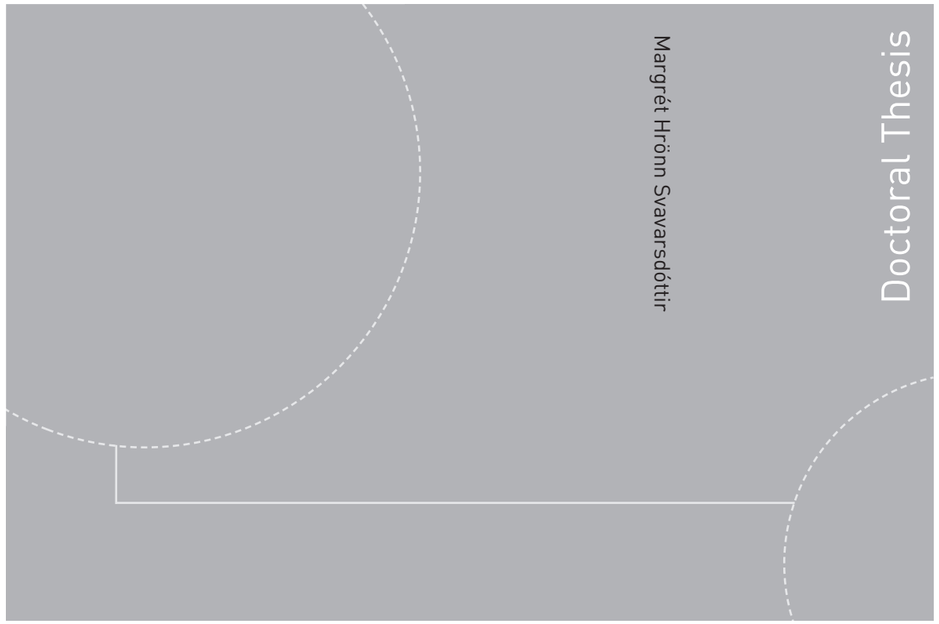
ISBN 978-82-326-1370-0 (printed version)
ISBN 978-82-326-1371-7 (electronic version)
ISSN 1503-8181



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Competence development in patient education

The perspective of health professionals and patients with experience in patient education in cardiac care

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Thesis for the degree of Philosophiae Doctor

Trondheim, January 2016

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Printed by Skipnes Kommunikasjon as

KOMPETANSEUTVIKLING I PASIENTOPPLÆRING

Perspektiv fra helsepersonell og pasienter med erfaring fra pasientopplæring i hjertebehandling

Hjerte- og karsykdommer er den hyppigste årsaken for død og funksjonshemming i dag. Sykdommen er sterkt relatert til usunn livsstil og forverring kan forebygges med sunnere livsstil. Likevel er det flere pasienter som ikke klarer å endre livstil. Pasientopplæring kan øke kunnskap om sykdommen, gi hjelp til endring av holdninger som fører til livsstilsendringer og gi bedre helse og livskvalitet. Derfor er ferdigheter i pasientopplæring en veldig viktig del av helsepersonells faglige kompetanse. Få studier har undersøkt hvilken kompetanse helsepersonell trenger innen pasientopplæring til pasienter med hjerte- og karsykdommer, og hvordan de bør trene på slike ferdigheter.

Hovedmålet med denne avhandlingen var derfor å undersøke hvilke kunnskap og ferdigheter helsepersonell trenger for å planlegge og utføre pasientopplæring til pasienter med nylig diagnostisert hjerte- og karsykdom, hvordan pasienter og helsepersonell beskriver en som er ekspert i pasientopplæring og helsepersonell sitt syn på hvordan man bør trene ferdigheter i pasientopplæring.

Det ble gjennomført to kvalitative studier med semi-strukturert individuell intervju med 19 sykepleiere, fysioterapeuter og kardiologer med erfaring i pasientopplæring og 17 pasienter med hjerte- karsykdom som har deltatt på formell pasientopplæring etter utskriving fra sykehus. Det ble gjort et strategisk utvalg av deltagere fra Island og Norge.

Studiene viste at både pasienter og helsepersonell oppfatter en som er god i pasientopplæring på samme måte. Den er oppdatert teoretisk, har klinisk kunnskap og har svært gode kommunikasjonsevner. De mente også at det er grunnleggende å ha evne til å opprette et godt klima for dialog, etablere kontakt med pasienten og skape tillit og troverdighet. Å være sensitive til pasientens læringsbehov og ha ferdigheter til å tilrettelegge for effektive dialog, individualisere og møte hver enkelt pasients læringsbehov på en måte de forstår, ble også beskrevet som en grunnleggende kompetanse. Pasienten ønsker seg individuell pasientopplæring fra helsepersonell som er spesialisert i hjertebehandling og i tillegg har klinisk erfaring. Dette ble også sett på som viktig av helsepersonellet. Helsepersonell i studien mente at helsearbeidere trenger effektiv trening og opplæring for å tilegne seg de egenskapene som trengs for å klare å motivere til livsstilsendringer hos pasienter med hjerte- og karsykdommer. Motivasjon, støttende læringsmiljø, eksperimental læring, tverrfaglig samarbeid og veiledning fra helsepersonell med god erfaring i pasientopplæring, var sett på som en viktig del i kompetanseutvikling i pasientopplæring.

Kandidat: Margrét Hrönn Svavarsdóttir
Institutt: Institutt for samfunnsmedisin
Veiledere: Professor Aslak Steinsbekk, Institutt for samfunnsmedisin, NTNU.
Professor Árún K. Sigurðardóttir, Universitetet i Akureyri, Island.
Finansieringskilde: Samarbeidsorganet

Ovennevnte avhandling er funnet verdig til å forsvares offentlig
for graden PhD i samfunnsmedisin
Disputas finner sted i Auditoriet (MTA), Norwegian Brain Centre (MTFS)
Fredag 29. januar 2016, kl. 12.15

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ACKNOWLEDGMENTS

Writing this thesis has been a challenging and exciting journey. Many people have supported me and contributed to the thesis in many different ways; all deserve my gratitude.

First, I want to thank all the generous people who were willing to take the time to participate in this study and share their experiences in the interviews. You made this work possible.

This thesis was written in my position as research fellow at Norwegian University of Science and Technology (NTNU) and supported by a grant from the Central Norway Regional Health Authority. Many thanks for giving me the opportunity to do this work.

I would like to express my sincere gratitude and appreciation to my primary supervisor, Professor Aslak Steinsbekk of the Department of Public Health and General Practice, NTNU. Your critical and reflective thoughts and constructive feedback have helped immensely in my development as a researcher and been of great value in writing this thesis. Throughout the process, you have inspired me and shared your knowledge and insight, showing me by your example how to be an excellent supervisor. I am also very grateful to my co-supervisor and good friend, Professor Árún K. Sigurðardóttir at the School of Health Sciences, University of Akureyi (UNAK). Thank you for your reflective discussions, reliably good advice, and especially your support, endless encouragement, and friendship. Thank you both, Aslak and Árún, for believing in me, sharing your expertise, and always having time to read and discuss my work.

Special thanks also go to all my colleagues in the Research Group for Patient Education and Participation in the Department of Public Health and General Practice, NTNU. Thank you for kindly welcoming me to your research group. It has been a great pleasure for me to work with you for these three years. Thank you for sharing your knowledge and experience; your contributions make up a great part of this thesis.

Special thanks to my good friend and fellow student Hege Therese Bell who has followed me on this journey. Thank you for many exciting discussions and your constant good spirits, and thanks to you and your family for your kindness in welcoming me to your home. I also wish to thank my fellow students and friends Stine Gundrosen and Erik Roos for productive group work and inspiring discussions over the last three years. Thanks to all three of you for wonderful times and for being my friends.

My gratitude goes to the nurses who helped recruit the participants for this study; Kolbrún Sigurlásdóttir at Akureyri Hospital, Marit Husby at St. Olavs Hospital in Trondheim, and Mikael German at Lillehammer Hospital. Thank you all for your time and effort.

Thanks to my colleagues at University of Akureyri for holding my position while I worked on this thesis. Your warm welcome when I returned to work at UNAK will always mean a great deal to me.

Finally, but hardly least, my thanks go to my beloved family, my husband and best friend Björn and my three wonderful daughters Kristrún María, Harpa, and Gígja. Thank you for your patience and for always being so supportive. Thank you for being you and for all your love, encouragement, and support. You are the joy of my life.

SUMMARY

Background

Coronary heart disease (CHD) remains the leading cause of death and disability in Europe. Evidence suggest that its progress can be slowed or reversed through lifestyle changes and treatment of risk factors. As a facilitator of lifestyle change and risk factor reduction, patient education is a core component in secondary prevention of CHD. Thus, health professionals with the competence to provide quality patient education are central to meeting patients' needs. However, research on what type of competencies and how they should be developed remains lacking.

Aim

The aim of this thesis was to investigate, first, health professionals and patients' views on the knowledge and skills necessary for being a good educator for adults recently diagnosed with CHD and, second, health professionals' views on how competencies in patient education should be developed.

Methods

This thesis builds on two qualitative studies, using semi-structured individual interviews with 19 health professionals experienced in patient education in cardiac care and 17 patients who had been through a percutaneous coronary intervention and participated in formal patient education. Purposeful sampling was used to recruit participants from Iceland and Norway. The interviews were audiotaped and transcribed verbatim. The data were analyzed using systematic text condensation.

Results

There was a common consensus among the participants that combining sound, updated theoretical and clinical knowledge with good communication skills were essential characteristics of a good educator. Specific skills included being able to establish trusting relationships with patients, capturing their learning needs, facilitating effective dialogue, and providing individualized patient education. The patients' preferred individualized, face-to-face patient education from a health professional specialized in cardiac care. Both health professionals and patients described the ability to tailor education to each patient's needs and context as the most important characteristics of a good

educator. In addition, the patients saw a good educator as trustworthy and able to translate general information to their personal situation in lay language. Building trust was dependent on patients' perceiving the educator to be knowledgeable and good at connecting with the individual patient, so that the patients felt that they were being treated as a whole person with equality and respect. The health professionals also saw this as an important aspect. A supportive learning environment, experiential training, inter-professional cooperation, and mentoring from experienced educators were cited as examples of resources that enhance competence development.

Conclusion

According to patients with CHD and health professionals with experience in providing patient education, competence in patient education requires evidence-based knowledge and clinical experience in cardiology. The participants described good educators as trustworthy, with advanced communication skills that enable them to motivate and connect with the individual patient and the ability to tailor patient education. A supportive learning environment and inner motivation were considered the main factors required to become an expert educator.

Implications for practice and research

The findings in this thesis build upon prior research to indicate that there is a need for organized continuing education in patient education for both novices and experts. Continuing education should aim at developing competence in patient-centered communication, building trusting patient-provider relationships, and establishing professional credibility, with a clear focus on a holistic view of patients and how to support their emotional well-being. At the expert level, training should focus on supporting and mentoring novice educators. We suggest that continuing educational programs in patient education should combine theoretical learning, experiential instruction, and operate in a supportive learning environment. Further research is needed to understand more fully how the identified competences relate to the various roles of educators, educational settings, and the disease continuum. Research is also needed to understand the connection between health professionals' own ideas of quality patient educational practice and the obstacles of competence development and what is feasible in actual clinical practice.

Keywords

Clinical competence, professional competence, coronary disease, continuing education, health educators, health personnel, patient education as topic, percutaneous coronary intervention, secondary prevention, trust, qualitative research.

ABBREVIATIONS

BMI	Body mass index
CABG	Coronary artery bypass grafting
CHD	Coronary heart disease
CVD	Cardiovascular disease
HbA_{1c}	Glycated hemoglobin
LDL	Low-density lipoprotein
MI	Myocardial infarction
PCI	Percutaneous coronary intervention
STC	Systematic text condensation
WHO	World Health Organization

LIST OF INCLUDED PAPERS

The thesis is based on the following three papers. Each paper are referred to by Roman numerals. The papers in their full format are attached as appendices at the end of the thesis.

I. Svavarsdóttir, M. H., Sigurðardóttir, A. K., & Steinsbekk, A. (2014). Knowledge and skills needed for patient education for individuals with coronary heart disease: The perspective of health professionals. *Eur J Cardiovasc Nurs*. Epub ahead of print 10. September 2014.

II. Svavarsdóttir, M. H., Sigurðardóttir, A. K., & Steinsbekk, A. (2015). How to become an expert educator: A qualitative study on the view of health professionals with experience in patient education. *BMC Med Educ, 15*(1), 87.

III. Svavarsdóttir, M. H., Sigurðardóttir, A. K., & Steinsbekk, A. What is a good educator? A qualitative study on the perspective of individuals with coronary heart disease. Under review.

1 BACKGROUND

1.1 CORONARY HEART DISEASE

Cardiovascular diseases (CVDs) are a class of mostly chronic disorders involving the heart and blood vessels that develop throughout life and usually progress to an advanced stage by the time symptoms occur (Perk et al., 2012). CVDs include coronary heart disease (CHD), which results from atherosclerosis in the coronary arteries that involves arterial wall thickening and calcification due to accumulation of lipids within the arterial intima, resulting in atherosclerotic plaques and narrowing of the vessel lumen. The consequence is increased peripheral resistance that reduces blood flow and hence oxygen supply to the heart muscle. These intraluminal atheromatous plaques may eventually lead to occlusion of a coronary artery and prolonged myocardial ischemia, causing myocardial infarction (MI) (Mendis et al., 2011).

Possible ischemic symptoms include combinations of chest, upper extremity, mandibular, or epigastric discomfort, with exertion or at rest, or an ischemic equivalent such as dyspnea or fatigue. The symptoms associated with acute MI usually lasts over 20 min. Often, the discomfort is diffuse rather than localized or positional and is not affected by movement of the region; it may be accompanied by diaphoresis, nausea, or syncope (Thygesen et al., 2012).

Myocardial revascularization has been a mainstay in the treatment of CHD for almost half a century. Percutaneous coronary intervention (PCI) was promoted as an alternative to coronary artery bypass grafting (CABG) by the mid-1980s. In CABG, bypass grafts are placed in the mid-coronary vessel beyond the culprit lesion(s), providing extra sources of nutrient blood flow to the myocardium and offering protection against the consequences of further proximal obstructive disease. In contrast, coronary stents aim to restore the normal conductance of the native coronary vasculature without offering protection against new disease proximal to the stent (Wijns et al., 2010).

A CHD epidemic began in the 20th century in most industrialized countries (Luepker et al., 2003); the disease is now the leading cause of death and disability in Europe, accounting for 1.8 million deaths, or 20% of the crude death rate (Nichols et al., 2014; Perk et al., 2012). Many more people are hospitalized after acute episodes or treated for chronic cardiovascular illness. Although the incidence of fatal CHD has fallen considerably in recent years, it remains a major cause of deaths before the age

of 65 and increases with age (Nichols et al., 2014). Furthermore, with an aging population, the burden of the disease will remain high (Perk et al., 2012). In addition, modern treatment methods, improved diagnostic testing, and increased professional and public awareness of CHD symptoms have led to greater survival rates for patients with MI and thus an increased prevalence in the population of individuals with established CHD susceptible to recurrence (Luepker et al., 2003).

CHD is strongly related to psychosocial factors and to unhealthy lifestyles, especially tobacco use, unhealthy diet, and limited physical activity, with consequent high levels of total cholesterol, high blood pressure, and high body mass index (BMI) (Di Chiara & Vanuzzo, 2009; Kuulasmaa et al., 2000; Perk et al., 2012; Schnohr et al., 2015). Evidence suggests that the disease is largely preventable (Mendis et al., 2011) and that its progress can be slowed or reversed through lifestyle changes and treatment of risk factors, with beneficial effects on morbidity and mortality (Di Chiara & Vanuzzo, 2009; Kuulasmaa et al., 2000; Perk et al., 2012). About 40% of the decline in CHD death rates is attributed to better treatment. Reductions in major risk factors, notably smoking, blood pressure, and cholesterol, account for more than half of the decrease in CHD deaths, although that improvement has been offset by an increase in the prevalence of obesity and type 2 diabetes (Perk et al., 2012). It is therefore concerning that a large proportion of individuals with CHD do not achieve recommended lifestyles, risk factor levels, and therapeutic targets (Kotseva et al., 2009).

In the EUROSPIRE III survey (Kotseva et al., 2009) lifestyle and risk factors among patients with CHD were explored in 22 European countries. The median time between index event and assessment in the study was 1.24 years (interquartile range 0.95–1.77 years). The results showed that 17% of patients smoked, 35% were obese, 56% had blood pressure ≥140/90 mmHg, and 51% had total serum cholesterol ≥4.5 mmol/l, while 25% reported a history of diabetes, of whom 10% had a fasting plasma glucose below 6.1 mmol/l and 35% glycated hemoglobin (HbA_{1c}) below 6.5%. The European guidelines and goals of risk factor management among patients with established CHD are presented in Table 1.

Table 1. Guidelines and goals of risk factor management (Perk et al., 2012)

Smoking cessation among smokers	
Regular physical activity	
Body Mass Index	<25kg/m^2
Waist circumference	<94cm (men) <80cm (women)
Blood pressure	<140/90 mmHg
Total cholesterol	<4.5 mmol/L (175 mg/dL)
Low-density lipoprotein cholesterol (LDL)	<2.5 mmol/L (100 mg/dL)
Among patients with type 2 diabetes:	
Fasting glycaemia	<7.0 mmol/L (125 mg/dL)
Glycated hemoglobin (HbA_{1c})	<6.5%

Patients with established CHD have increased risk of re-infarction and death (Simpson et al., 2011), so secondary prevention is central. Cardiovascular secondary prevention is a set of coordinated actions aimed at reducing risk factors in individuals with CHD and consequently the likelihood of major coronary events, death, and disability (Perk et al., 2012). As a facilitator of lifestyle change and risk-factor reduction, patient education is a core component in secondary prevention of CHD (Aldcroft et al., 2011; Ghisi et al., 2014), and is recommended in combination with medical treatment and rehabilitation (Perk et al., 2012).

1.2 PATIENT EDUCATION

Patient education is defined as "any set of planned, educational activities designed to improve patients' health behaviors, health status, or both" (Lorig, 2001, p. xiii). Patient education relates to the combination of learning experiences that influence behavioral modification and produce changes in the knowledge, attitudes, and skills needed to maintain and improve health (Rankin et al., 2005). In this thesis, the term "patient education" refers to educational and preventive efforts aiming to improve patients' health behaviors and quality of life; it includes all forms of educational intervention including providing information, lifestyle counselling, behavioral therapies, and psychological interventions and support.

Although the idea of patient education reaches back to Florence Nightingale's writing (Rankin et al., 2005), its development as a professional discipline founded on scientific research is relatively new. Patient education developed because of the societal need to prevent and solve health problems and emerged from the concept of health promotion (Van den Borne, 1998). The emphasis was initially placed on knowledge transfer alone, then on a more complicated picture of health behavior, and later on quality of life (De Haes, 2006). At one time, patients were not expected to participate actively in treatment or ask questions and were considered persons without values and preferences; health professionals were the experts who decided what was right for all patients (Hoving et al., 2010). Patients who did not follow medical instructions were considered difficult and non-compliant (Van den Borne, 1998). Now, patients are increasingly being seen as responsible for their own health and convalescence, as equal partners in treatment and recovery (Van den Borne, 1998). Since the 1980s, patients have had the right to know about and decide upon their medical options, and their values, preferences, and personal situations were to be taken into account (De Haes, 2006). The focus today is on motivating patients to become more engaged in the promotion of their own health and make informed choices in treatment and its goals (Hoving et al., 2010).

Providing patient education has become more complex in recent years, due to aging populations (Hoving et al., 2010; OECD, 2013), cultural diversity (Hoving et al., 2010), and decreasing lengths of hospital stays (OECD, 2013). Developments in society and health science (Hoving et al., 2010) and, more recently, the use of social media in patient education (Beranova & Sykes, 2007) have placed an increased demand on educators to keep up with evidence-based medicine and the use of information technology. Patients request more information and participation in decisions concerning their health (Deccache & Aujoulat, 2001) and the move from the medical model to patient-centered care (Robinson et al., 2008) requires increased competence in communication skills among health professionals. Finally, helping patients to achieve the lifestyle changes emphasized in secondary prevention demands that health professionals receive specific training in communication and lifestyle counselling (Perk et al., 2012).

