niin, ettei myöskään yksittäisten terveyskeskusten vastauksia voida tunnistaa tuloksista. Tutkimustuloksista kirjoitetaan artikkeleita sekä kansainvälisiin julkaisuihin että suomenkielisiin lehtiin.

Olemme olleet puhelimitse yhteydessä terveyskeskuksenne ylihoitajaan, hoitotyön johtajaan tai muuhun hoitotyöstä vastaavaan henkilöön, joka on lupautunut jakamaan kyselylomakkeet teille. Pyydämme Teitä palauttamaan lomakkeen oheisessa kirjekuoressa, jonka postimaksu on maksettu. Toivomme Teidän osallistuvan tutkimukseen, joka tuottaa arvokasta tietoa Käypä hoito -suositusten käyttöönotosta perusterveydenhuollossa. Osallistumisenne on erittäin tärkeää myös kohonneen verenpaineen hoitokäytäntöjen kehittämisen kannalta

Yhteistyöstä kiittäen!

Lisätietoja tutkimuksesta antavat Kohonneen verenpaineen Käypä hoito -suosituksen käyttöönoton tutkimusryhmän jäsenet

Jarja Ijäs	Seija Alanen	Riitta Johannala-Kemppainen
LL, yleislääketieteen erikoislääkäri	TtM osastonhoitaja	ThM ylihoitaja
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Appendix 5

Käypä hoito - suositusten käyttöönotto terveyskeskuksissa

Arvoisa vastaanottaja

Helsingin yliopiston kansanterveystieteen laitoksen johtamassa tutkimushankkeessa, jonka tukijoina ovat Suomen Akatemia ja Lääkäriseura Duodecim, on selvitetty vuonna 2002 julkaistun Kohonneen verenpaineen Käypä hoito –suosituksen käyttöönottoa Suomen terveyskeskuksissa. Nyt on meneillään kyseisen tutkimushankkeen viimeinen hoitohenkilöstöä koskeva vaihe. Tarkoituksenamme on selvittää millaiset tekijät edistävät tai estävät hoitosuositusten käyttöönottoa perusterveydenhuollon hoitotyössä.

Tutkimuksen ensimmäisen vaiheen kohderyhmänä olivat kaikkien Suomen terveyskeskusten avoterveydenhuollon ylilääkärit ja ylihoitajat tai vastaavat henkilöt, jotka olivat vastuussa hoitosuositusten käyttöönotosta. Tutkimus toteutettiin puhelinhaastatteluna loka-marraskuussa 2004. Haastattelun yhteydessä terveyskeskuksenne ylilääkäri tai ylihoitaja antoi suostumuksen jatkotutkimukseen osallistumiseen. Jatkotutkimuksessa huhti-elokuussa 2006 selvitettiin yhteensä 32 valitun terveyskeskuksen hoitohenkilöstön näkemyksiä kyseisen hoitosuosituksen käyttöönotosta ja heidän hoitosuositusasenteitaan.

Tämän viimeisen tutkimusvaiheen kohdejoukkona on 4 - 6 terveysaseman terveyden- ja sairaanhoitajat, jotka tapaavat työssään kohonnutta verenpainetta sairastavia potilaita. Tutkimus toteutetaan ryhmähaastatteluna ja osallistuminen ryhmähaastatteluun on vapaaehtoista. Haastattelut toteutetaan terveysasemanne tiloissa ja haastattelut toteutetaan työajalla. Haastatteluun varataan aikaa noin 1,5 - 2 h. Tarkan ajankohdan ilmoitamme teille myöhemmin. Toivomme voivamme nauhoittaa haastattelut tutkimusaineiston luotettavuuden varmistamiseksi. Syntyneitä tallenteita ja niistä puhtaaksikirjoitettua tutkimusaineistoa käsitellään niin, että vain tutkimuksen vastuuhenkilöt pääsevät tutustumaan niihin. Tutkimustulokset raportoidaan ryhmätasolla eikä yksittäistä haastateltavaa tai terveyskeskusta voida tunnistaa tuloksista. Tutkimustuloksista kirjoitetaan artikkeleita sekä kansainvälisiin julkaisuihin että suomenkielisiin lehtiin.

Toivomme Teidän osallistuvan tutkimukseen, joka tuottaa arvokasta tietoa Käypä hoito -suositusten käyttöönotosta perusterveydenhuollossa. Osallistumisenne on erittäin tärkeää myös kohonneen verenpaineen hoitokäytäntöjen kehittämisen kannalta.

Yhteistyöstä kiittäen!

Lisätietoja tutkimuksesta antavat haastattelijat, jotka ovat Kohonneen verenpaineen Käypä hoito -suosituksen käyttöönoton tutkimusryhmän jäseniä

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