The importance of patient education was clearly demonstrated in a literature review of 360 studies on the effect of patient education in chronic diseases (Lagger et al., 2010). The majority of included studies (64%) reported that patient education led to improvement in health parameters such as HbA_{1c}, body weight, blood pressure, pain, disability, quality of life, and hospital readmission. 30% of the studies showed either no or a non-significant effect and 6% reported a worsening of health parameters in the education group. However, the authors argue that the benefits of education were often underestimated in those studies, as it is almost impossible to avoid giving information to a control group. In addition, the effect of a naturally educational environment and challenges in separating the effects of medical treatment from the effects of educational intervention may also have affected the results. Research is beginning to demonstrate the benefits of patient education to individuals with CHD through increases in patients' knowledge and behavioral changes. In a systematic review, Aldcroft et al. (2011) demonstrate that educational interventions produced a significant positive effect on physical activity levels of patients with CHD, but limited positive effect on smoking and dietary behavior, and no effect on physiological risk factors. Ghisi et al. (2014) report that educational interventions in CHD were significantly and positively related to physical activity, dietary habits, and smoking cessation. Another systematic review by Cole et al. (2010) of more than 10,000 patients, looked at the effect of lifestyle interventions in secondary prevention of CHD, including educational, psychological, dietary, organizational and exercise interventions. They reported improvements in dietary and exercise outcomes but no overall effect on smoking cessation. However, these results should be interpreted with caution as the authors concluded that heterogeneity between trials and generally poor study quality made drawing definitive conclusions difficult. Similarly, in a Cochrane Review on patient education for adults with CHD, Brown et al. (2011) concluded that there are possible beneficial effects of patient education on health-related quality of life, and that individuals with CHD should receive

patient education. However, there was not enough information available to understand fully the impact of educational interventions on mortality, morbidity, and health-related quality of life.

The optimal method, duration, and intensity of interventions for CHD risk factor reduction are unknown (Perk et al., 2012). A lack of descriptions of teaching methods used in effective educational programs makes it difficult to determine the optimal method to employ in patient education. However, a multidisciplinary, multidimensional, combined inpatient and outpatient approach appears to result in better outcomes in the long-term (Lagger et al., 2010). According to an analysis of Cochrane Reviews of educational and self-management interventions (Coster & Norman, 2009), multiple teaching methods have been used in patient education, ranging from informing patients about their condition to self-management programs that provide education and teach practical self-management skills, comprising either general advice or patient-specific approaches. According to Beagley (2011), a lecture in which the presenter gives information to passive learners is the most common method of formal patient education. Discussions, demonstrations, and the use of printed instructions and the Internet are other commonly used methods. However, a study among nurses, physicians, and occupational therapists revealed that in many cases patient education is embedded within care and treatment, that room is seldom set aside for teaching, and that there is not always time for planning the educational intervention (Hult et al., 2009).

A recent systematic review of patient education for individuals with CHD (Ghisi et al., 2014) revealed that nurses were the most frequent educators. Most education was delivered after discharge. Lectures and group discussions were the most common delivery format, most interventions incorporated some form of follow-up telephone contact and individual counselling, and the most common educational intervention covered nutrition, exercise, risk factors, psychosocial well-being, and medications. Goal setting, problem solving, self-monitoring, and role modeling appear to be effective educational interventions that enhance lifestyle changes (Aldcroft et al., 2011). Combining the knowledge and skills of health professionals into multidimensional educational interventions can optimize the educational intervention (Lagger et al., 2010; Perk et al., 2012). Multidimensional educational interventions include promoting a healthy lifestyle through behavioral changes, including nutrition, exercise training, relaxation training, weight management, and smoking cessation programs (Perk et al., 2012). Multidisciplinary patient educational models involving nurses, dietitians, physiotherapist, and cardiologists, among others, have been shown to be effective in targeting CHD risk factors and assisting patients in coping with the disease (Jorstad et al., 2013; Lear et al., 2006; Saffi et al., 2014; Wood et al., 2008).

One example of multidisciplinary patient education is the EUROACTION program (Wood et al., 2008), which is a nurse-coordinated multidisciplinary, family-based cardiovascular disease prevention

program offering education and counselling. It showed improvement in lifestyle and risk factors and the use of cardio-protective drugs in the intervention group compared to usual care, even though almost one fifth of the usual care group received some form of structured cardiac rehabilitation. Another example is the extensive lifestyle management intervention study (ELMI) (Lear et al., 2006), which demonstrated a significant reduction in global CVD risk factors compared with usual care. Similarly, the RESPONSE randomized trials (Jorstad et al., 2013) resulted in a significantly greater reduction in cardiovascular risk and better risk factor control in the intervention group compared to usual care at the 12-month follow-up. Saffi et al. (2014) also demonstrated a significantly reduced 10-year cardiovascular risk and improvement in weight and blood pressure in patients receiving nurse-coordinated guidance compared to structured cardiac care.

Goal setting, assessment and monitoring of risk factors, and lifestyle change were used in the majority of the studies discussed above (Jorstad et al., 2013; Lear et al., 2006; Saffi et al., 2014; Wood et al., 2008), in accord with clinical guidelines. Motivational interviewing, Prochaska's stage of change, the trans-theoretical model of change, and social cognitive theory are all examples of theories used in some of the studies. Individual counselling, face-to-face visits and group-based education, self-monitoring and regular follow-up were used to some extent in all the educational programs.

Even though nurse-coordinated multidisciplinary programs are recommended in the European guidelines on cardiovascular disease prevention in clinical practice (Perk et al., 2012), there are no recommendations regarding specific educational methods or the structure of such programs. Translating evidence and guidelines into effective patient educational programs thus remains a challenge. Berra et al. (2011) propose a 16-weeks prevention model based on supporting evidence from successful case management trials. In their proposal, a multidisciplinary approach is used, including nurses, dietitians, and physiotherapists, with support from cardiologists and psychologists. A key principle of the model is that preventive care should be implemented according to evidence-based guidelines and that patients' families should be included. It is further proposed that the programs should have a flexible approach that allows the easiest possible access. The focus should be on promoting healthy lifestyle habits to address total cardiovascular risk, and there should be an effective mechanism for prescribing cardio-protective medications, with protocols available to facilitate the management of blood pressure, lipids, and diabetes to achieve guideline-based goals.

The preventive model presented by Berra et al. (2011), the European guidelines on cardiovascular disease prevention in clinical practice (Perk et al., 2012), and most educational programs for patients with CHD focus on predefined goals for secondary prevention. The patients generally do not have any voice in these guidelines or in patient educational programs more broadly; there is no clear focus on patient-centered care and empowerment.

Patient centered-care has evolved from dissatisfaction with the conventional medical model expressed as a plea for a more respectful, sharing, and empowering approach to the patient into a central value of what good medicine and good medical communication strive for (De Haes, 2006). The human connection, shared decision making, and being respected and regarded as a unique individual are important elements of patient-centered care (Thorarinsdottir & Kristjansson, 2014). Empowering patient education is a patient-centered approach (Funnell et al., 2007) designed to facilitate self-directed behavior change and help patients think critically and make informed decisions (Anderson & Funnell, 2010). Empowering patient education provides patients with the knowledge, skills, and responsibility to effect change, promotes health, and maximizes the use of available resources (Funnell et al., 1991). The main characteristic of empowerment-based patient education is that it is patient-centered. Fundamentally, it is based on meeting patients' needs and helping them fulfill their desires (Anderson & Funnell, 2010), and set their own goals (Aujoulat et al., 2007). In empowering education, the educator's role is to support patients on their way to health, help them make informed decisions about treatment options and promote self-care (Funnell & Anderson, 2003). Goals and outcomes should neither be predefined by health professionals nor restricted to specific disease or treatment-related outcomes. The patients play a major role in identifying their learning needs and should be allowed to identify goals that are important to them and select and effect behavioral changes that facilitate meaningful improvements and outcomes (Aujoulat et al., 2007). To maximize their chances for success, patients must be internally motivated (Anderson & Funnell, 2010). When changes are identified by and thus important to individuals, they are more likely to be sustained than changes recommended or imposed by others. Treatment and behavioral change goals need to be mutually agreed upon by the patient and the educator and should enable the patients to make informed choices rather than obliging or coercing them to comply or adhere to provider-selected goals (Funnell & Anderson, 2003).

Empowering patient education has been widely used in patient education for patients with diabetes to help them choose personally meaningful, realistic goals, related especially to weight loss, nutrition, and physical activity (Anderson & Funnell, 2010; Funnell et al., 1991; Funnell et al., 2007). A systematic review of the effect of empowerment-based self-management interventions on patients with chronic metabolic diseases showed greater and longer-lasting effects than traditional education or self-management programs without empowerment-based intervention (Kuo et al., 2014). Another systematic review that evaluated the effect of empowerment interventions among patients with chronic diseases, revealed that they can improve patients' disease knowledge and ability to manage their illness and improve their health status, psychological condition, and quality of life (Chen & Li, 2009).

Several studies indicate that patient education is frequently neglected (Conway et al., 2006; Svavarsdóttir & Hallgrímsdóttir, 2008), is sometimes ineffective (Bellman et al., 2009; D'Elia et al., 2011), and does not always correspond to patients' needs (Hanssen et al., 2005; Kristofferzon et al., 2007; Murie et al., 2006). Patients' perspectives are rarely taken into account in educational interventions (Deccache & van Ballekom, 2010), while patients' knowledge of CHD (D'Elia et al., 2011; Kristofferzon et al., 2007) and adherence to recommended treatment are often considered inadequate (Ho et al., 2006; Jackevicius et al., 2008). Hence, despite increasing recognition of the importance of patient education and the favorable findings of several research projects on patient education, there remains a pressing need for improvement in the quality of patient education in clinical practice and for increased competence of health professionals in patient education.

Providing patient education to patients with CHD is complex and challenging and requires expertise from health professionals including nurses, physiotherapists, and physicians (Berra et al., 2011). The large variations in choice of educational theories, interventions and, educational components used to manage complex lifestyle behaviors of patients with CHD poses an additional challenge on health professionals. Understanding which competencies are necessary for patient education and how health professionals can best be supported in developing the skills necessary to create and implement quality patient education is therefore nothing less than an urgent necessity.

1.3 COMPETENCE DEVELOPMENT IN PATIENT EDUCATION

Patient education plays a central role for every health professional (Dandavino et al., 2007; Rankin et al., 2005), and educating patients with CHD and their families is an integral component of secondary prevention, in which health professionals play a key role. It is therefore essential that health professionals have the competence necessary to serve effectively as educators for patients with CHD. Competence in patient education refers to proficient use of communication skills, such as the provision of information, advice, and behavior modification methods, to influence the patients´ knowledge, opinions, and health and illness behavior (Wouda & Van de Wiel, 2015).

An understanding of the principles of adult learning, health literacy, and barriers to learning is essential for patient education to be as effective as possible (Beagley, 2011) and health professionals taking care of patients with CHD need to be trained in lifestyle counselling and educational science (Astin et al., 2014). In addition, those involved in multidimensional programs need expert knowledge and training in smoking cessation, implementing a cardio-protective diet, adapting physical activity and exercise, and reducing weight (Berra et al., 2011). However, there is limited literature addressing the challenges

that health professionals face in patient education, outlining the knowledge and skills they need to provide quality education to patients with CHD or discussing how competence in this special area are best developed.

Malcolm Knowles, known as the father of adult learning principles, postulates that adults learn differently than children as they are almost always voluntary learners, and simply withdraw from learning experiences that do not satisfy them (Knowles, 1970). According to Knowles, adults perceive themselves to be self-directing and have a need to be perceived by others that way. They see themselves as being able to make their own decisions and accept the consequences and to manage their own lives. For this reason, adults need to be treated with respect, to make their own decisions, and to be seen as unique human beings. Adults tend to resist learning under conditions that are incongruent with their self-conception as autonomous individuals. For adults their own experience is a resource for learning and they relate new experiences to the foundations of the lives they have lived. Adults' developmental tasks produce a readiness to learn which at its peak presents a teachable moment. If the teachable moment is to be captured and result in learning, the sequence of the curriculum must be timed so as to be in step with the learners' developmental tasks. Orientation to learning is problem centeredness and the adults' motivation to engage in learning depends on the adult's feeling a need to learn and perceiving a personal goal that learning will help to achieve (Knowles, 1970).

How health professionals develop the knowledge, skills, and confidence necessary to serve competently as educators for patients with CHD is not known with specificity. Benner (2001) uses the Dreyfus model of skill acquisition and skills development to explain the knowledge and competence development of nurses, based on her observations and interviews with them. The five levels of proficiency, in which the professional starts a career as a novice before progressing through advanced beginner, competent, proficient, and eventually expert, reflects changes in three general aspect of skill performance:

- An evolution from reliance on abstract principles to the use of concrete experience;
- A change in the perception of the situation in which the situation is seen less and less as a compilation of equally relevant bits of data and more and more as a complete whole in which only certain parts are deeply relevant;
- The passage from detached observer to involved performer.

The Dreyfus model distinguishes between the level of skilled performance that can be achieved through principles and theory learned in a classroom and the context-dependent judgements and skill that can only be acquired in real-world situations. Although Benner applies this competence

developmental process to nursing, her work can be generalized to other health professionals (Rankin et al., 2005). Benner's premise is that the development of knowledge in disciplines such as medicine and nursing is composed of the extension of practical knowledge or know-how through research and the characterization and understanding of the know-how of clinical experience. Experts develop skills and understanding regarding patient care over time through a multitude of experiences in addition to formal education, since theory alone cannot adequately mimic the diversity and complexity of actual clinical practice. Clinicians with limited theoretical background knowledge will lack the tools needed to learn from experience, as theory provides the background knowledge that enables the clinician to ask the right questions and look for the correct problem (Benner, 2001). Table 2 describes the five levels of proficiency described by Benner.

Table 2. Benner's five levels of proficiency (2001)

Novice beginner	Has no experience of the situations in which performance is expected; must use context-free rules to guide task performance. However, following rules legislates against successful task performance because no rule can indicate which tasks are most relevant in a real situation or when an exception to a rule is in order.
Advanced beginner	Have coped with enough real situations to note the recurrent meaningful situational aspects but treat all attributes and aspects as equally important. Aspect recognition is dependent on prior experience. While aspects may be made explicit, they cannot be made completely objective. The novices and advanced beginners can take in little of the situation as they have to concentrate on remembering the rules they have been taught.
Competent	Sees actions in terms of long-range goals or plans of which he or she is consciously aware. Has the ability to cope with and manage the many contingencies of clinical nursing but lacks speed and flexibility.
Proficient	Perceives situations as wholes rather than in terms of aspects and has an understanding of which of the many attributes and aspects are the important ones.
Expert	Perceives the situation as a whole, no longer reliant on analytic principles to connect his or her understanding of the situation to an appropriate action. The expert uses past concrete situations as paradigms, moving to the accurate region of the problem without wasteful consideration of a large number of irrelevant options.

Expertise cannot be legislated or standardized, although it can be facilitated, recognized, and rewarded. It cannot be standardized, since expertise in a situation always involves an accurate interpretation of specific responses to a concrete situation. The model predicts that a nurse might perform at an expert level, given innate ability and adequate educational preparation, in a clinical situation where he or she is highly experienced, is motivated to perform well, and has the usual resources and constraints associated with that situation, despite being a novice in an actual clinical situation. Experience does not necessarily refer to longevity or length of time in a position; rather, it refers to a highly active process of refining and changing preconceived theories, notions, and ideas when confronted with actual situations. This model assumes that all practical situations are far more

complex than can be described by formal models, theories, and textbook problem descriptions (Benner, 2001).

Based on qualitative interviews with nurses, nurse managers, nursing instructors, and nursing students, Tabari-Khomeiran et al. (2007) propose a theory describing the competence development of nurses and the key factors that affect it. The theory consists of a five-stage, dynamic, iterative process between the nurse and the environment (Table 3).

Table 3. Competence development of nurses and key factors affecting competence development (Tabari-Khomeiran et al., 2007)

Driving force recognition	Is the initial necessary phase of competence development, acting as the motive to move towards competence development. It contains a driving force and a recognition of this force, which may be internal or external. Patient satisfaction is described as the most frequent internal factor. Achievement, self-fulfillment, and desire to be number one in the workplace were other forces articulated as internal motivators. The main type of external source is managerial expectation.
Providing appropriate requisites	Is the necessity of sufficient theoretical knowledge and support for engaging in the proposed activity. Examples of supportive resources include more knowledgeable coworkers, textbooks, and professionals journals.
Experience	Provides an opportunity to make a link between theory and practice, seen as the most important factor influencing competence development. In addition to direct involvement, experience included observing and listening to people with more or different experience; supervision, support, and expert feedback are valuable.
Consolidation	Is the phase of gaining complete mastery of the proposed work, mainly through repeated practice and confronting challenging situations by using reflection.
Integration	Involves incorporating the new competencies established ones and becoming prepared to teach and supervise others in related areas.

According to this theory of competence development, physical and emotional factors in the environment can either encourage or discourage nurses in the journey toward competence development. Extra- and intra-professional job-related Issues affect nurses' motivation to pursue greater competence, such as the poor image of nursing within the society and an increasing workload. Learning opportunities including unexpected or unplanned situations that challenge abilities and offer the chance to examine one's own performance will be beneficial if the nurse transforms them into learning situations.

Practicing health professionals need to have the possibility of updating their knowledge and skills regarding patient education (Hoving et al., 2010). One possible cause of gaps in health professionals' competence, education, and training in patient education is the lack of adequate patient education curricula. A first step to the improvement of health professional education in patient education is to

define the competencies needed for quality patient education and describe how they should optimally be developed.

1.4 IMPROVING COMPETENCE IN PATIENT EDUCATION AMONG HEALTH PROFESSIONALS

One potential cause for individuals with CHD not achieving recommended lifestyles, risk factor levels, and therapeutic targets (Kotseva et al., 2009) may be related to health professionals' competence in patient education. Nurses have been found to regard the educator role as difficult to grasp; their patient education is often guided by personal experience rather than evidence (Friberg et al., 2012), and they have been reported as not following patient educational development in scientific literature (Bergh et al., 2014). By interviewing physicians, nurses, and occupational therapists, Hult et al. (2009) found that health professionals had almost no support for professional development in patient education and that most patient education was spontaneous and unplanned, usually embedded within care and treatment activities. Goals for patient education were either vague or nonexistent, and teaching appeared to be executed without much self-reflection or discussion with colleagues.

Research indicates that most health professionals are unfamiliar with important patient education methods, show deficiency in patent education competence, and have inadequate education and training in patient education. Consultations with 44 physician and residents in the Netherlands were videotaped and evaluated. Their competence in communication and patient education was rated as moderate to adequate, with supervisors and residents demonstrating similar overall patient educational competence (Wouda & Van de Wiel, 2015). While some studies report nurses evaluating themselves as being competent in patient education (Bergh et al., 2014), other studies indicate that nurses consider their knowledge and skills in patient education inadequate (Kääriäinen & Kyngäs, 2010). In studies where newly graduated nurses (Lima et al., 2014) and more experienced nurses (Istomina et al., 2011) self-assed their clinical competence across several domains, they rated their competence in teaching as the lowest. In a Norwegian study (Wangensteen et al., 2012), newly graduated nurses assessed their teaching competence as good, but reported that the teaching-coaching competence was the one least used.

To educate patients effectively, health professionals must have training in patient education (Deccache & Aujoulat, 2001). However, health professionals have limited formal training in educational science (Bergh et al., 2014; Dandavino et al., 2007), and the lack of emphasis on educational and behavioral science in cardiovascular educational programs is apparent in the literature (Gillebert et al., 2013; Marzlin, 2011). In a review of the literature, Friberg et al. (2012) conclude that lack of training and lack

of confidence are contributing factors in nurses' reluctance to conduct patient education; they thus emphasize the need for more education and training to undertake patient education. The World Health Organization (WHO) (2005) has also devoted attention to the inadequate preparation of health professionals in educating patients with chronic conditions. In addition, there are concerns about the limited opportunities for professional development in teaching competence (Hult et al., 2009) and opportunities for continuing education focusing on patient education (Balcou-Debussche & Debussche, 2008; Friberg et al., 2012). Similarly, the lack of resources, structured training, and skills development has been identified as a barrier to implementation of CHD secondary prevention (Murchie et al., 2005), and the need to develop continuing education for health professionals has been identified (Astin et al., 2014; Conway et al., 2006; Murchie et al., 2005). Cardiac nurses consider continuing education to be of utmost importance for nurses to develop as professionals (Timmins, 2008). Continuing education for health professionals can improve professional practices and healthcare outcomes for patients (Forsetlund et al., 2009). Iley et al. (2011) have demonstrated higher levels of confidence and greater depth of knowledge and skills among cardiac nurses after they took an online educational course. Lamiani and Furey (2009) demonstrated an improvement in nurses´ knowledge, communication skills, and preparedness to deliver patient education after a two-day workshop on patient education. An extensive three-day consultation training for nurses resulted in effects on patients' weight parameters, physical activity, perceived stress, and the number of patients who achieved blood pressure control during a two-year follow-up period (Drevenhorn et al., 2012).

Currently, there is no accepted consensus of what a patient educational training program for health professionals should entail. In the European guidelines on cardiovascular disease prevention in clinical practice (Perk et al., 2012), communication is presented as a special clinical skill in which training is important. Otherwise, the guidelines do not specify competencies needed for patient education. However, their description of preventive methods reflects the skills needed for educating patients with CHD, including effective communication and behavioral methods to support patients in adopting a healthy lifestyle, such as motivational interviewing and goal setting. Lifestyle changes in those guidelines that health professionals are expected to be capable of assisting patients achieve include nutrition, physical activity, management of psychosocial factors, relaxation training, weight management, and smoking cessation.

The WHO (2005) has proposed a training model for health professionals in attending to patients with chronic conditions. Two core components—adapting a patient-centered approach and communication skills that enable health professionals to partner with others—relate directly to patient education. In those core components health professionals are said to need communication skills that elicit information from the patients' point of view and meet patients at their different and individualized

levels of understanding. Health professionals need to be trained in interviewing and enquiring comfortably about patients' concerns, emotions, social situations, and behaviors. Health professionals need sufficient training in skills to aid patients in lifestyle changes and support self-management. The component of communication includes partnering with patients, other providers, and communities; empowering communication skills that allow health professionals to share authority and involve patients in all aspects of healthcare decision-making are recommended (WHO, 2005).

A core curriculum for professional development of the general cardiologist (Gillebert et al., 2013) includes modules about prevention, rehabilitation, and treatment of patients with CHD. However, the curriculum pays only vague attention to patient education and counselling, and the patients' perspectives are not present. The model is medical and physician-centered, with the main focus on diagnosing, assessing, and managing patients with risk factors with the aims of correcting unhealthy lifestyles and motivating and monitoring patient compliance with prescriptions and recommendations. Nevertheless, the general cardiologist is expected to have the ability to establish a relationship with the patient based on empathy and trust and have a non-judgmental attitude to patients regarding lifestyle. They are expected to understand different prevention methods and communicate prevention messages and motivate patients and families to execute and maintain lifestyle changes. The capability for teamwork with other physicians and health professionals with a role in primary and secondary prevention is also expected.

A core curriculum for the continuing professional development of nurses was recently developed by the educational committee on behalf of the Council on Cardiovascular Nursing and Allied Professions of the European Society of Cardiology (Astin et al., 2015a/2015b). The curriculum was designed by a panel of experts to provide a map of key content and suggestions for approaches to learning and assessment and to be used as a tool to support and inform the continuing education and professional development of newly qualified nurses working in cardiovascular settings across Europe. The curriculum, which has a patient- and family-centered perspective informed by educational theory, includes eight themes, of which one describes education of nurses in patient education and communication. The content of this theme includes education about adult learning theory and health literacy linked with effective communication skills. These skills underpin knowledge about effective health behavior change and is presented in Table 4.

Table 4. Core curriculum for continuing professional development of nurses: Education and Communication. (Reprinted from Astin et al. 2015a)

Content	Introduction to educational theory and principles of adult learning.
	Health literacy theory and health information needs.
	Theory and principles of family assessment.
	Principles and practices of effective communication.
	Introduction to educational and behavioral interventions.
	Implementation of clinical guidelines in practice.
Learning outcomes	Demonstrate the ability to assess the patients learning needs.
	Develop an individualized health education plan.
	Use effective communication skills to provide tailored health information.
Knowledge	Describe the key theories that explain adult learning processes.
	Describe the principles and practice of effective communication.
	Define the term "health literacy."
	Identify the impact of health literacy on learning.
	Discuss barriers and enablers to effective health education and communication.
	Describe the principles and processes that underpin reflective practice and recognize the potential for this approach in service improvement.
	Identify examples of different technologies that can enhance patient and family education.
Skills	Apply theories of adult education in clinical practice to address individual health information needs.
	Use techniques to develop rapport with patients, families, and friends.
	Use active listening skills and nonverbal cues.
	Develop and refine effective communication skills and evaluate them in practice.
	Select a range of interactive approaches to engage the patient and family in their health education.
	Choose relevant content for health information and deliver it in a timely way and an accessible format in partnership with patients and families.
	Accurately document health education provision.
Attitudes & Behaviors	Implement nursing consultations in a private space to preserve dignity and respect the right to confidentiality.
	Accept and acknowledge patients' and families' views and feelings.
	Communicate in a consistent way using terms that can be easily understood.
	Respect diversity and differences in beliefs and cultures.

Existing teaching skills development programs for medical students include peer teaching, teaching workshops, outreach programs where students teach health-related topics to secondary school students, feedback, and evaluation (Marton et al., 2015). Dandavino et al. (2007) propose that a program to improve competence in teaching of medical students should integrate teaching and communication skills. The objectives of such programs should be to increase knowledge about the basic principles of education and effective teaching, to improve education skills and appropriate use

of teaching strategies, to aim at recognition of the importance of the teachers' role, and to increase satisfaction with decrease anxiety about teaching. The program should be supported and taught outside the classroom setting and extend from pre-clinical training through clerkship and even residency. It is recommended that novice educators' tasks should increase gradually in complexity; practice teaching skills should be developed with a balance of support and independence and be carried out in real-world settings.

Patients' perspectives are increasingly being incorporated into patient education. Patients with CHD have successfully participated in the development of patient educational material for lifestyle modification (Leathem et al., 2009). Generally, patients do not have a role in the development of health professionals' educational curricula. However, in a qualitative study on cardiac patients´ perspective on the educational preparation of cardiac nurses, Albarran et al. (2014), demonstrate that patients want cardiac nurses to be equipped with interpersonal skills to facilitate patient education and be prepared to support, guide, and engage patients through the various phases of rehabilitation. In addition, they propose that nurses should devote more time to developing their communication skills and increasing their understanding of pharmacological issues, and how to present information to patients, as their training was insufficient and needed enhancement for work in real-world cardiac care. There was a consensus among the patients that nurses must be able to answer patients´ questions appropriately and informatively while being reassuring and comforting. Traditionally, health professionals have regarded patients' knowledge to be of less value than clinical and scientific knowledge. In patient-centered care, however, patients and their families are seen as experts in their own care and needs and are active decision-makers (WHO, 2005). Given the increasing emphasis on empowering patient education and patient-centered care, attention must be paid to patient knowledge. Therefore both patients' and health professionals´ views and experiences are extremely valuable when exploring what knowledge and skills are needed in quality patient education and may prove useful in the development of curricula for the continuing education of health professionals in patient education.

2 AIMS

The objective of this thesis was to investigate health professionals and patients' views on the knowledge and skills necessary for being a good educator for adults recently diagnosed with CHD and health professionals' views of how competencies in patient education should be developed. This was investigated by conducting studies with the following aims:

- Investigating health professionals' views on the knowledge and skills necessary to conduct high-quality patient education for adults recently diagnosed with CHD.

- Investigating the characteristics of expert educators, as reported by health professionals experienced in patient education for patients with coronary heart disease, and their views on how to become expert educators.

- Investigating what patients with CHD who have participated in patient education after a PCI perceive as a good educator.

3 METHODS

This thesis builds on two qualitative studies, published in three papers. To obtain the participants' perceptions, face-to-face semi-structured individual interviews were used for both studies (Brinkmann & Kvale, 2015).

Qualitative research methodology is a systematic and reflective process (Malterud, 2001b) that is used to explore emotions, perspectives, beliefs, and values with a focus on the individual's actual experience (Morse, 2012). This is therefore an appropriate method of data collection to obtain an understanding of the issues perceived to be important to patients and health professionals, based on their lived experience with patient education.

Qualitative research methods include various strategies for systematic collection, organization, and interpretation of textural material obtained through observations or discussions (Malterud, 2001a). Individual face-to-face interviews were chosen as a method for data collection in this thesis. Interviewing is an evolving process during which the researcher attempts to understand the world from the participant's points of view and unfold the meaning of their experiences. The researcher introduces the topic of the interview and asks participants to share their experiences of the phenomenon. Follow-up questions are used to encourage the participants to elaborate on details and to achieve clarity and hold focus on the subject (Brinkmann & Kvale, 2015).

The research team consisted of the researcher, a registered nurse with experience of patient education in a nurse-coordinated educational clinic for patient with CHD, and two supervisors, one a sociologist and professor of behavioral sciences in medicine and health service research and the other a professor in nursing with experience in patient education of individuals with diabetes. Both supervisors had extensive experience in research regarding patient education.

3.1 SAMPLE, RECRUITMENT, AND SETTINGS

Papers I and II—Health professionals

The aim was to recruit health professionals (nurses, physiotherapists, and cardiologists) in Norway and Iceland. Participants were required to have experience in providing patient education (e.g., formal education, individual and group education, information giving, support and lifestyle counselling) to individuals with CHD. There were no exclusion criteria. Participants were selected to achieve variation in age, gender, profession, overall work experience, and specific experience with patient education (Graneheim & Lundman, 2004).

Purposeful sampling was used to recruit the participants; it involves identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with the subject, willing to participate, and able to communicate experiences in an articulate, expressive, and reflective manner (Palinkas et al., 2013). The study was introduced to health professionals working in cardiac care at Landspítali University Hospital in Reykjavík Iceland, Akureyri Hospital in Akureyri, Iceland, and St. Olavs University Hospital in Trondheim, Norway. Those who agreed to participate were asked to recommend others possible participants, a process known as snowball sampling. The sampling continued simultaneously with analysis, until we considered that further empirical data would not add any more information to what had been obtained from previous data (Malterud, 2012).

All of the participants had experience with in-hospital patient education; 18 of them were involved in patient education in group-based educational programs aimed at patients with CHD after discharge from hospital. In addition, the Icelandic nurses had experience with counselling in nurse-coordinated educational clinics. Nine of the participants had specialized in cardiac care; there were two cardiologists, five cardiac nurses, and two cardio-pulmonary physiotherapists. All participants but one had training in patient education during undergraduate or graduate study or from a continuing educational program.

Paper III—Patients

The aim was to recruit Icelandic and Norwegian individuals with CHD who had undergone PCI. Participants were required to have received formal patient education after their hospital stay, to be 18 years of age or older, and to be able to understand the study and its procedures. There were no exclusion criteria. Participants were selected to ensure variation in age, gender, disease history, and time elapsed from PCI (Graneheim & Lundman, 2004).

To recruit patients with purposeful sampling, a nurse in a nurse-coordinated educational clinic for cardiac patients at Akureyri Hospital reviewed patient files for eligible participants. The selected patients were invited by mail to participate. The invitation letter included instructions on contacting the researcher by telephone or e-mail if recipients were interested in participation. Non-responders were followed up with a telephone call by the nurse two weeks later. Once data had been collected in Iceland, the cardiac nurse introduced the study in a cardiac educational program at Lillehammer Hospital, Norway, handed out invitation letters, and enrolled volunteers.

The Icelandic participants had received patient education in a nurse-coordinated clinic which included group patient education and one-year follow-up of individual interviews with a nurse. The Norwegian participants had participated in a one-day intense educational program known as Heart School, which consisted of a group education and an individual interview with a physician.

3.2 DATA COLLECTION

Papers I and II—Health professionals

Data collection took place between April and August 2013. The interviews were conducted by the researcher in the participants' native language (Icelandic or Norwegian) at a location chosen by the participants. The interviews were audiotaped and transcribed verbatim. The interviews with the Icelandic-speaking participants were transcribed by the researcher. The interviews with the Norwegian participants were transcribed by research assistants and reviewed for accuracy by the researcher. The average interview duration was 40 minutes, with a range of 23–64 minutes.

The participants were informed that patient education was understood to cover a very broad range of individual- and group-based formal patient education, information giving, support, and lifestyle counselling.

To ensure that the participants talked about the same topics and that all aspects of interest were covered, a semi-structured interview guide was developed (Appendix I). The interview guide was developed by the researcher with the help of a literature review, her own insight and experience with the subject, and a critical review and discussions with supervisors and members of the Patient Education and Participation research group at NTNU. Initially, the participants were asked to explain what they considered optimal training in patient education for inexperienced educators who provide education for adults recently diagnosed with CHD; patients who had survived first-time myocardial

infarction or undergone first-time elective PCI. The interview guide was revised after each interview and the sequence of the questions varied, depending on how the interview developed.

The main questions used in Paper I were: *"What knowledge and skills are needed to conduct high-quality patient education?"* and *"What are the main challenges health professionals encounter in education for individuals with CHD?"*

The main question used in Paper II was: *"What do you consider the optimal training in patient education for inexperienced educators who provide education for adults recently diagnosed with CHD?"*

The participants were also asked to describe their own learning needs. After a few interviews, the theme of the expert educator had been developed from the interviews (Paper II). Hence, a question about the characteristics of expert and novice educators and the educational needs of experts educators was added to the interview guide. Other changes were minor and related to clarity of wording and sequence of questions. No changes were made to the questions used for Paper I.

Paper III—Patients

Data were collected between June 2014 and Mai 2015. The interviews were audiotaped and transcribed verbatim. The average interview duration was 44 minutes with a range of 17–69 minutes.

The participants were informed that patient education was understood to cover individual- and group-based formal patient education, information giving, support, and lifestyle counselling they had received during and after hospitalization related to their CHD incidents.

An interview guide was used to obtain detailed-rich information from patients (Appendix II). The interview guide was developed by the researcher in the same manner as described above for Papers II and III. The participants were asked open questions about their experiences with patient education after PCI, what they perceived as a good educator, what they appreciated most in educators' performance, and what they found positive and negative in the patient education they received. Early in the data sampling, it became apparent that trust played a large role in the interviews, so a question about the importance of trust in patient education and what enhanced patient-provider trust was added. Other changes were minor and related to clarity of wording and sequence of questions.

3.3 DATA ANALYSIS

The data were analyzed using a thematic approach based on Malterud's systematic text condensation (STC) (Malterud, 2011/2012). STC is a descriptive approach that presents the experiences of the participants as they expressed them. The analysis is conducted stepwise in a four-step process.

Total impression: The analysis starts by reading the transcribed interviews to obtain a general impression of the whole and search for preliminary themes. At this stage preconceptions are bracketed and data are encountered with an open mind and awareness of the participants' voices. When finished with reading the transcripts from a bird´s-eye perspective, the researcher lists preliminary themes identified in the material and negotiates confluent and diverging issues.

Identifying and sorting meaning units: In the next step, talk relevant for the research question is identified. The transcriptions are systematically reviewed line by line to search for text fragments, or "meaning units," containing information about the research question. Next, meaning units potentially related to the previously outlined themes are identified, classified, and sorted into groups. The names and features of the groups are elaborated from the preliminary themes obtained in the first step in the analysis.

Condensation: The third step involves sorting the meaning units within each group into subgroups. The meaning units within each subgroup are reviewed and the content reduced to a distillation of rephrased quotations, maintaining as much of the original terminology used by the participants as possible.

Synthesizing: In the final step the data are re-conceptualized, putting the pieces together again. The contents of each group are summarized in generalized descriptions and concepts. Subgroups are displayed in an analytic text in separate paragraphs without subheadings; each is illustrated by relevant quotations. Finally, the transcripts are searched systematically for data that may challenge the conclusion. The analysis also includes an assessment of findings compared with existing research findings and theory. This can be undertaken as part of the discussion of results.

Examples of the analytical process as used in Paper I are shown in Table 5.

Table 5. Examples of the analytical process in Paper I

Preliminary themes	Identifying and sorting meaning units	Condensation	Synthesizing	Final themes
Scientific knowledge	*Up-to-date knowledge about how to change lifestyle, what lifestyle has proven to be good for the heart and what methods are approved to deal with this* [lifestyle change] *and what methods have proven to be effective (Nurse, experienced)* *There is constantly new research that you need to keep up with (Nurse, experienced)*	You constantly need to keep up with new research, and know what methods are effective and supported by research	Base patient education on evidence	Theoretical knowledge
Clinical experience	*With experience you gain insight into the patient's world, what he is dealing with (Nurse, experienced).* *One has seen patients in various conditions, communicated with them, and knows what they are dealing with (Nurse, average experience)*	By communicating with patients, you gain insight into their world and what they are dealing with	Educator with clinical experience has better insight into patients experience and is more capable of psychological support	Clinical knowledge
Patient involvement	*…it is the patient who prioritizes. If we want the patient to stop smoking and he wants to start with losing weight, that is what we will help him with. We will get an opportunity to bring up the other issue* [smoking cessation] *later (Nurse, experienced).* *It is a challenge to find out where the patient is, what he is preoccupied with and how he experiences the situation and then we need to start from there (Nurse, experienced)*	If the patient wants to begin by losing weight, that's what we help him with. You need to find out, what the patient is preoccupied with and how he experiences the situation and start from there	Patient-centered education. Respect for the patient's wishes and decisions. Adapt education in response to the individual's needs and wishes	Advanced communication skills

The analyses began after the first interview had been implemented, with the researcher reading the transcribed interviews to obtain a general impression and following the STC process described above. In the final step of synthesizing, the researcher translated the summary of generalized descriptions and concepts of each interview into English. After each succeeding interview, the transcripts were analyzed in the same way and the generalized descriptions and concepts of these two interviews

compered and emerged, codes were recoded and themes split or lumped (Malterud, 2011/2012). After analyzing each interview, the researcher reviewed and adjusted the interview guide according to the themes that had been identified in the previous interviews (Morse et al., 2002). Interviews were conducted until no new themes were found.

The supervisors read some of the interviews in their respective languages to obtain an overview of the material and identify preliminary themes. These interviews were selected due to their richness of content. The themes and subthemes were then discussed among the researcher and the supervisors with a focus on how each member of the research group understood the content and meaning of the themes and whether and how they related to the research aims. The themes were then refined and renamed, with some selected for further attention.

Halfway through the data collection and analysis and again when the data collection was finished, the analysis was presented to the NTNU research group on patient education and participation of which the researcher was a member. The themes and interpretations of the interviews were discussed critically, with reflections upon the commonalities and differences within and across themes. These discussions resulted in some themes being split or merged; later in the analytical process, subthemes merged into the main themes and the names of themes were changed several times (Malterud, 2011/ 2012).

In the end, the analysis was validated by the researcher with a thorough review of the original transcript of each interview to ensure all points of significance were reflected in the results and to ensure misconceptions were avoided.

The researcher selected citations that best illustrated the themes that supported the results and reflected patient views and the multi-professional diversity, and translated them into English. The translations were validated by the supervisors. To put the results into context, citations in Papers I and II were marked with the participant's profession and self-evaluated experience in patient education, while citations in Paper III with the participants' sex, age, whether they underwent primary or elective PCI, and time from PCI. The citations in the summary of results section of the thesis differ from the citations in the published papers in order to show more of the empirical data.

To help structure, manage, and code the transcripts systematically and document the decision trail, the computer programs QSR NVivo 9 and Mindjet MindManager 2012 were used.

3.4 ETHICAL CONSIDERATIONS

The study was conducted in accordance with the Declaration of Helsinki (World Medical Association, 2001). The first study involving health professionals was not subject to the approval of a research ethics committee, as no sensitive or personal health information was collected. The second study, involving patients with CHD, was approved by the Regional Committee for Medical Research Ethics (2014/947) in Norway and the Ethics Committee of Akureyri Hospital (3/2014) in Iceland. Participants were provided with written and oral information about the study, advised that participation was voluntary, and that they could withdraw at any time without need for an explanation. Written informed consent was obtained from the participants before the interviews were conducted. Confidentiality was assured by keeping the audio files locked down and deleting them as soon as the interviews had been transcribed. Transcripts were de-identified and the data were only accessible to the researchers.

4 SUMMARY OF RESULTS

4.1 PAPER I: KNOWLEDGE AND SKILLS NEEDED FOR PATIENT EDUCATION FOR INDIVIDUALS WITH CORONARY HEART DISEASE: THE PERSPECTIVE OF HEALTH PROFESSIONALS

Icelandic and Norwegian registered nurses, physiotherapists, and cardiologists (n=19) who were experienced in patient education with CHD patients took part in this qualitative study.

The main finding was that health professionals considered sound theoretical and clinical knowledge essential for patient education, along with advanced communication skills that included being able to establish interpersonal relationships with patients, capture their learning needs, facilitate an effective dialogue, and provide individualized guidance and lifestyle counselling. Sound, updated medical knowledge about cardiac disease was viewed as a core competence and even the most important factor in patient education by some.

From a professional view, it is general theoretical knowledge. You need to have an understanding of cardiac disease. That is essential*; you need to understand what you are doing (Cardiologist, experienced).*

It was said that in order to be able to understand and help patients cope with CHD, educators must gain knowledge about each patient's experience, concerns, and emotional reactions.

What are people's reactions to this kind of diagnosis? What you can expect […]*? Many experience grief; they were healthy yesterday and sick today. This is a grieving process that you need to be familiar with (Nurse, experienced).*

The need for knowledge in educational science and adult learning was articulated; participants stressed that health professionals must know how to acquire new knowledge and be up to date in evidence-based medicine and contemporary topics under discussion in society. Interdisciplinary medical knowledge and knowledge about educational topics presented by other health professional disciplines were also deemed necessary.

It is important in patient education to cardiac patients that everyone gives the same message. […] *If the information is not congruent with the brochures or what the nutritionist said, there will be some kind of distrust and disbelief in what we say* […]*. There must be harmony in the message we give (Nurse, experienced).*

Clinical experience was considered to lead to the type of clinical knowledge necessary for patient education, but interest and dedication were both seen as prerequisites for clinical experience to result in competence in patient education. The participants stated that the ability to capture a patient's learning needs and confidence, to let go of predefined topics, and to allow the patient's concerns and interests set the agenda for the education all depended on clinical experience. In addition, a more experienced educator was considered to be more sensitive to patient signals.

To learn to understand the signals the patients give, facial expressions, verbal and non-verbal communication. You don't learn that instantly, you need to have patient contact over a longer period to learn to know them—the variety of individuals (Nurse, experienced).

The ability to connect to people, establish interpersonal relationships, and build trust was identified as the foundation for effective communication and patient education. This skill included being caring and able to empathize and show genuine interest in the patient.

The communication skill is the most important, even more important than what the education includes. This capability to connect to people; the more experienced you become the more you realize this. That is, you don't need to be so preoccupied with what you say or how you say it, but more importantly you have to be able to reach out to people, establish a connection [...]*. The key is that in communication you will achieve more if you can make this connection (Nurse, experienced).*

Another important cluster of interpersonal relationships was identified as modest behavior, a non-judgmental attitude, and respect for patient wishes, needs, and decisions. The ability to create a climate that promotes learning and makes patients feel comfortable asking questions and discussing sensitive topics was emphasized. To communicate relevant knowledge at a relevant time in a way that motivates learning and a healthier lifestyle was often considered the biggest challenge to patient education.

It's about awareness of the patient's reality. That one does not force information on the patient, but rather relates to his reality and what is important for him (Cardiologist, experienced).

The participants' suggestions for the theoretical and clinical knowledge and communication skills needed for health professionals to implement quality patient education for patients with CHD are summarized in Appendix III.

4.2 PAPER II: HOW TO BECOME AN EXPERT EDUCATOR: A QUALITATIVE STUDY ON THE VIEW OF HEALTH PROFESSIONALS WITH EXPERIENCE IN PATIENT EDUCATION

Icelandic and Norwegian registered nurses, physiotherapists, and cardiologists (n=19) who had worked in cardiac care for 12 years on average participated in this qualitative study.

An expert patient educator was described as a health professional with advanced, up-to-date theoretical knowledge of cardiology and educational science, a holistic view of patients' situations, and sensitivity to and knowledge of their psychological well-being. According to the health professionals, being sensitive to the patient's interests and learning needs and possessing the ability to tailor education to each patient's needs and the context of each situation are the hallmarks of an expert educator. Confidence and excellent communication skills were also seen as characteristics of the expert educator.

He [the expert] *has this confidence, can assess the patient, and knows when he is ready* […]. *It is this competence in assessing the situation, assessing the patient, and using communication that makes one competent in patient education. And of course if someone is to be expert in patient education, that person needs to have more education, especially in patient education, communication, and in developing patient educational material (Nurse, experienced).*

A novice educator was described as having little clinical experience in cardiac care and patient education, and thus likely to exhibit underdeveloped communication skills and lack sensitivity towards the patient's interests and needs, limiting their ability to prioritize information according to each patient's needs.

Those who are new often start educating the patient as soon as he comes from the PCI and the patient is not at all in that place yet, is just recovering from the shock (Nurse, experienced).

The development from novice to expert was commonly seen as a process that develops over time through education, long-term clinical experience in cardiac care, a supportive learning environment, and active participation in and personal motivation for patient education. The health professionals said that a supportive learning environment at the workplace was motivational, inspiring knowledge seeking and facilitating the development of competence. Examples of factors identified as motivational included having dedicated time at work for knowledge development, peer support, and informal and formal knowledge sharing. A summary of educational resources suggested by the health professionals to enhance learning is presented in Table 6.

Table 6. Supportive educational resources suggested by health professionals

Guidance in finding relevant literature.
Central collection of literature and patient educational material available at the workplace.
Clinical guidelines.
Standardized patient educational sessions and standard instructions for patient education.
Multidisciplinary team meetings and networks of professionals in patient education.
Conferences and continuing education courses.

Clinical experience with cardiac patients was considered invaluable for developing the skills that increase ability to "read" patients and "meet them where they are"; the need for training in providing patient education and communicating with patients was also emphasized.

This is about experience in communicating with patients and relatives, a knowledge you don't get in a classroom, a knowledge that you will only get from face-to-face contact with patients (Cardiologist, experienced).

The participants expressed concern that a lack of knowledge and confidence could add to health professionals' reluctance to conduct patient education, thus hindering their professional development. To counteract this effect, observation of more experienced educators, experiential training, and guidance from experienced educators were suggested. Supervised practice, mentoring, and constructive critical reflection on patient educational experiences and performances were all seen as important factors to enhance the development of experts.

To sit down after the interview and talk about it, "why did you say this but not that?" Go through the interview (Nurse, experienced).

In terms of increasing the complexity of challenges that an educator undertakes, the process was outlined as beginning with providing individual patient education, in which the novice educator has time to practice with only one patient, thus making it easier to observe and reflect on one's own actions. Once confidence in that context has been established, the educator should proceed to providing group patient education and facilitating discussions between patients. For individual counselling and follow-ups, longer experience and more extensive education and training were deemed necessary.

Experienced educators expressed the need for peer support, inter-professional cooperation, and mentoring to continue developing their competence. To facilitate more contact and discussions with other expert educators, a network of professionals in patient education was suggested.

You learn a lot from your colleague; I would find it interesting if those who follow up on the patients in various places [in the country]*, the nurses, physiotherapists, and physicians, could meet. Not in a conference, but more like in a meeting, once a year, or maybe more often and they could discuss what is new and what they have experienced as effective and so on (Nurse, experienced).*

4.3 PAPER III: WHAT IS A GOOD EDUCATOR? A QUALITATIVE STUDY ON THE PERSPECTIVE OF INDIVIDUALS WITH CORONARY HEART DISEASE

Icelandic and Norwegian patients (n=17) with CHD who had been through PCI and participated in patient education after discharge from hospital took part in this qualitative study.

The patients saw a good educator as one who they felt was trustworthy and who individualized education to different patients' needs and contexts, translating general information to their personal situations in lay language. To trust educators and be willing to follow their advice, patients said that they needed to feel that educators knew what they were talking about. Factors that the patients used to judge educator´s reliability included how confident and competent they perceived an educator to be in explaining and answering questions and the congruency of information supplied by health professionals with the patient's own prior knowledge or beliefs. Knowing that given information was based on scientific knowledge and that the educator spoke honestly about the patient's situation, while admitting a lack of knowledge where appropriate, was also reported to help in building trust.

The patients wanted patient education from health professionals that specialized in cardiac care and had worked with cardiac patients, as they felt these characteristics made educators more trustworthy and more likely to have a nuanced understanding of a patient's situation.

Those people have seen everything in this and know a bit about what you are going through (F <60, p-PCI 10.5 months earlier).

Having a feeling of a personal connection with educators also enhanced the patients' trust in them.

The more you talk to that person and get to know her a little, there will be this building of trust (M ≥60, e-PCI 10.5 months earlier).

The patients said they would be more relaxed and more receptive to information when they felt educators were emotionally "present" and had time, were aware of what patients had been undergoing, and treated them with respect and as equals. This also helped the patients express themselves more freely and made them more comfortable in speaking freely and asking questions.
I have only met warm and friendly faces, which I find very important, I especially find a warm demeanor important (M ≥60, e-PCI 19 months earlier).

The patients preferred individual, face-to-face patient education; the desire to have an educator sit down with them and translate general information to their personal situations in lay language was common to all the patients.

It [written educational material] *does not have the same effect and depth as patient education where there is time to go over things and if people don't understand, then the educator reads the patient and then he* [the educator] *may have to repeat (M ≥60, p-PCI 6 months earlier).*

Another aspect of individualized education was that an educator must be capable of selecting the right time and place for patient education. All patients expressed a need for more patient education after discharge, with many emphasizing the need for repetition of key information.

You get a lot of information when you are discharged but you just don't receive it all, […]*. An interview shortly after discharge would be better* […]*. It is this follow-up that is needed (M <60, p-PCI 7 months earlier).*

Most of the patients stressed the importance of retaining a sense of control but expected the educators to guide them in their choices. However, when realizing that they had made poor choices or had failed to follow sage advice, some patients felt that educators should have tried to persuade them more stridently or be stricter in some other manner. The patients also gave examples of instances where they felt that the educator should make decisions for them or take control, such as when they felt their condition was too serious or when they felt that they did not have sufficient knowledge to make a decision themselves.

5 DISCUSSION

5.1 DISCUSSION OF METHODS

Choice of study design

Qualitative research methods are founded on an understanding of research as a systemic and reflective process for development of knowledge that can somehow be contested and shared (Malterud, 2001b, p. 483).

A qualitative research approach with semi-structured, face-to-face individual interviews was selected as the research method. The aim of qualitative research is to investigate the meaning of social phenomena as experienced by individuals themselves (Malterud, 2001a). This is an appropriate method of data collection when inquires relate to personal views, experiences, and perceptions (Morse, 2012). This research design fits well for providing an understanding of the issues perceived to be important by patients and health professionals.

Qualitative research methods include various strategies for systematic collection, organization, and interpretation of textural material obtained through observations or discussions (Malterud, 2001a). A qualitative interview was chosen as the method for data collection as it attempts to understand the world from the participants' point of view (Brinkmann & Kvale, 2015). In order to obtain granular data (Morse, 2012) and enable the participants to feel free in expressing themselves, individual, face-to-face interviews were used. A research interview is a professional conversation in which the researcher initiates and defines the interview situation, determines the topic, poses questions, decides which answers merit following up, and terminates the conversation (Brinkmann & Kvale, 2015).

Some of the patients (Paper III) had not previously thought about the issue they were asked to consider. Their answers were to some extent limited to descriptions of the patient education they had received and there were a notable number of monosyllabic answers in those interviews. Focus groups can result in collective interaction that brings forth more spontaneous expressive views than individual interviews (Brinkmann & Kvale, 2015). In those cases a focus group interview may have created a more productive atmosphere, stimulated more expression of conflicting viewpoints, and allowed group members to build on one another's ideas. However, focus group data are opinions given in response to questions asked in a group and therefore may not be a given participant's actual opinions, as there

may have been subtle coercion in the group setting, with some members feeling it was safer to agree with dominant members (Morse, 2012). It must be emphasized that many of the participants were in fact deeply reflective and that those interviews were productive. If we had chosen focus groups, we may have missed some information from those participants. However, adding focus group interviews to the individual interviews may have enhanced data richness.

The interviews in this thesis were semi-structured. The purpose of semi-structured interviews is to obtain descriptions of the life world of participants in order to interpret the meaning of the described phenomena. Semi-structured interviews are generally organized around a set of predetermined but open-ended questions, though there is openness to change in the sequence and form of questions in order to follow up on specific answers and stories offered by a participant (Brinkmann & Kvale, 2015). The interview guide was revised after each individual interview and the sequence of the questions varied depending on how the interview developed. The interview guide with predetermined, open-ended questions allowed the researcher to be prepared and appear competent during the interview. The interview guide also helped the researcher to explain clearly the purpose of the interview in the same fashion to all participants and ensure that all questions of importance were covered. The open-ended question format also helped the researcher in encouraging the participants to express their views as freely as possible in their own terms while simultaneously maintaining focus on the aim of the study.

Reliability and validity of the study

Research is only as good as the investigator. It is the researcher's creativity, sensitivity, flexibility and skill in using the verification strategies that determines the reliability and validity of the evolving study (Morse et al., 2002, p. 17).

To ensure the study's reliability and validity, we aimed at systematic research design, data collection, and analysis (Malterud, 2001b). To ensure the strength of the results even further, we focused on verification of the study throughout the research process, as suggested by Morse et al., (2002). Verification refers to the actions used during the research process and helps the researcher identify when to continue, stop, or modify the research process in order to achieve reliability and validity (Morse et al., 2002). To enhance reliability and validity of the results, these mechanisms were woven into every step of this research project, with the researcher moving back and forth between literature, formulation and modification of interview guides, recruitment, data collection, and analysis.

Malterud (2001b) argues that relevance, validity, and reflexivity are appropriate general standards for qualitative research and uses the terms reflexivity, transferability, and interpretation in assessing the value of qualitative studies.

Reflexivity

According to Malterud (2001b), researcher background and position will affect choice of study topic, the approach of the study, methods chosen, findings considered most appropriate, and the framing and communication of conclusions. Reflexivity starts by identifying preconceptions brought into the study by the researchers and assessing the effect of the researchers on all phases of the research process. All researchers must be honest and vigilant about their own perspectives, preexisting thoughts, and beliefs (Starks & Trinidad, 2007). The researcher in this project is a registered nurse with substantial experience and engagement in organizing and implementing patient education for individuals with CHD and experience in teaching patient education to nursing students. The researcher's background helped in the development of the interview guide and in relating to and reflecting on participants' experiences and may have led to a richer understanding of their comments. However, this may also have caused blindness to new perspectives or nuances in the answers not observed or taken for granted, any or all of which could have influenced the results.

Malterud (2001b) suggests that multiple researchers strengthen the design of a study by enhancing reflexivity and improving analytical quality through their different approaches to the same subject will result in a broader understanding of the phenomenon under study. In addition to the researcher in this project, the research team consisted of two supervisors, one a professor in behavioural sciences in medicine and health service research and the other a professor in nursing with experience in patient education of individuals with diabetes. Both supervisors had extensive experience in research on patient education. The different clinical and educational backgrounds among the research team resulted in the sharing of different preconceptions and viewpoints, which led to several periods of reflection and discussion throughout the research process. This minimized the effect of any one person's preconceptions and mitigated researcher blindness. The supervisors' extensive experience in research on patient education was also invaluable in the development of the overall research design and the interview guide, and in the analytical process.

Additional reflexive practices include consulting with mentors and colleagues (Starks & Trinidad, 2007). The research group on patient education and participation at NTNU was used actively as a discussion forum during the development of the study and in the process of designing the interview guide and analyzing the results. In addition to the research team, the research group on patient education and participation at NTNU consisted of health professionals experienced in research, with varied

professional and clinical backgrounds. The research group represented most of the health professions traditionally included in a multidisciplinary team that is responsible for education of patients with CHD; nurse, physiotherapist, sociologist, psychologist and pharmacologist. Including a cardiologist in the research team may have given us an additional perspective. Furthermore, including a patient in the research team could have offered a perspective that may have been overlooked by all the health professionals, regardless of specialty. However, the experience and diversity of professional background within the research team and in the research group resulted in a wide of variety perspectives that were reflected upon and critically discussed. This active participation of the research group helped to strengthen the study design and ensured valid interpretation of the results. To reflect further on the interpretation of those results, they were presented and discussed at various conferences and meetings. Every part of this critical reflection process helped limit bias and increase understanding of the meaning of the data; new perspectives were observed and explored more deeply.

The research interview is a professional conversation that typically involves a clear power asymmetry between researcher and participant (Brinkmann & Kvale, 2015). To help create a relaxed and productive atmosphere, we aimed at informal, quiet settings in which the participants felt secure and comfortable. We therefore decided that participants would choose interview locations, with the limitation that privacy was requested; the researcher ensured that she did not start the interview until she felt that the participants were sufficiently relaxed in her presence. The relationship and extent of interaction between researcher and participants can have an effect on both participants' responses and researchers' understandings of the phenomena discussed (Tong et al., 2007). To minimize these effects, no patients with whom the researcher had personal or professional relationships were recruited for the study (Paper III). However, a connection to the researcher may also have made some participants feel safer in expressing themselves and possibly share things that they would not have said to a complete stranger. In choosing not to include familiar patients, we may have thus missed some important views, but as the variation in the data from the patients was considerable, this concern was deemed to have no negative influence.

The health professionals (Papers I and II) were aware of the researcher's long experience with educating cardiac patients. This may have made some of them insecure, as some asked for affirmation of the relevance of the information they related and if their performances were acceptable. The researcher responded that all views and experiences were relevant and important. However, at least some professionals may have been reluctant to express their views fully or may have tailored their remarks to make them sound "professional" or to accord with their own notions of what the researcher wanted to hear. Similarly, all the patients (Paper III) were aware that the researcher was a health professional and the Icelandic participants were aware of her previous involvement with the nurse-

coordinated clinic from which they had received their patient education. Thus, they may have only expressed positive views; for example, statements about being very satisfied with "everything" or that the health professionals were very busy but kind and had tried to do their best, frequently followed an account of a negative experience or something that a participant believed could be improved. To encourage frank expressions, patient participants were reassured that the goal was to reflect on the patient's desires for good educators rather than to evaluate or judge the service they had received; negative comments could help to improve patient education and everything they said was confidential.

A review of the interviews in Papers I-III made it clear that participants had expressed both positive and negative experiences. As some of the interviews were conducted in the researcher's second language, some nuances in the language may have been missed and important follow-up questions may not have been posed. However, a comparison of the results between the two countries and languages showed no apparent differences. We therefore argue that those limitations did not have significant negative effect on the results.

Transferability

Transferability relates to whether the study investigates what it intended to and the scope of people and topics that the findings cover. Transferability is affected by an adequate and sufficiently diverse sample (Malterud, 2011/2012). A sample of participants who best represent or have knowledge of the research topic ensures efficient and effective saturation of categories, with optimal data quality (Morse et al., 2002). Health professionals with experience in patient education possess a valuable form of clinical knowledge acquired through experience, as well as theoretical knowledge. Patients with experience of CHD disease and patient education possess knowledge from the users' perspective, which is of enormous import in improving patient education. The sample therefore consisted of a group of participants with a good knowledge of the research topic, from experience with patient education, either as user or professional.

Choosing participants with varied experience increases the possibility of shedding light on the research question from different perspectives (Graneheim & Lundman, 2004). To explore the research topic from a wide range of perspectives, we selected participants from both genders and different ages who lived in two countries; the sample included both health professionals and patients. For the interviews with health professionals (Papers I and II) we sought a broad range of experiences and included health professionals from three different professions. For the interviews with patients (Paper III) we recruited individuals with variations in disease history who were treated at four different treatment centers and who had participated in different educational programs. There was also a broad spectrum of time elapsed from incident to interview, extending to as many as 19 months of disease process. This

variability meant that we were able to explore the research topic from different perspectives and the data consequently reflected diverse aspects of the knowledge and skills needed in patient education for patients with CHD from the perspectives of both users and professionals, all of which contributes to the strength of the study.

Given this and that the results of this study demonstrate a diversity in patient preferences and are supported by research in other areas, we argue that the findings are likely to be transferable to other patients with CHD in other settings. The sample in study one (Papers I and II) was skewed toward females and nurses being a majority of the sample, as we were not able to recruit more men or physicians and physiotherapists. We also had few health professionals with only limited experience. In Paper III we did not include patients who had participated in patient education delivered by lay leaders, as the focus of our study was on health professionals' knowledge and skills. By including patients from such courses we might have enriched our data with insights into how they saw the competences of lay leaders, which could certainly be useful in patient education and adapted by health professionals. All of the above limits the generalizability of the results. In recruiting the patients for Paper III we were dependent on nurses in the patient education programs. In addition, most of the patients felt that they had been taken care of by expert health professionals. Their gratitude for the care they had received may have colored their perceptions and hindered them in expressing certain negative opinions. We may therefore have missed some critical or negative voices. However, as the actual data included both positive and negative experiences, we argue that this concern did not have a great effect on patients' willingness to express themselves or on the generalizability of the data.

Another limitation of this thesis is that it does not distinguish between the competencies needed for different educational methods, such as group or individual education, or contexts, such as education in hospital or after discharge, or time from the event. Further research is therefore needed to understand more clearly which competencies are most beneficial in different educational settings and along the disease continuum. This could help uncover how these competencies should be taught in continuing education for health professionals, since it is likely to be important step in increasing the quality of educators.

The richness of data collected is also important for establishing study transferability, and depends on a study's goals and purpose (Starks & Trinidad, 2007), the complexity of the phenomena under study, and quality of the data (Graneheim & Lundman, 2004). To ensure that the sample was adequate and that all subjects relevant to the aim of the study had emerged we continued interviews until no new themes were found and all authors agreed that data sampling was adequate. That the data collection was sufficient was confirmed in the presentation of the results and in discussions with supervisors and within the research group, in which no new themes or perspectives were proposed.

When the data collection extends over time, there is a risk of inconsistency during data collection (Graneheim & Lundman, 2004). The data collection in the study with patients with CHD (Paper III) went on for almost twelve months, longer than had been hoped and attributable to challenges in recruiting patients. However, the data was collected by only one researcher, the interview guide was assessed after each interview as explained in the Method section (page 26-27), and the analysis of prior data was reviewed before each successive interview. We therefore believe the time elapsed did not have a significant effect on the consistency of the interviews or the data collected.

The transferability of the research project is also supported by research in other areas. One example of this is that both health professionals (Paper I) and patients (Paper III) considered it important that health professionals be able to create a climate that promotes learning and makes patients feel comfortable when asking questions and expressing themselves. This has previously been demonstrated in a study among diabetes support facilitators (Costello, 2013) and among cardiac patients, who reported that they felt more relaxed and able to confide and discuss issues freely when they felt on the same level as the health professional (Wright et al., 2001).

Interpretation and analysis

Interpretation is an integral part of qualitative research (Malterud, 2001b), and involves creating meaning by identifying patterns and developing context for the understanding of experiences and descriptions (Stige et al., 2009). Text always involves multiple meaning and there will always be some degree of interpretation when approaching text (Graneheim & Lundman, 2004). While translating the results into English, some meanings or nuances may have been lost as finding similar meanings for expressions was a regular challenge. We however strove to stay as close as possible to the original text while also ensuring it was easily readable. At the end of the analysis the translations were validated by the supervisors.

The researcher's task is to organize, compare, and validate alternative interpretations (Malterud, 2001b). Interpretation and analysis of qualitative data should be thorough, well prepared, systematic, and well documented. Frames of reference should be described, while research procedures should be transparent (Malterud, 2001b). Silence, sighs, laughter, and the like may influence the underlying meaning of the text (Graneheim & Lundman, 2004). Therefore the researcher listened to all the interviews on audiotapes and silence, sighs, and laughter were marked in the transcripts. In addition, notes were taken after each interview.

The four-step analytical procedure of systematic text condensation (Malterud, 2011/2012) was followed to facilitate systematic interpretation and analysis of data. This is a descriptive and

transparent approach that presents the experiences of the participants as they themselves expressed them rather than exploring the underlying meaning of the text. This approach was therefore well suited to the development of descriptions and notions about knowledge and experiences related to patient education.

To help in organizing the data systematically, the computer programs QSR NVivo 9 and Mindjet MindManager 2012 were used. Every step of the analysis was documented in detail by writing notes, entering codes and themes in the Mindjet MindManager program after analyzing each interview and keeping each step of the analysis for later reference. This decision trail increased the understanding of the meaning of the data and supported the reflexivity of the results.

Figures 1 and 2 show examples of how we worked with codes and themes and how the decision trail was documented with Mindjet MindManager 2012 at different stages of the process of analysis.

Figure 1. Screenshot of codes and themes early in the analytical process of Paper III

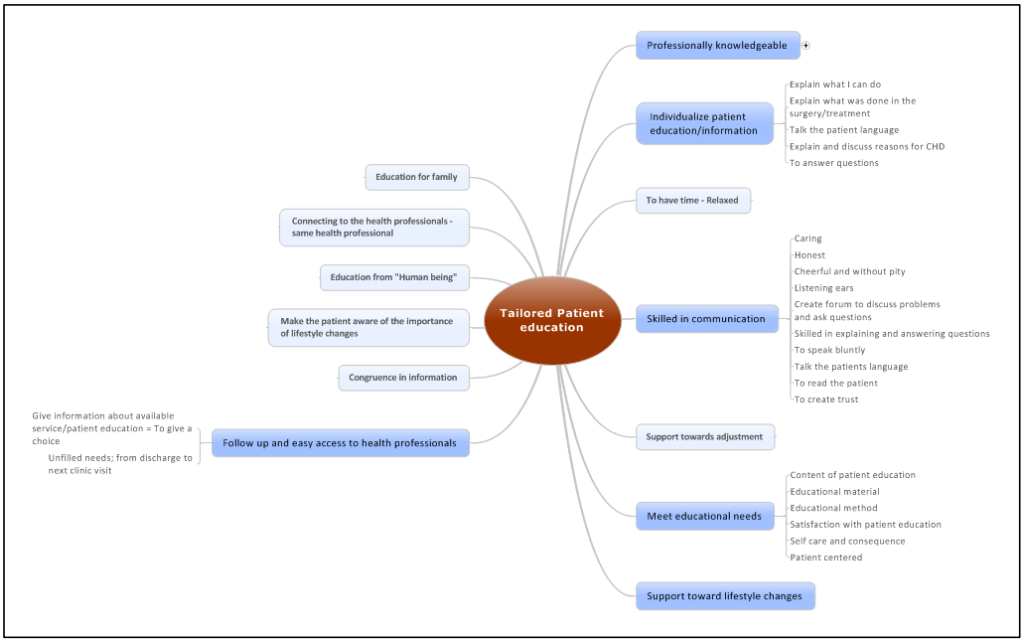
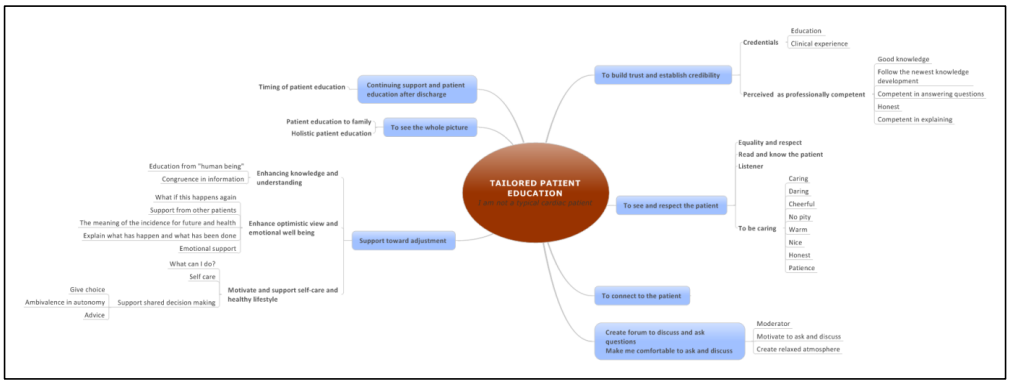


Figure 2. Screenshot of codes and themes late in the analytical process of Paper III



Collecting and analyzing data concurrently and employing iterative interaction between data and analysis are the essence of reliability and validity (Morse et al., 2002). In accordance with this requirement, the analysis of the data in the research project was conducted stepwise with each interview, and moved back and forth between interview guide, reading literature, recruiting participants, collecting data, and analytical tasks. After analyzing each interview, the researcher reviewed the interview guide and made minor adjustments based on the themes that had arisen in previous interviews; ideas emerging from data were reconfirmed in succeeding interviews. It was not possible in some cases to analyze every interview before conducting the next one, due to participant availability. In those cases the interview guide was reviewed by consulting the notes made immediately after the interview.

To provide a transparent description of the procedure from data to findings we have illustrated examples of how meaning units, condensations, and themes were created in the analytical process. This is shown in Table 5, page 29 in the Method section of the theses and in Paper I, page 3.

Other aspects that affect research are similarities and differences between categories and how well categories and themes cover data (Graneheim & Lundman, 2004). To avoid misconceptions and ensure that no relevant data was excluded or irrelevant data included in the results, the transcribed interviews were read and re-read throughout the analytical process, by the first author and in their respective languages by the co-authors and discussed in both the author group and the NTNU research group described above. When the analysis was complete, the researcher compared the original transcript of each interview to the final results to ensure that all significant points were reflected in the results. To support and put the results into context, citations that best illustrated the themes were chosen.

5.2 DISCUSSION OF MAIN FINDINGS

There was a consensus among the health professionals and the patients that having sound, updated theoretical and clinical knowledge, along with good communication skills, were the essential characteristics of a good educator. This included being able to establish trusting relationships with patients, capturing their learning needs, facilitating effective dialogues, and providing individualized patient education. The patients preferred individualized, face-to-face patient education from a health professional specialized in cardiac care. Both health professionals and patients described the ability to tailor education to each patient's needs and context as the most important characteristics of a good educator. The patients also saw a good educator as one who they felt was trustworthy and able to translate general information into their personal situation in lay language. Building trust depended on the patients' perceiving educators to be knowledgeable and good at connecting with individual patients, so that patients felt that they were being treated as whole person with equality and respect. This was also seen as an important aspect by the health professionals. To grow into an expert educator, the novice educator was needed to possess inner motivation, participate actively, and have a supportive learning environment. Supportive educational resources, observation, experiential training, and guidance from experienced educators were cited as examples of resources that enhance competence development. Experienced educators expressed the need for and benefit of peer support, inter-professional cooperation, and mentoring to continue improving their patient education skills.

Knowledgeable educator

Both health professionals and patients in this thesis (Papers I and III) saw knowledge as the foundation of quality patient education. Knowledge forms part of clinical competence and includes an awareness of the need for knowledge, and being able to find, critically evaluate, and use interdisciplinary, evidence-based knowledge in clinical practice (Lejonqvist et al., 2012). Possessing sufficient theoretical knowledge (Tabari-Khomeiran et al., 2007) and being professionally up to date are therefore considered crucial in competence development (Gould et al., 2007). In the theory of evolution from novice to expert, Benner (2001) postulates that theoretical knowledge provides a background that enables health professionals to learn from experience, but is not sufficient as it cannot adequately mimic the complexities of actual clinical practice. Hence, clinical experience is essential for developing expertise (Benner, 2001). Similarly, in a theory of competence development, Tabari-Khomeiran et al. (2007) consider experience to be an opportunity to make the link between theory and practice and the most important factor influencing competence development.

In the prevention model proposed by Berra et al. (2011) the focus is on promoting healthy lifestyle habits, using a multidisciplinary approach. Knowledge in lifestyle counselling is considered essential in secondary prevention (Astin et al., 2014), including knowledge and training in smoking cessation, implementing a cardio-protective diet, adapting physical activity and exercise, and reducing weight (Berra et al., 2011). Both the health professionals (Paper I) and the patients (Paper III) expressed the need for the educator to have sufficient knowledge to support the patient's development of a healthy lifestyle. To be able to do that, the health professionals reported that they needed training in consultation and patient-centered care, including knowledge of the stages of change model and motivational interviewing. Those methods have proven beneficial on two-year outcomes in patients' weight parameters, physical activity, perceived stress, and the number of patients who achieved blood pressure control (Drevenhorn et al., 2012). Competence in supporting patients' moving towards healthy lifestyles is especially important, as CHD is largely preventable (Mendis et al., 2011). The disease is strongly related to unhealthy lifestyles (Di Chiara & Vanuzzo, 2009; Kuulasmaa et al., 2000; Perk et al., 2012; Schnohr et al., 2015), and large proportions of individuals with CHD do not achieve the recommended lifestyles, risk factors levels, and therapeutic targets (Kotseva et al., 2009). Furthermore, the health professionals (Paper I) saw lifestyle counselling as the most challenging task in educating individuals with CHD. This view accords with research in which health professionals have reported that the lack of counselling skills represents a serious barrier to lifestyle counselling (Jansink et al., 2010; Svavarsdóttir & Hallgrímsdóttir, 2008), identifying a central competence that requires a greater commitment of resources to training.

To educate patients effectively, health professionals must have knowledge of the principles of adult learning and barriers to learning (Beagley, 2011). For patient education in cardiac care it is recommended that nurses have knowledge about adult learning theory, health literacy, communication skills, and effective health behavioral change (Astin et al., 2015a/ 2015b). A key principle of the model presented by Berra et al. (2001) is that preventive care should be implemented according to evidence-based guidelines. There was a difference in how much weight the participants in the different studies placed on medical knowledge and educational science. Awareness of the importance of being up to date in CHD medical knowledge and the best available treatments were considered essential for competence in patient education by both health professionals (Study I) and the patient (Study III). However, there was not the same consensus about the necessity of teaching methods being evidence-based among the health professionals, as some deeply appreciated learning by doing and consulting colleagues as the primary method of seeking knowledge in terms of patient education. Nurses in primary care, municipal care, and hospital care have been found to consider knowledge in educational science important for patient education (Bergh et al., 2014), as do nurses

with experience in counselling patients with hypertension (Eriksson & Nilsson, 2008). However, it has also been stated that nurses underestimated its value (Bergh et al., 2012), and some nurses believe giving information and communicating are natural rather than learned abilities (Ivarsson & Nilsson, 2009). Research indicates that patient education is performed in an unarticulated and unreflective way (Bergh et al., 2014), guided far more by personal experience rather than by evidence (Friberg et al., 2012). Nurses have also reported their lack of reading literature related to patient education and failure to follow the development of knowledge in those areas (Bergh et al., 2012). To ensure high-quality patient education, the importance of knowledge in educational science and using evidence-based patient education must be recognized by health professionals.

As articulated by the patients (Paper III), if patients are to trust educators and be motivated to follow health professionals' advice, they needed to feel that educators knew what they were talking about, including knowing that the information supplied is reliable and based on contemporary scientific knowledge. To be able to achieve this goal, all health professionals must have the time and other resources needed to follow up on new knowledge. However, in accordance with previous research (Bergh et al., 2014), the health professionals (Paper I) indicated that lack of time was a key limiting factor in keeping up with evidence-based practices. It is concerning that not all the health professionals (Studies I and II) were aware of guidelines useful in patient education for patients with CHD. Although not specifically about patient education, European guidelines on cardiovascular disease prevention in clinical practice (Perk et al., 2012) address important issues in patient education for patients with CHD. The guidelines should be easily accessible to all health professionals and are an important tool in guiding the education of this patient population. This situation raises doubts about whether evidence-based practice is being implemented in patient education and emphasizes the need for health professionals to take an active role in regularly developing their own knowledge.

The expected learning outcomes of the core curriculum for the professional development of nurses in education and communication (Astin et al., 2015a/2015b) accord with the health professionals' perceptions of the knowledge and skills needed for educating patient with CHD competently. Examples include applying theories of adult learning, demonstrating the ability to assess a patient's learning needs, develop an individualized health education plan, and use effective communication skills. Selected aspects of all the other themes in the core curriculum also represent the health professionals' views of the knowledge and skills needed for patient education. This emphasizes that patient education requires blending a variety of skills and backgrounds in cardiology, as suggested by both health professionals (Paper I) and patients (Paper III). Therefore, our results indicate that health professionals needs to be competent in all eight learning modules of the core curriculum to be deemed good patient educators.

Competence in patient education requires a mixture of evidence-based knowledge and clinical experience in cardiology, in which knowledge of educational science and how to support patients' evolution towards a healthy lifestyle are especially important. To ensure effective patient education, the importance of knowledge of educational science and using effective patient education methods to motivate patients and enhance successful lifestyle changes must be recognized by health professionals.

Communication and building trust

Communication is a special clinical skill in which training is crucial (Perk et al., 2012). With the recent emphasis on patient empowerment and patient-centered care (Aujoulat et al., 2007; De Haes, 2006; WHO., 2005), the importance of training in communication is even greater. Health professionals need communication skills that elicit information from the patient's point of view, and must meet patients at their own different levels of understanding. Health professionals need to be trained in interviewing and enquiring comfortably about patients' concerns, emotions, social situations, and behaviors. They also require sufficient training in skills to aid patients in lifestyle changes and empowering communication skills that allow health professionals to share authority and involve patients in all aspects of healthcare decision-making (WHO, 2005). Consistent with prior research (Albarran et al., 2014; Costello, 2013), both health professionals (Paper I) and patients (Paper III) considered it important for health professionals to demonstrate effective communication skills. According to patients, more time should be devoted to communication skills in the curriculum for cardiac nurses (Albarran et al., 2014).

Encounters with patients and families are a crucial part of clinical competence (Lejonqvist et al., 2012); health professionals involved in educating adults need to convey a genuine desire to connect with the patient (Russell, 2006). The results (Papers I and III) indicate that the ability to establish interpersonal relationships and build trust is the foundation of effective communication and patient education. This conclusion is supported by a newly published study in which physicians reported that connecting with patients and building trust were central concepts in patient education (Stenfors-Hayes et al., 2015). Several studies have demonstrated that trust is central to any patient-provider relationship (Halldórsdóttir, 2008). Trust has been associated with successful lifestyle changes (Jones et al., 2012), adherence to medication and treatment plans (Polinski et al., 2014), preference for involvement in medical treatment (Trachtenberg et al., 2005), and perceived control over the disease (Kayaniyil et al., 2009).

One recent study notes that that promoting trust is a demonstration of the provider's ability to show interpersonal and technical competence, moral comportment, and vigilance in supporting positive patient outcomes (Murray & McCrone, 2015). The patients (Paper III) said that having a sense of personal connection with educators enhanced their trust in them. The patients reported that by connecting with patients and using communication skills that made patients feel seen, heard, and respected, educator could enable free, relaxed, and effective expression by the patients (Paper III). Similarly, the health professionals (Paper I) said that by relating and connecting to patients, educators would be more competent in supporting them through illness and recovery. Trust is a central concept in patient education; it is intimately connected to the patient-provider relationship and demands the patient's faith in the educator as a competent health professional. Thus, knowledge and competence in skills that facilitate a trusting patient-provider relationship is essential for educators.

Knowledge is necessary for the development of a professional relationship and building trust between health professionals and patients (Dinç & Gastmans, 2013; Eriksson & Nilsson, 2008; Rørtveit et al., 2015). In the present study, patients' perceptions of educators' knowledge (Paper III) had a strong influence on their trust in a given educator. Hence, merely possessing advanced knowledge is insufficient; the educator must make a credible impression (Eriksson & Nilsson, 2008) and demonstrate their competence and knowledge to the patients (Rørtveit et al., 2015). Doing so will likely help patients pay more attention to any advice and information that educators offer. The patients (Paper III) believed educators to be more knowledgeable and thus trusted them more fully if they perceived them as confident, if there was congruence in all information they received, and if they knew that educators had specialization and experience in cardiac care. This is supported by earlier studies that demonstrated that cardiac patients have a high degree of trust in their cardiologists (Kayaniyil et al., 2009) and that their preferred source of heart disease information and support of healthy lifestyles was cardiac rehabilitation staff (Higgins et al., 2005). Therefore, organized efforts to improve the competence of cardiac care health professionals in patient education and integrating patient education into the daily care of the cardiac patient could prove to be effective in increasing the proportions of individuals with CHD who do achieve recommended lifestyles, risk factors levels, and therapeutic targets. This promising possibility needs to be investigated further.

Patients must feel accepted and acknowledged as people before trust can develop (Eriksson & Nilsson, 2008). Educators need to be capable of creating an environment of equality, safety, and comfort that promotes learning and makes patients feel at ease in asking questions and expressing themselves (Costello, 2013). This view accords with suggestions from both health professionals (Paper I) and patients (Paper III) about the beneficial effect of creating a sense of equality in the relationship and identifying and respecting patients' values and preferences. It is also supported by results from a

qualitative study in which cardiac patients reported that they felt more relaxed and able to discuss issues freely when they felt equality in their relationships with health professionals (Wright et al., 2001). In the view of both health professionals (Paper I) and patients (Paper III), communicating with respect, displaying humility, and avoiding a judgmental tone or blaming the patient have been found to be important in patient education and help in establishing a trusting patient-provider relationship (Eriksson & Nilsson, 2008). To develop competence in building trusting patient-provider relationships and enabling productive dialogues with patients, educators need to be conscious of the fine line between presenting themselves as competent, knowledgeable professionals and being modest in behavior while meeting with the patient. Support and guidance from an experienced educator can help in this key developmental process.

The findings in this thesis reveal the complexity of choosing the appropriate communication style. The results in Papers I and III confirm the value of meeting patients at their own level (Eriksson & Nilsson, 2008) and using simple terminology to ensure optimal understanding by patients (Fitzpatrick & Hyde, 2005). However, the manner in which the patients (Study III) wanted to be dealt with varied substantially, and some patients even indicated contradictory preferences. Some patients wanted the educator to be strict when advising them in lifestyle changes while others said they became unreceptive to information if the educator talked to them with too much of an aura of authority. This emphasizes the need to develop skills in reading patients' individual preferences and needs.

While the health professionals (Study I) unanimously emphasized respect for the patients' needs and decisions, the patients (Study III) were divided regarding their preferences regarding their own participation in making decisions. Some patients stated that they would follow the advice of the health professionals, because they were the ones who knew best. However, all patients made it clear that they wanted to be informed about and included in discussions of their treatment. Similarly, prior research has indicated that patients have a high preference for information but not necessarily for participating in making decisions (Abrahamsen et al., 2014). Patients' preferences for participation in decision making appears to be strongly affected by the type of decision being made and the knowledge they have or perceive as necessary to make that decision. For example, patients have been found to prefer an active role in decisions about lifestyle and in decisions not dependent on medical knowledge; fear of making the wrong decisions often discourages patients from participating more actively in the decision-making process (Say et al., 2006). Our results reflect these conclusions; some of the patients (Study III) gave examples of wanting to be in control regarding decisions about diet and physical exercise, but felt that treatment with medication should be entirely in the hands of doctors. In addition, the patients in our study said that when they knew that the instructions and treatment were based on scientific knowledge they were less critical and more likely to consider the health professional to be

solely responsible for decisions about their health and more likely to follow any advice. However, the results indicate that some patients do not want to or are not ready to know every detail of their disease and treatment; in some cases, they prefer to leave decisions to health professionals. For those patients, empowering patient education and being patient-centered may imply the opposite of what one might expect; empowering some patients means acknowledging their preference that the health professional be in charge (de Haes, 2006). The ability to read patient preferences and needs and adjust communication strategies to patient preferences and level of understanding, while being knowledgeable about all the various factors that may affect those preferences and involvement in decision-making is a competence that health professionals need to develop to implement high-quality patient education.

Consistent with prior research (Albarran et al., 2014) that found that patients wanted nurses who could demonstrate compassion and address their emotional concerns through effective interpersonal skills, there was a consensus among health professionals (Paper I) and patients (Paper III) that educators need to be caring, friendly, and prepared to meet patients' emotional needs. Experience was seen as invaluable in addressing those needs, as it increases educators' understanding of what patients are going through. As with the health professionals in Study I, Stenfors-Hayes et al. (2015) in a semi-structured interviews with 25 family physicians found that physicians do take patients' feelings into consideration and support their emotional health. The health professionals emphasized that being able to empathize and show genuine interest in the patients were communication skills that were essential to establish interpersonal relationships. Similarly, the patients said that providers' demonstrating an interest in the patient, listening to them, and taking into consideration the effects of the disease on the patient's whole life would enhance the establishment of a productive interpersonal relationship. This accords with the results of a study in which nurses with experience in counselling patients with hypertension reported that having the time to listen and make patients feel welcome and important is a precondition for a productive dialogue with any patient (Eriksson & Nilsson, 2008). Continuing education in patient education must therefore have a clear focus on a holistic view of patients and how to support their emotional well-being.

To be able to justify a change in the patient's lifestyle, the nurse must be able to understand patient's everyday life and identify motives for change (Eriksson & Nilsson, 2008). It has been argued that engaging in dialogue with patients and empowering them with education improves adherence to the recommended treatment (Albert, 2008). Consistent with the philosophy of empowerment (Funnell & Anderson, 2003) and patients' wishes demonstrated in a prior study (Albarran et al., 2014), the health professionals (Paper III) believed that the educator's role is to inspire, inform, support, and facilitate

patients' efforts to identify and attain their own goals. Thus, health professionals need to be equipped to motivate patients and provide effective lifestyle counselling.

Shared authority and group ownership have been described as central for educators in diabetes care (Costello, 2013), which is in line with the view of both health professionals (Study I) and patients (Study III) that patients should be seen as active partners and that their concerns and interests should help steer the educational process. Increased emotional well-being has been reported among patients who receive patient-centered education compared to those who received standardized information (Sørlie et al., 2007). Shared decision making, feeling respected, and being regarded as a unique individual are crucial elements of patient-centered care (Thorarinsdottir & Kristjansson, 2014), and were also deemed important by both health professionals (Paper I) and patients (Paper III). Therefore, patient-centered communication is an important core competence in patient education in which health professionals require specific training if they are to develop into effective educators.

Tailoring the education to individual needs and contexts

According to Knowles's (1970) adult learning theory, the educator should be patient-centered and help the patients to learn instead of teaching subjects prescriptively. The educator must be primarily attuned to the concerns of the patient and be able to develop learning experiences that will be articulated with these concerns. Assessing where patients are, how open they are to information, and deciding when to move to the next step are all key aspects of effective patient education (Benner, 2001). Both health professionals (Paper I) and patients (Paper III) indicated that an educator must develop competence in identifying and meeting patients' preferences and needs and ensure a link to the patient's whole life. Health professionals (Paper III) said that showing sensitivity to patients' interests and learning needs and individualizing patient education was the hallmark of an expert educator. The patients (Paper III) also indicated that this was an important characteristic of a good educator.

In accord with the results presented in Paper I, Stenfors-Hayes et al. (2015) found that family physicians try to provide the right information at the right time and help patients contextualize and apply general information to their own situations. The physicians also said that they try to adapt their teaching to the patient's level of knowledge, what they believe the patient needs to know, and employ a mode of communication that suits that patient. The ability to meet patients' individual needs has long been central to the role of an expert educator, as emphasized by Benner (2001). Benner posits that understanding a patient's readiness to learn and knowing when to move ahead are expert competencies and key elements in effective patient education. The results in this thesis highlight the

importance of evaluating patients' readiness to learn as a part of individualization and enhancing patient and family participation in the patient education process. Health professionals thus need to be careful to use patients' experiences and concerns to guide every educational opportunity and should be trained in reading and assessing patients' learning needs so that they can adjust patient education to each context.

According to an analysis of Cochrane Reviews of educational and self-management interventions (Coster & Norman, 2009), most research literature refers to the delivery of structured and group-based patient education. However, there were no clear indicators as to whether education is better when provided in a group or delivered individually. In accord with previous research, the patients (Paper III) favored a verbal, face-to-face approach that enabled them to ask questions, obtain further explanations, and have a genuine opportunity for two-way discussion (Astin et al., 2008). The benefits of this approach are supported by Coster and Norman's analysis, which indicates that education delivered by a professional is demonstrated to have greater benefits than written information (2009). Patient education often comprises unplanned teaching embedded within care and treatment, and there is often either no or insufficient time for planning (Hult et al., 2009). Implementing unplanned individualized patient education is a challenge and requires a solid knowledge of the principles of learning and teaching and an advanced clinical skill possessed only by experienced educators. Support and training for novice educators to advance to this stage of competence development is therefore needed.

The view that the educator's role is to support patients and help them make informed decisions is in line with empowering patient education and patient-centered care (Anderson & Funnell, 2010). Empowering patient education has proven effective in helping patients manage their illness and improve health in other chronic diseases (Chen & Li, 2009; Kuo et al., 2014). The European guidelines on cardiovascular prevention (Perk et al., 2012) encourage health professionals to work with patients towards predefined goals of risk-factor management to slow or reverse the disease process. By contrast, the theory of empowerment postulates that goals and outcomes should neither be predefined by health professionals nor restricted to specific disease- or treatment-related outcomes. In this view, patients should play a major role in identifying their own learning needs and should be allowed to identify goals that are important to them and choose and achieve behavioral changes that facilitate personally meaningful improvements and outcomes (Aujoulat et al., 2007).

To follow the philosophy of empowerment and simultaneously work according to standard guidelines can be a challenge for the educator and requires advanced communication skills, genuine understanding, and training in empowering patient education, patient-centered care, and behavioral management. One way to address this complex balancing act and its attendant competencies is

recognizing patients as experts in their own care and involving them in the development of guidelines. Reflecting on patients' views and wishes in the guidelines would provide health professionals with a better understanding of patients' experiences and needs and the challenges that patients face on the way to healthier lives and thus may enhance empowering patient education. In a systematic review focusing on Lupus Erythematosus care (Serrano-Aguilar et al., 2015), patient participation in a clinical guideline development was found to be useful and efficient, thus warranting that clinical guideline development should include guidance from patients' views, needs, and expectations. In that case, patient involvement in clinical guideline development was feasible and useful, contributing to address the gaps between patient needs and preferences and the available evidence. Furthermore, the inclusion of patient representatives has been said to support the progression of patient-centered care and extend the value and potential use of clinical guidelines beyond health professionals.

For the patient to achieve lifestyle changes, follow-up and support are critical (Berra et al., 2011). Building trust is a dynamic process (Murray & McCrone, 2015), and taking time with the patient and having continuity in care is necessary for developing a trusting relationship (Eriksson & Nilsson, 2008; Murray & McCrone, 2015). Educators must know patients, their barriers to learning, and preferred learning styles for patient education to be effective (Beagley, 2011). Nurses have reported the value of working simultaneously in inpatient and outpatient consultations, which gives patients the opportunity to meet the same nurses during and after hospitalization, thus contributing to greater provider-patient continuity (Bergh et al., 2014). The patients (Paper III) also felt that educators needed to see them over time to get to know them and use that knowledge to tailor the education to their individual needs. Those results indicate that continuity in care and repeated interaction are needed for promoting a trusting patient-provider relationship and individualized patient education.

The results in this thesis highlight the importance of having competence in individualizing patient education. Thus, continuing education in patient education should aim at training the educator to read patients' learning needs and simultaneously adjust patient education to individual needs and contexts. Individualizing patient education can be challenging, even for the experienced educator, and demands experience and a solid knowledge of the principles of learning and teaching along with supervision of and guidance from experienced educators.

Competence development in patient education

To be able to educate patients effectively, educators need knowledge about the topics that they are going to teach (Eriksson & Nilsson, 2008). Lack of knowledge has been identified as a barrier to the implementation of patient education (Friberg et al., 2012). The health professionals in this study (Paper

II) were concerned that a lack of knowledge could add to health professionals' reluctance to conduct patient education, thus hindering their professional development. Treatment and education of CHD patients is complex and evolving rapidly. Competence development is a gradual and continual process along a continuum and may increase or decrease over time (Tabari-Khomeiran et al., 2007). Therefore, attention needs to be paid not only to the learning needs of novice educators but also to expert educators. In accordance with prior research (Kääriäinen & Kyngäs, 2010), the health professionals (Study III) considered further training for experienced educators to be necessary to ensure quality patient education. Educators need to commit to lifelong learning to remain as competent as they need to be. Educational intervention aimed at improving competence in patient education should therefore be provided to both novice and expert educators.

Certain individual personal characteristics can affect an individual's desire to learn. Curiosity and readiness to know more about anything relating to one's vocation, and involvement in any activities that could increase their abilities, are important in competence development. According to the health professionals (Paper II), inner motivation and an awareness of the value of patient education are both necessary for developing into an expert educator. This outlook can be compared to the theory of Tabari-Khomeiran et al. (2007), in which the initial necessary phase of competence development is the recognition and appreciation of the driving force that motivates the health professional towards competence development. In patient education, recognition of the value of patient education can be seen as the driving force and thus is essential for competence development to occur. Continuing education in patient education should aim at changing any negative attitudes that health professionals may have towards teaching (Dandavino et al., 2007), which could help them to recognize the importance of the educators' role, increase their satisfaction with teaching, and decrease any anxiety they may have about the educational responsibility. Thus, competence development that focuses on the value of patient education will meet the wishes and address the concerns of health professionals (Paper II) and is necessary to develop into an expert educator.

The most important factor influencing professional development is learning from one's own experience (Benner, 2001; Tabari-Khomeiran et al., 2007). For health professionals, this means learning through their work, which depends heavily on the support of managers (Gould et al., 2007; Munro, 2008). To enable effective work-based learning, managers need to foster a learning culture in the workplace (Williams, 2010). Consistent with prior research (Tabari-Khomeiran et al., 2007), the health professionals (Paper II) recognized the effect of a supportive learning environment, where support and inspiration from peers would motivate them to learn and remain up to date on professional issues. Managers must therefore support and motivate health professionals to develop as educators and make sure that they have the time, resources, and support they need to grow into

and serve as competent educators. Prior research has reported that study days, participating in conferences, and reading nursing journals to be nurses' main methods for keeping up with the latest medical developments (Timmins, 2008). The health professionals' suggestions (Paper II) about guidance in finding relevant literature and having a central collection of literature and patient educational material available at the workplace (Paper II) are inexpensive educational interventions that could enhance evidence based practice in patient education. Standardized educational sessions, standard instructions, and clinical guidelines could also be valuable sources of information, as the health professionals suggested (Paper III). Consistent with this view, Rankin et al. (2005) suggest that novice health professionals are best supported if they are given realistic teaching plans, critical paths, appropriate teaching tools, and multidisciplinary support.

There was a unity among the health professionals (Paper II) that mentoring, supervision, and support from more experienced health professional are needed early in competence development. Dandavino et al. (2007) recommend that, when training medical students to teach, tasks should increase gradually in complexity and students should practice teaching skills with a balance of support and independence; they should be given the opportunity to practice their skills in real settings. Many studies have shown that peer teaching improves educators' own understanding, increases confidence in giving feedback, communication skills, organization skills, and confidence in speaking in groups (Marton et al., 2015). Opportunities to mentor and support other educators can therefore simultaneously serve as learning occasions for expert educators and as support and guidance for novice educators. For mentoring to be effective, supervisors must improve their own patient education competence before they can supervise others, as research indicates that many do not possess the competence required to fulfill their educational roles credibly in the clinic (Wouda & Van de Wiel, 2015).

Reflecting on experiences (Benner, 2001; Morrison & Symes, 2011) and training in reflective thinking and relevant feedback are important elements in developing competence (Tabari-Khomeiran et al., 2007). According to Knowles's theory (1970), one of the learning needs of adults is grasping how to take responsibility for their own learning through self-directed inquiry, how to learn collaboratively with the help of colleagues, and how to learn by analyzing one's own experience. Feedback on learner behavior is an effective technique that helps the learner to look at themselves more objectively and free their minds of preconceptions (Knowles, 1970). This view accords with our findings, as the health professionals (Paper III) saw active participation and critical reflection on patient educational experiences and performances as important factors that could enhance expert development, as it provides insight into what was done well and what could be improved. In agreement with our results, a study about nurses' perceptions of conditions for patient education showed that almost one third of the nurses rarely discussed with their colleagues how to help patients acquire knowledge (Bergh et al.,

2014). Another study revealed that patient education is not reflected on or discussed with colleagues (Hult et al., 2009). Reflecting on experiences does not merely mean reflecting on one's own actions; as the health professionals indicated, it is necessary that mentors or experienced educators offer novices constructive, critical feedback on their performance. This implies, as suggested by Dandavino et al. (2007), that educators also need training in giving feedback. To enhance competence development, managers and expert educators must increase awareness about the importance of feedback and reflection on experience and encourage, stimulate, and lead reflective discussions about patient education as a regular part of clinical work. As feedback and reflection on experience can be especially valuable, any program designed to improve teaching skills should include a feedback and reflection component.

6 CONCLUSION

According to patients with CHD and health professionals with experience in providing patient education, competence in patient education requires a combination of evidence-based knowledge and clinical experience in cardiology. Knowledge about communication and educational science, how to support patients' progress towards a healthy lifestyle, and how to establish trusting patient-provider relationships are especially important. Good educators must be trustworthy with advanced communication skills that make them capable of motivating and connecting to the individual patient. A good educator must also display sensitivity towards the patient's learning needs and an ability to individualize patient education. A supportive learning environment, inner motivation, and an awareness of the value of patient education were considered by health professionals to be the main factors required to become an expert educator.

7 IMPLICATIONS FOR PRACTICE

The findings in this thesis and prior research imply that there is a need for organized continuing education in patient education for both novice and expert educators from different professions. To answer this need, there must be a healthy supply of competent teachers and mentors. This means that those currently conducting patient education need to develop their own competencies further before they supervise others. Therefore, educational intervention aimed at experienced educators should be a priority, as they are needed as teachers for the less experienced.

To increase the quality of patient education, motivating health professionals and raising awareness about the importance of patient education are an important task in healthcare. For competence development to be feasible, managers in healthcare need to ensure that health professionals have the time, resources, and ability to develop as educators. Health professionals themselves need to help foster a learning culture in their workplaces and strive to support, inspire, and motivate one another to learn and remain up to date on the latest research. To enhance competence development, managers and expert educators should encourage, stimulate, and lead reflective discussions about patient education as a regular part of clinical work.

Continuing education in patient education should aim at developing competence in patient-centered communication, building trusting patient-provider relationships, and establishing and maintaining professional credibility. The content of the education must have a clear focus on a holistic view of the patient and how to support their emotional well-being. The theory of adult learning, how to assess patients' learning needs, how to tailor patient education to the individual, and how to provide effective lifestyle counselling are other important factors in which health professionals need focused training. At the expert level, the training should have a focus on supporting and mentoring novice educators.

We suggest that continuing educational programs in patient education should combine theoretical learning, experiential training, and working in a supportive learning environment. Any program designed to improve teaching skills should include a feedback and reflection component and peer support, supervision, and mentoring from experienced educators.

8 IMPLICATIONS FOR RESEARCH

Several next steps can be taken to build on the research in this thesis. As a starting point, further research is needed to understand more fully how the identified competencies relate to the different roles of educators, educational settings, and the disease continuum. Such research could focus on identifying which competencies are most beneficial in different settings and which competencies are needed at different stages along a patient's disease continuum. This could be achieved by using questionnaire-based surveys in which the importance of the difference competencies is assessed and in focus group interviews in which the identified competencies are discussed, refined, and validated by patients, health professionals, and medical educators.

Much of the research in this field and indeed in this thesis has been carried out using interviews. There is a lack of research based on observation of what is actually done on the ward or in the clinic. One solution might be to undertake an action research project in which health professionals' practices in patient education were observed and the results compared to their self-conceptions. The results could provide fruitful indicators of the degree to which health professionals are meeting their own ideas of quality patient educational practice and more clearly identify the obstacles to competence development and what is feasible in actual clinical practice.

Different programs for increasing educator competencies, such as a continuing education program for health professionals, should be implemented and tested in the clinical setting. The effect of the program could be evaluated by comparing outcomes among patients who have received education from health professionals who have participated in the education program with outcomes of a usual care or control group. The outcomes measured could serve to help evaluate educators' overall competence and patients' perceptions of quality of life and the effect of CHD risk factors.

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10 APPENDIX

10.1 APPENDIX I INTERVIEW GUIDE: PAPERS I AND II

INDIVIDUAL INTERVIEWS WITH HEALTH PROFESSIONALS

The aim of the study is to investigate health professionals' views on the knowledge and skills necessary for conducting quality patient education for adults recently diagnosed with CHD.

The focus of the interview will be on your views on what knowledge and skills are needed to conduct quality patient education for adults recently diagnosed with CHD (those who have survived a first time MI or undergone a first time elective Percutaneous Coronary Intervention (PCI) in the previous year).

1. **If you have an employer or colleague inexperienced in patient education responsible for conducting the type of patient education you are involved in, what training would he or she need?**
   - What knowledge and skills are needed to conduct high-quality patient education?
   - What should the training include?
   - How would you plan and organize the training?
2. **What guidelines, recommendation, or models do you follow in your patient education?**
   - Can you describe the usefulness of these guidelines for patient education?
3. **How do you describe optimal patient education for patients with CHD?**
   - What are the main challenges health professionals encounter in education for individuals with CHD?"
   - What are the knowledge and skills that health professional need to provide such education?
4. **What do you consider the optimal training in patient education for inexperienced educators who provide education for adults recently diagnosed with CHD?**
   - How do you describe health professionals' learning needs in patient education for CHD patients? What are your own learning needs?
   - What are the most effective educational approaches to teaching patients' with CHD?
5. **How do you describe an expert in patient education?**

10.2 APPENDIX II INTERVIEW GUIDE: PAPER III

INDIVIDUAL INTERVIEWS WITH PATIENTS WITH CHD

The purpose of this study is to improve patient education for individuals who have recently been diagnosed with CHD. Therefore, I will be conducting interviews with individuals who have received patient education about their experiences and preferences regarding patient education and their views on the competencies needed for patient education.

1. **Could you please describe your experience with patient education after your CHD incident?**
   - What did you find good or positive in your patient education? (Bad or negative).
   - How do you describe ideal patient education?
   - What methods do you believe are the most useful for patient education?
2. **What do you want information about in patient education?**
   - Lifestyle changes, risk factors, medications, etc……
   - What kind of support is needed in those areas?
   - What is the biggest challenge that individuals with CHD face in their recovery and in coping with the disease?
   - What questions do you want health professionals to be able to answer?
3. **Can you describe the characteristics of someone who is good at educating patients?**
4. **Can you describe someone you received patient education from and you perceived as either a good or bad educator?**
   - How would you describe a competent patient educator?
   - Which competencies do you perceive as most important?
   - Which qualities do you perceive as most important?

10.3 APPENDIX III HEALTH PROFESSIONALS' SUGGESTIONS OF COMPETENCIES NEEDED IN PATIENT EDUCATION

Health professionals' suggestions of theoretical knowledge needed in patient education

Coronary heart disease	**Patient education**	**Resources**
Prevalence and frequency.	Evidence-based patient education.	Educational material.
Causes, symptoms and diagnoses.	Importance of patient education.	Find appropriate and up-to-date educational material.
Disease process.	Patient right to patient education.	Designing and writing educational material.
Treatment and medication.	Learning theories.	Program development.
Complications.	Principles of, barriers to, and facilitators of adult learning.	Where to refer patients and services available.
Risk factors and lifestyle changes.	Important topics in patient education.	Selecting and using visual aids.
Advanced cardiac life support.	Ways to improve the outcome of patient education.	Using technology.
Professional guidelines.	Knowledge of other professionals' role in patient education.	
General knowledge.		
Patient experience		
Emotional reaction and disease experience.		
Concerns, reactions, and coping with illness.		
What patients generally want to know and discuss.		
Frequently asked questions.		

Health professionals' suggestions regarding clinical knowledge needed in patient education

Clinical knowledge
Competence and confidence in communication. Insight into patients' experience.
Preparedness to answer questions and lead discussions.
Sensitivity to patients' learning needs.
Competence and confidence in individualizing patient education.
Competence and confidence in acute situations.

Health professionals' suggestions of communication skills needed in patient education

Interpersonal relationship	**Capturing learning needs**	**Information giving and dialog**
Caring and empathetic.	***Assessment***	***Adherence and health promotion***
Connect and relate to the patients.	Recognize and evaluate patients' learning needs.	Communication styles that facilitate learning and inspire healthy lifestyles.
Engender trust and security.	Read verbal and non-verbal messages.	Use of behavioral techniques.
Welcoming, pleasant, warm and gentle.	Recognize barriers to and facilitators of learning.	Being supportive.
Cheerful.	Prioritize.	Patient involvement and patient-centered care.
Calm appearance.	Meet patients where they are at.	Facilitate dialogue.
Creating a relaxed climate.	***Evaluate***	Interview technique.
Humble.	Evaluate and document patients' understanding as an ongoing process.	Discussions.
Make the patients feel free to ask questions.		Answer questions.
Communication with patients experiencing various emotional reactions.		Addressing knowledge and misconceptions.
Holistic view.		***Presentation skills***
Respect for the patient.		Deliver information.
Listening skills.		Use of humor.
Interested in patient.		Explain and educate at an appropriate language level.
Enjoy working with people.		***Planning and Implementing***
Cooperation and collegial outlook.		Select and apply the most appropriate intervention method.
Support patients throughout illness and recovery.		Use of communication aids.
		Individual patient education
		Adapting patient education to the individual or group needs and the context of the situation.
		Individualize standard guidelines and educational material.

10.4 APPENDIX IV PAPERS I-III

PAPER I

European Journal of Cardiovascular Nursing

EUROPEAN SOCIETY OF CARDIOLOGY®

Original Article

European Journal of Cardiovascular Nursing
1–9

DOI: 10.1177/1474515114551123
cnu.sagepub.com

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Knowledge and skills needed for patient education for individuals with coronary heart disease: The perspective of health professionals

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Abstract

Background: There is a lack of studies on the knowledge and skills needed for patient education of individuals with coronary heart disease. Better understanding of what competencies health professionals see as necessary for patient education in secondary prevention can contribute to improved education of educators, and thus, improved patient education.

Aim: The purpose of this study was to investigate health professionals' views on the knowledge and skills necessary in conducting high-quality patient education for adults recently diagnosed with coronary heart disease.

Methods: A qualitative study was conducted using individual interviews with health professionals with experience from different types of patient education in cardiac care. The interviews were analysed using systematic text condensation.

Results: The informants were 19 Icelandic and Norwegian registered nurses, physiotherapists and cardiologists. Sound updated theoretical and clinical knowledge, along with advanced communication skills, was considered essential for patient education. This includes being able to establish interpersonal relationships with patients, capturing their learning needs, facilitating an effective dialogue and providing individualised patient centred education and lifestyle counselling.

Conclusions: Evidence-based patient education requires knowledgeable health professionals with advanced communication skills and pedagogical competences that enable them to motivate patients and provide effective patient centred lifestyle counselling.

Keywords

Patient education as topic, clinical competence, health personnel, health educators, coronary disease, secondary prevention

Date received: 1 April 2014; revised: 20 August 2014; accepted: 22 August 2014

Introduction

Coronary heart disease (CHD) is the leading cause of death and disability in Europe.[1] Unhealthy lifestyle is causative in this disease, and the benefits of decreasing the risk factors are great.[2,3] Although evidence clearly shows the beneficial effect of lifestyle changes, maintaining a healthy lifestyle is a challenge for even the most dedicated patient.[4,5] Patient education is an important element in secondary prevention of CHD, as education has been reported to increase knowledge and the likelihood of successful lifestyle changes[6] and may increase health-related quality of life.[7] Patient education relates to a combination of learning experiences that influence behaviour change and produce changes in the knowledge, attitudes and skills needed to maintain and improve health.[8]

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Despite recognition of the importance of patient education, several studies indicate that it is frequently neglected,[9–11] is sometimes ineffective[10,12,13] and does not always correspond to patient needs.[14–16] In addition, patient knowledge of CHD[10,12,14] and adherence to recommended treatment are often inadequate.[17,18]

Health professionals consider knowledge in educational science important for patient education.[19] In spite of this and the increasing emphasis on evidence-based practice,[20,21] inactivity in reading literature related to patient education and following knowledge development in those areas has been reported.[19] Lack of competences[22–25] and inadequate training of health professionals have been identified as barriers in patient education,[9,25,26] and the need for continuing education for patient educators has been acknowledged.[9,26]

There is a lack of research addressing what knowledge and skills educators of patients with CHD should have. A recent study revealed that patients believe that health professionals in cardiac care must be knowledgeable, skilful and able to meet the educational needs of patients and families.[27] However, it is not known what attributes are required according to health professionals themselves. Exploring the views of those who are motivated and active in patient education enables reflection of the competencies that experienced educators use in their daily clinical practice and the challenges they faced as novice educators. Opinions of health professionals with experience in cardiac care can give indications about the knowledge and skills needed to reach competency in patient education. The aim of this study was to investigate what health professionals perceive as necessary knowledge and skills to perform high-quality patient education for adults recently diagnosed with CHD.

Methods

In this qualitative study, semi-structured in-depth individual interviews were used. The design was chosen since it is well suited for exploring the range, depth and complexity of people's perspectives when little is known about the subject area.[28]

Sample and recruitment

The aim was to use purposeful sampling to recruit health professionals with experience in providing patient education (e.g. formal education, individual and group education, information giving, support and lifestyle counselling) to individuals with CHD. There were no exclusion criteria. The first author introduced the study in cardiac care units and enrolled volunteers. The volunteers were then asked to recommend others (snowball sampling). To ensure variation in the sample, registered nurses, physiotherapists and cardiologists in Norway and Iceland were invited to participate. Informants were selected according to variation in age, gender, profession, work experience and experience with patient education.

Data collection

Data collection took place between April–August 2013. The first author conducted all the interviews at a place chosen by the informants. The interviews were audiotaped and transcribed verbatim. The average interview duration was 40 min (range 23–64 min).

In this study, patient education was defined for the informants as a comprehensive term, to cover all formal patient education, information giving, support and lifestyle counselling given to patients by health professionals in the first year following the diagnosis of CHD. A semi-structured interview guide was used. Initially, the informants were asked to explain what they considered optimal training in patient education for inexperienced educators who provide education for adults recently diagnosed with CHD (i.e. who had survived first-time myocardial infarction or undergone first-time elective percutaneous coronary intervention). Other main questions were as follows: What knowledge and skills are needed to conduct high-quality patient education? What are the main challenges health professionals encounter in education for individuals with CHD?

Ethical considerations

The study was conducted in accordance with the Declaration of Helsinki. The informants received information, both orally and in writing. This included information about the possibility of withdrawing from the study at any time. Written consent was obtained before the interviews were conducted, and confidentiality was assured.

Analysis

The data were analysed using systematic text condensation described by Malterud.[29] Examples are shown in Table 1.

An iterative four-step process was conducted, starting after the first interview, by reading the transcribed interviews to obtain a general impression and identify preliminary themes. In the second step, the transcriptions were systematically reviewed line by line and the units of meaning identified, classified and sorted into themes. The third step was to sort the units of meaning into subgroups and reduce the content to a condensate of artificial quotations, maintaining as far as possible the original terminology used by the participants. In the last step, the contents of each code group were summarised into generalised descriptions and concepts.

The analysis was performed by the first author and discussed and negotiated with the co-authors and a team of experienced researchers. Coding of the interviews continued after each interview until no new themes emerged. At that point, the material was considered saturated. The

Table 1. The analytical process with examples.

1. Initial themes	2. Identifying and sorting meaning units	3. Condensation	4. Synthesising	Final themes
Scientific knowledge	'Up-to-date knowledge about how to change lifestyle, what life style has proven to be good for the heart and what methods are approved to deal with this [lifestyle changes] and what methods have proven to be effective' (nurse/experienced). 'There is constantly new research that you need to keep up with' (nurse/experienced).	You constantly need to keep up with new research, and know what methods are effective and supported by research.	Base patient education on evidence.	**Theoretical knowledge**
Clinical experience	'With experience you gain insight into the patient's world, what he is dealing with' (nurse/experienced). 'One has seen patients in various conditions, communicated with them and knows what they are dealing with' (nurse/average experience).	By communicating with patients, you gain insight into their world and what they are dealing with.	Educator with clinical experience has better insight into patients experience and is better capable of psychological support.	**Clinical knowledge**
Patient involvement	'… it is the patient who prioritises. If we want the patient to stop smoking and he [the patient] wants to start with losing weight, that is what we will help him with. We will get an opportunity to bring up the other issue [the smoking cessation] later' (nurse/experienced). 'It is a challenge to find out where the patient is, what he is preoccupied with and how he experiences the situation and then we need to start from there (nurse/experienced).	If the patient wants to begin by losing weight, that is what we help him with. You need to find out what the patient is preoccupied with, and how he experiences the situation, and start from there.	Patient centred education. Respect for the patient's wishes and decisions. Adapt the education in response to the individual's needs and wishes.	**Advanced communication skills**

Table 2. Demographic characteristics of the informants.

	Number
Gender	
Female	17
Male	2
Nationality	
Norwegian	11
Icelandic	8
Profession	
Registered nurse	14
Physiotherapist	3
Cardiologist	2
Highest academic degree	
BSc	13
MSc	4
PhD	2
Source of competence in patient education	
Self-study (e.g. books/literature)	17
Supervision from experienced colleague	14
Undergraduate education	12
Postgraduate education	12
Course in patient education	7
Experience in patient education	
>3 years	14
1–3 years	3
<1 year	2
Self-evaluated experience in patient education	
Little experience	0
Average experience	3
Experienced	13
Extensive experience	3

analysis was validated with a thorough review of the original transcripts of each interview to make sure they were reflected in the results. Citations used to support the results are marked with the informant's profession and self-evaluated experience with patient education.

Results

The sample consisted of 19 Icelandic and Norwegian health professionals (Table 2). Their mean age was 42 years (range 25–62 years), and the mean length of clinical experience in cardiac care was 12 years (range 0–32 years). All of the informants, except one, had some formal education in patient education. All had experience with in-hospital patient education and 18 had experience in patient education after discharge from hospital. Six had experience with counselling in nurse-led clinics. Five nurses were specialised in cardiology and one physiotherapist in cardiopulmonary rehabilitation.

The health professionals' views are presented according to three themes. Most began the interview by explaining the necessity of having good professional knowledge from theoretical literature and clinical experience. This is described in the themes *theoretical knowledge* and *clinical knowledge*. In addition, there was a clear focus on *advanced communication skills.* Figure 1 shows a summary of the results and the interaction of knowledge and skills needed in high-quality patient education.

Theoretical knowledge

Sound updated medical knowledge about cardiac disease was seen as a basic competency in patient education by all informants. Some considered it the most important knowledge. An experienced cardiologist said:

> 'The point is that after all, professional knowledge becomes more important than the capability to teach'.

Others expressed the view that despite the weight of medical knowledge, its relevance will be attenuated in the absence of effective communication skills and the capability to connect to people.

Many informants emphasised that in order to be able to understand and help patients to cope with disease, educators must gain knowledge about patients' experience, concerns and emotional reactions. Some informants said that educators must have knowledge of what patients are likely to ask about and what is relevant at each stage in the disease continuum. One cardiologist stated that all patients have key questions that are not necessarily asked but must be addressed by health professionals.

It was stressed that health professionals must know how to acquire new knowledge and be up to date in evidence-based medicine. In addition, some nurses argued that in order to correct misinformation and facilitate discussions, knowledge about contemporary topics under discussion in society is needed. This could also be helpful in guiding patients in choosing treatments and increasing the credibility of health professionals. An experienced nurse stated:

> "There are more young individuals who are well-read on the Internet. You need to follow up on that information, and that is a challenge and time-consuming… But they can be well read in something that is complete nonsense… Somehow, you need to correct those ideas."

Some nurses and physiotherapists believed that an educator should possess interdisciplinary medical knowledge and knowledge about educational topics presented by other health professional disciplines. It was suggested that this knowledge could increase the educators' capability to respond to questions, provide explanations and ensure congruence. The need for knowledge in educational science and adult learning was raised by many. However, some informants implied that educating and counselling relied on experience or innate skills.

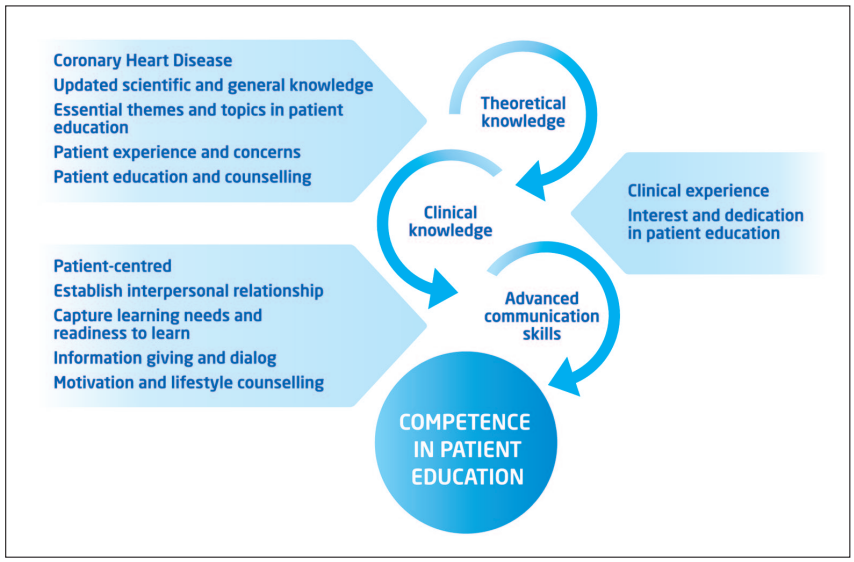

Figure 1. Interaction of knowledge and skills in patient education.

Clinical knowledge

It was frequently mentioned that clinical experience results in the type of clinical knowledge necessary for patient education. However, some argued that clinical experience does not necessarily result in competency in patient education, if there was no interest in or dedication to the subject.

A more experienced educator was considered better able to read signals, for example, facial expressions and non-verbal communication, and capture emotional and learning needs. The informants stated that confidence to leave predefined topics and let patients concerns and interests lead the education depended on clinical experience. A nurse with average experience said:

> 'You can probably conduct acceptable patient education after a couple of years [in clinical] work. You could have good theoretical knowledge; however, you might not have that much experience with patients yet. There are so many variations, individual differences, which I think you will learn to recognise over time.'

Advanced communication skills

Advanced communication skills included being able to establish interpersonal relationships with patients, capture their learning needs and readiness to learn, facilitate an effective dialogue and provide individualised guidance and lifestyle counselling.

The ability to establish interpersonal relationships and build trust was identified as the foundation for effective communication and patient education. This included being caring and able to empathise and having genuine interest in the patient. By relating and connecting to the patient, the educator was said to be more competent in supporting him or her through illness and recovery. An experienced nurse stated:

> 'That you are able to help them gain control over their body and their health. Create trust and maybe create some hope that life can be the same as before'.

One cardiologist talked about the need for being modest in behaviour while meeting with patients and creating a sense of equality in the relationship. Another important aspect of interpersonal relationships was said to be a non-judgmental attitude and respect for patient wishes, needs and decisions. An experienced nurse stated: 'To meet him where he is, but at the same time ensure that he does not endanger his health'. Another experienced nurse recommended that:

> 'It is more effective to have a conversation with the patient instead of lecturing, or telling him what to do… Involve the patient in the education'.

The ability to create a climate that promotes learning and makes patients feel comfortable asking questions and discussing sensitive topics was emphasised. This implies that the educator also must be comfortable discussing sensitive issues without embarrassing the patient.

The ability to capture patients' learning needs and readiness to learn was considered an essential skill for an educator. One concrete example was to understand the patients' learning needs and the need to evaluate the patients' prior

knowledge, interest and motivation. This was required in order to be able to individualise and prioritise the information to be given. An experienced cardiologist stated:

> 'The education must focus on the patient's reality, which becomes important for the patient in making lifestyle changes and to follow medical treatment'.

Some of the more experienced informants considered it very important to be skilled in exploring and recognising barriers and facilitators of learning. An experienced nurse explained it this way:

> 'To be able to assess what the obstacles for change are for this individual. … To be able and have patience and motivation to go deeper into those issues and find something that you can work with'.

The informants favoured patient-centred education and two-way communication between educators and patients. This included skills in starting and leading discussions, engaging passive patients and controlling storytelling and dominant patients.

The informants emphasised that educators should be able to adjust discussions and information to patients' level of understanding. One example offered was being able to disseminate information and give understandable instructions using lay terms and speaking clearly and concisely.

To communicate relevant knowledge at a relevant time in a way that motivates learning and a healthier lifestyle was often considered the biggest challenge to patient education. Some informants also mentioned difficulties in supporting patients in maintaining lifestyle changes. The focus on lifestyle counselling was especially apparent among the more experienced informants, in particular those with experience from nurse-led clinics.

Discussion

Our main finding was that health professionals who were experienced in patient education considered sound theoretical and clinical knowledge essential for patient education, along with advanced communication skills. This included being able to establish interpersonal relationships with patients, capture their learning needs, facilitate an effective dialogue and provide individualised guidance and lifestyle counselling.

Experience or evidence-based patient education?

Despite the emphasis on evidence-based medicine, there seems to be a strong belief in learning by doing and consulting colleagues,[30] which some of our informants highly appreciated as a method of seeking knowledge. Research indicates that patient education is performed in an unarticulated and unreflective way.[19] Even though health professionals consider knowledge in educational science important in patient education,[19] it has been stated that its value is underestimated[22] and some believe giving information and communicating are natural abilities.[31] Although some of our informants stressed the importance of formal training in communication and educational science, others questioned this idea and implied this to be innate skills that relied on experience. This is an uneasy position that needs to be addressed. To ensure high-quality patient education, the importance of pedagogical knowledge and evidence-based patient education must be recognised and used by health professionals. Health professionals might refrain from evidence-based praxis as a result of socialisation and the demand for efficiency.[32] An important question is whether health professionals consider it equally important to apply the principles of evidence-based practice in patient education as in clinical health care. Poor outcomes in patient education[10,13] further raise the need to support health professionals toward pedagogical competence and evidence-based patient education.

The challenge of communication and motivation

It has been argued that engaging in dialogue with patients and empowering them with education improves adherence to the recommended treatment.[33] Consistent with the philosophy of empowerment[34] and patients' wishes,[27] the informants believed the role of the educator is to be to inspire, inform, support and facilitate patients' efforts to identify and attain their own goals. The low frequency of adherence to recommended treatment[17,18] and mounting evidence of the beneficial effects of lifestyle changes[2,3] support the view that educators ought to be well-versed in communication and lifestyle counselling. Furthermore, making lifestyle changes seems to be one of the more difficult tasks patients with CHD face.[14] Our informants saw lifestyle counselling as the most challenging task in educating individuals with CHD. This is in line with research in which health professionals have reported that the lack of counselling skills represent a barrier to lifestyle counselling,[11,35] indicating that a central competency that needs further training is how to work with lifestyle changes.

Increased emotional well-being has been reported among patients who receive patient-centred education compared to those who receive standardised information.[36] Parallels can be drawn between patient-centred education[36] and what our informants felt about the necessity of developing an interpersonal relationship that focused on emotional needs and identifying and respecting values and preferences. However, one can question whether this view reflects the current situation in clinical practice, as our results contradict research that demonstrate that patients find that education places too much weight on the disease[15] and too little on psychological well-being.[16]

In accordance with prior research,[37] our informants considered it important that health professionals were capable of creating a climate that promotes learning and makes patients feel comfortable asking questions and expressing themselves. Shared authority and group ownership have been described as central for educators in diabetes care.[37] This is in line with the view of our informants that patients should be seen as active partners and their concerns and interest should steer the education. Suggestions from the informants about the beneficial effect of creating a sense of equality in the relationship with the patient are supported by results of a qualitative study in which cardiac patients reported that they felt more relaxed and able to confide and discuss issues freely when they felt on the same level as the health professional.[38] Patient-centred communication is an important core competency in patient education that health professionals require education and training in if they wish to develop as effective educators.

Strengths and limitations

The main strength of this study was that it included the three health professions most involved in patient education for individuals with CHD. The majority of the informants were registered nurses, which reflects clinical situations well since the most frequent educators of individuals with CHD are nurses and health professionals in multidisciplinary teams.[6] To further increase the variation in the sample, informants in two countries and in various patient care settings were included. Another important strength lies in the great experience the majority of the informants had in patient education in cardiac care. Some also had experience in training health professionals in patient education. Since we intentionally recruited health professionals with experience from patient education, the sample is likely to be representative only of those experienced and engaged in the field. This means that our findings do not reflect the perspective of all health professionals, particularly those with no experience in patient education, although with a bias toward male health professionals, since only two men agreed to participate in the study.

The major limitation of the study was that the results were based on the views and professional opinions of health professionals, rather than actually testing which competencies are most relevant in clinical practice. This approach was conscientiously chosen due to the absence of comprehensive descriptions of knowledge and skills needed for patient education of individuals with CHD.

The first author had experience in patient education related to individuals with CHD. To avoid preconceptions affecting the reflexivity of the results, the interview guide and the interpretation of the interviews were critically discussed with the co-authors and in a team of experienced researchers. In addition, the co-authors reviewed the original transcripts of the interviews in their respective languages to make sure the informants views were reflected in the results.

Conclusion

Knowledge and advanced communication skills are interrelated and must be present in high-quality patient education. Effective training is needed for health professionals to acquire the competencies that enable patients better manage their CHD. Evidence-based patient education requires knowledgeable health professionals with advanced communication skills and pedagogical competence that makes them able to motivate patients and provide effective lifestyle counselling.

Implications for practice and research

The results describe important competencies to be mastered in relation to interdisciplinary patient education to individuals with CHD and can be a useful basis for comprehensive descriptions of knowledge and skills needed for patient education. Better understanding of what competencies are necessary for patient education can contribute to an improved continuing education curriculum for health professionals in patient education, and thus, improved patient education. In addition, the findings can encourage educators of individuals with CHD to critically reflect on their competencies as educators and the knowledge, skills and resources they will need in order to develop as expert educators.

Further research is needed to better understand how the identified core competences relate to each other and the various roles of educators, educational settings and the disease continuum. Such research could focus on identifying which competences are most beneficial in different settings. This could help uncover how these competencies should be taught in continuing education for health professionals' since this is likely to be important step to increase the quality of educators.

Implications for practice

- The results can be a useful basis for comprehensive descriptions of knowledge and skills needed for patient education to individuals with CHD.
- Better understanding of what competencies are necessary for patient education can contribute to improved continuing education curriculum for health professionals in patient education, and thus, improved patient education.
- The findings can encourage educators of individuals with CHD, to critically reflect on their competencies as educators and the knowledge, skills and resources they will need in order to develop as an expert educator.

Acknowledgements

The authors wish to thank the health professionals who participated in the study. They also thank the Research Group for Patient Education and Patient Participation, at the Department of Public Health and General Practice, Norwegian University of Science and Technology in Trondheim, Norway for critical discussion and good advice during the process of planning this study and analysing the results.

Conflict of interest

The authors have no conflict of interest.

Funding

This project is funded by Central Norway Regional Health Authority.

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PAPER II

Svavarsdóttir et al. BMC Medical Education (2015) 15:87
DOI 10.1186/s12909-015-0370-x

BMC Medical Education

RESEARCH ARTICLE Open Access

How to become an expert educator: a qualitative study on the view of health professionals with experience in patient education

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Abstract

Background: Health professionals with the level of competency necessary to provide high-quality patient education are central to meeting patients' needs. However, research on how competencies in patient education should be developed and health professionals trained in them, is lacking. The aim of this study was to investigate the characteristics of an expert educator according to health professionals experienced in patient education for patients with coronary heart disease, and their views on how to become an expert educator.

Methods: This descriptive qualitative study was conducted through individual interviews with health professionals experienced in patient education in cardiac care. Participants were recruited from cardiac care units and by using a snowball sampling technique. The interviews were audiotaped and transcribed verbatim. The data were analyzed with thematic approaches, using systematic text condensation.

Results: Nineteen Icelandic and Norwegian registered nurses, physiotherapists, and cardiologists, who had worked in cardiac care for 12 years on average, participated in the study. Being sensitive to the patient's interests and learning needs, and possessing the ability to tailor the education to each patient's needs and context of the situation was described as the hallmarks of an expert educator. To become an expert educator, motivation and active participation of the novice educator and a supportive learning environment were considered prerequisites. Supportive educational resources, observation and experiential training, and guidance from experienced educators were given as examples of resources that enhance competence development. Experienced educators expressed the need for peer support, inter-professional cooperation, and mentoring to further develop their competency.

Conclusions: Expert patient educators were described as those demonstrating sensitivity toward the patient's learning needs and an ability to individualize the patient's education. A supportive learning environment, inner motivation, and an awareness of the value of patient education were considered the main factors required to become an expert educator. The experienced educators expressed a need for continuing education and peer support.

Keywords: Clinical competence, Professional competence, Coronary disease, Continuing education, Health educators, Health personnel, Patient education as topic, Secondary prevention, Qualitative research

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Background

Providing patient education can be challenging; it has become more complex in recent years due to aging populations [1, 2], cultural diversity [2], and decreased length of hospital stays [1]. Developments in society and health science [2] and, more recently, the use of social media in patient education [3] have placed a demand on educators to keep up to date with evidence-based medicine and the use of information technology. Patients request more information and participation in decisions concerning their health [4], and the move from the medical model to patient-centered care [5] requires increased competence in communication skills. Finally, lifestyle changes emphasized in secondary prevention indicate that health professionals need specific training in communication and lifestyle counseling [6].

As the leading cause of death and disability in Europe [7], coronary heart disease (CHD) is associated with an unhealthy lifestyle. The beneficial effect of lifestyle changes and adherence to recommended treatment on CHD mortality and morbidity has consistently been confirmed [6, 8, 9].

Patient education has been defined as, "Any set of planned, educational activities designed to improve patients' health behaviors, health status, or both" [10]. As a facilitator of lifestyle change and risk factor reduction [11, 12], patient education is a core component in secondary prevention of CHD. In addition, patient education results in higher perceived control over the disease [13] and possible beneficial effects on health-related quality of life [14].

Health professionals skilled in educational science and lifestyle counseling are essential for secondary prevention [15]. Continuing education for health professionals can improve professional practices and healthcare outcomes for the patient [16]. However, there are concerns about the limited opportunities for continuing education focusing on patient education [17, 18]. The lack of emphasis on educational and behavioral science in cardiovascular educational programs is apparent in the literature [19, 20], and the need to develop continuing education for health professionals has been recognized [15, 21, 22].

Characteristics of expert nurses have previously been described in the literature [23]. However, to our knowledge, factors that enhance the development of an expert educator have yet to be studied. Our previously published study discussed the knowledge and skills needed for patient education [24]. In this study, we highlight resources and activities required for enhancing competence development in patient education.

The aim of this study was to investigate the characteristics of an expert educator according to health professionals experienced in patient education for patients with CHD, and their views on how to become an expert educator.

Methods

This descriptive qualitative study used semi-structured face-to-face individual interviews to collect data. This design was chosen as an appropriate method of data collection related to personal perspectives and beliefs [25].

Participants

The aim was to recruit health professionals in Norway and Iceland who possess experience in providing patient education to individuals with CHD. To recruit the participants, the first author introduced the study to health professionals working in cardiac care units. The first participants were asked to recommend other possible participants (snowball sampling), who were then chosen purposefully to ensure variation in age, gender, profession, work experience, and experience in patient education.

Data collection

Data were collected between April and August 2013. The interviews were conducted by the first author in the participants' native language (Icelandic or Norwegian) at a location chosen by the participants. The interviews were audiotaped and transcribed verbatim. The average interview duration was 40 minutes (range 23–64 minutes).

The main question asked in the interviews was, "What do you consider the optimal training in patient education for inexperienced educators who provide education for adults recently diagnosed with CHD?" The participants were additionally asked to describe their own learning needs and describe their ideas of an expert educator for individuals with CHD. The participants were informed that patient education was understood to cover a very broad range of individual- and group-based formal patient education, information giving, support, and lifestyle counseling.

Ethical considerations

The study was conducted in accordance with the Declaration of Helsinki. The study was not subject to approval of a Research Ethics Committee as no sensitive or personal health information was collected [26, 27]. Participants were provided with written and oral information about the study and informed that they could withdraw at any time. Written informed consent was obtained from the participants before the interviews were conducted. Confidentiality was assured by keeping the audio files locked down and de-identifying the transcripts; the data were only accessible to the authors.

Analysis

The data were analyzed after each interview, using a thematic approach based on Malterud's systematic text condensation [28]. The analyses started by reading the

transcribed interviews to obtain a general impression and identify the preliminary themes. Next, the transcriptions were systematically reviewed line by line to identify meaning units, which were then classified and sorted into themes. The third step involved sorting the meaning units within each theme into subgroups and reducing the content to a distillation of rephrased quotations, maintaining as much of the original terminology used by the participants as possible. Finally, the contents of each code group were summarized in generalized descriptions and concepts. Interviews were conducted until no new themes emerged from the analyses.

The analyses were performed by the first author who has experience in providing patient education to individuals with CHD. To avoid preconceptions affecting the reflexivity of the results, the interview guide and the interpretation of the interviews were critically discussed between the co-authors and with a team of experienced researchers. The analysis was validated by a thorough review of the original transcript of each interview to ensure all points of significance were reflected in the results. The Icelandic and Norwegian citations were translated into English by the first author, who is competent in these languages, and validated by co-authors. The citations that best illustrated the themes were chosen to support the results and reflect the multiprofessional diverseness. Citations are marked with the participant's profession and self-evaluated experience in patient education.

Results

Nineteen Icelandic and Norwegian health professionals were interviewed (Table 1). Their mean length of clinical experience in cardiac care was 12 years (range 0–32 years). All participants had experience of in-hospital patient education, and 18 had experience in patient education after discharge from hospital. Six of the participants had experience of counseling in nurse-led clinics. Five nurses were specialists in cardiology, and one of the physiotherapists specialized in cardiopulmonary rehabilitation. Both physicians were cardiologists.

Table 1 Demographic characteristics of the participants

	Number
Gender	
Female	17
Male	2
Age	
25–39	7
40–49	9
50–62	3
Nationality	
Norwegian	11
Icelandic	8
Profession	
Registered nurse	14
Physiotherapist	3
Cardiologist	2
Highest academic degree	
BSc	13
MSc	4
PhD	2
Source of competence in patient education	
Self-study (e.g. books/literature)	17
Supervision by an experienced colleague	14
Undergraduate education	12
Postgraduate education	12
Patient education course	7
Experience in patient education	
>3 years	14
1–3 years	3
<1 year	2
Self-evaluated experience in patient education	
Little experience	0
Average experience	3
Experienced	13
Extensive experience	3

The participants described the development from novice to expert in different ways. However, the development was commonly seen as a process that develops over time, through education, long-term clinical experience in cardiac care, a supportive learning environment, and personal motivation.

The findings were categorized into eight themes. The first two themes present the characteristics of expert and novice educators. The next two themes indicate the inner motivation and engagement in patient education, which is fueled by a supportive learning environment and peer support. The last four themes present concrete actions that can enhance the developmental process of the expert educator including the use of resources such as standard instructions and educational material, observation and experiential training, and mentoring and guidance from expert educators. The participants' suggestions for resources and activities to enhance competence development all had a clear focus on individualization and evidence-based patient education. See subsection for resources and activities for competence development in patient education.

Resources and activities for competence development in patient education

To be active in knowledge seeking and own training in patient education.
To spend time reflecting and evaluating own performance.
To have the opportunity to ask and receive answers to questions.
To have dedicated time for theoretical learning and updates on new developments.
To attend basic and advanced educational courses and conferences.
To receive training from a mentor or experienced educator.
To have access to peer support and role models.
To have access to forums for knowledge sharing, discussions and consultations.
To get guidance on literature searches and selecting patient educational material.
To have access to a central collection of literature and research articles.
To have access to clinical guidelines, instructions and checklists.
To have access to standardized patient educational material and educational sessions.
To have access to technical assistance while preparing and implementing patient education.
To participate in training through case studies, roleplaying, group work, and discussions.
To observe patient education in various settings from experts in patient education.
To rehearse educational sessions under guidance.
To get guidance in preparing, evaluating, and individualizing the educational session.
To conduct patient education under supervision.
To receive constructive critical reflection on own performance in patient education.
To participate in the development of patient educational programs and educational material.

Characteristics of expert educators

An expert patient educator was described as a health professional with advanced, up-to-date theoretical knowledge in cardiology and educational science, a holistic view of the patients' situation, and sensitivity to and knowledge about their psychological well-being. Confidence and excellent communication skills were also seen as hallmarks of an expert educator, which included disseminating information in an interesting way that is clearly understood by the patient, and creating effective dialogue to motivate patients to perform necessary lifestyle changes. An experienced physiotherapist stated:

> *"It's a challenge for a professional with a wealth of knowledge to present it in a way that makes them* [the patients] *feel safe and confident to ask questions."*

However, the most prominent signs of an expert educator were considered the ability to know when a patient is ready to receive information, being sensitive to the patients' interests and learning needs, and being able to adjust the education to each patient's needs and the context of the situation. An experienced cardiologist described an expert as:

> *"That* [the expert] *is someone who knows when the patient is ready to receive information. You should know which information is beneficial for the patient. You should know how to disseminate the information and motivate the patient to receive the information. That is an expert."*

Characteristics of novice educators

A novice educator was described as having little clinical experience in cardiac care and patient education. Mainly due to this, the novice was said likely to exhibit underdeveloped communication skills and lack sensitivity toward the patient's interests and needs, thus limiting the capability of the novice educator to prioritize information according to the patient's needs. It was recognized that some novices have good theoretical knowledge and disseminate a wealth of good information, but they may not be capable of individualizing the educational session or selecting the most relevant information for the patient. A nurse with average experience described an example of novice educators' capability:

> *"I believe the new beginner, the novice, is in the present; he has enough to deal with. They see the patient here and now. I believe it takes several years before they can see the patient holistically, see his whole life, the consequences, and what may happen."*

Motivation and engagement

Several participants highlighted the necessity for a novice to have inner motivation and an ability to engage in order to become an expert educator. Awareness of the value of patient education and taking an active role in knowledge seeking and own training, were also deemed necessary. When describing why some health professionals become good educators while others do not, an experienced nurse said:

> *"*[…] *because some lack interest. Even though they have long experience, they may not be interested in this* [patient education] *or not dedicated, while others are engaged from the beginning."*

Some participants mentioned how interest in the patient helped motivate them to further their learning, how listening to the patient had helped them to discover which knowledge they lacked, and how they had learned

from patients' experiences and concerns. An experienced nurse stated:

"When there are questions we don't have the answer to, one needs to be undaunted in admitting it, and just say, 'I will find out for you.' You learn a lot that way."

A supportive learning environment

A supportive learning environment at the workplace was considered motivational, inspiring knowledge seeking and facilitating competency development. Examples of factors considered to be motivational included having dedicated time at work for knowledge development, peer support, and informal and formal knowledge sharing. Some participants expressed an unfilled need for easy access to consultations and discussions with others, especially in difficult educational situations. They suggested multidisciplinary team meetings, networks of professionals in patient education, and conferences to enhance knowledge sharing. An experienced cardiologist said:

"[…] *this is the way I do it, how do you do it* [patient education]? *I have never had that conversation with another physician."*

Many participants commented that novice educators need a significant amount of time to develop their knowledge and highlighted time constraints as a barrier to development. Some of the nurses claimed that owing to a lack of time at work, health professionals need motivation to study during their leisure time. However, not all participants were eager to participate in continuing education, as an experienced cardiologist explained:

"I am terrified of everything that uses up my time. If you can participate in a single seminar, that is fine, but the days are so full of tasks. You should always aim at quality but this is about getting through your day."

Supportive educational recourses

To counteract limited time and enhance learning, guidance in finding relevant literature and a central collection of literature and patient educational material was recommended. Standardized educational sessions, standard instructions, and clinical guidelines were reported as valuable sources of information, especially for novice educators, but they were also considered profitable for the expert educator. A nurse with average experience explained the advantages of such supportive educational resources:

"You will be more confident in what you are doing, you get the courage to open up on issues with the patient and, with that, you gain competence."

Clinical guidelines were also considered a quality assurance that promote evidence-based patient education, as they could facilitate coordination of patient education and reduce the time needed to spend updating themselves. An experienced nurse explained:

"They [the clinical guidelines] *facilitate my work, you can organize your work better and be more focused in what you are doing."*

Negative aspects of standard educational material were considered the potential risk of outdated material, since there may not be time to obtain the updates, and the difficulty adjusting the education to individual needs and contexts, particularly for the novice educator, who may be too fixed on the standard instructions.

Building experience through observation and experiential training

The participants had mainly gained competence in patient education through experience, which they recognized as invaluable, and frequently stated the need for training in providing patient education and communicating with patients.

Some participants had observed novice educators trying to avoid providing patient education through fear of receiving unpredictable questions from patients or insecurity in a new situation, which they believed might come from not having tried it before. Their suggestion to overcome the situation was to encourage the novice educator to rehearse the educational session and gain secondary experience through observation of more experienced educators and experiential training.

The value of observing others was said to increase awareness of effective communication skills such as using appropriate language, learning how to explain and respond to questions, and getting an impression of what patient education entails. One of the experienced nurses commented:

"It would be ideal if there were some instruction programs and a chance to observe a nurse providing patient education more than once, maybe two or three times, and then they would provide the education themselves with support [from the nurse]."

Experiential training in the form of roleplaying and rehearsing the educational session were suggested not only to get experience but also to gain a better understanding of the motivation that the educator needs to evoke in the patient and to increase the educator's consciousness of their communication skills and confidence in meeting patients. Another experienced

nurse talked about the value of a more theoretical approach:

"In communication training, you need to read and do exercises. Written exercises, I find them helpful. To have clinical examples, in which the patient says this, how do you respond? And you write down your answer according to this specific method, where the patient is a participant, who you are trying to motivate."

Roleplaying and rehearsing the educational situation could be implemented with colleagues serving as surrogate patients, using artificial patient case scenarios, or a scenario from the educator's life. Although videotaping one's own teaching was considered a good method, there was a concern that this could be threatening or uncomfortable for some.

Moving from novice to expert educator

When asked about how to become an expert educator, the participants mainly described the need for experience, support, and supervision. Supervised practice either as informal guidance from different educators or, more preferably, a formal mentorship from an experienced educator. A structured mentoring program would allow the mentor to become aware of the novice educator's process of learning, limits, and capabilities, making them better able to individualize the supervision. On the other hand, guidance from various educators would raise the possibility of learning a variety of educational strategies and methods. An experienced nurse explained:

"To have access to someone who has more knowledge than you, has a lot of experience, is very important. Not only to receive knowledge but also to discuss problems that arise in individual interviews and in patient education, how you handle those situations."

Participants with experience in training other health professionals in patient education emphasized the importance of using constructive critical reflection and encouraging the novice educator to ask questions. This would enhance the learning process and adoption of good practices, and raise awareness of the pitfalls. An experienced nurse commented:

"[…] *and then I believe it is time to perform, but maybe under the supervision of the professional you learned from and get feedback, I believe that is extremely important, what did you do well and where can you improve."*

However, some participants were concerned that the presence of an experienced educator in the educational setting could result in a passive role for the novice educator and, instead, suggested that supervision should focus on preparing novice educators for educational sessions especially regarding how to prioritize and adjust the patient education to individual patients' needs.

Some participants described how the challenges an educator undertakes should increase in complexity, beginning with providing individual patient education, in which the novice educator has time to practice with only one patient, thus making it easier to observe and reflect on one's actions. An experienced nurse stated:

"The first step would be one-to-one, discussing the disease with the patient and initial education about the disease, lifestyle, and the proceedings."

Once confident, the educator should proceed to providing group patient education and facilitate discussions between patients. An experienced nurse explained the difference in challenges between individual and group patient education:

"Several patients in the discussion group or group patient education are more demanding, because you need to moderate discussions and involve more patients. That is more challenging."

For individual counseling and follow-ups, longer experience and more extensive education and training were considered necessary, since this requires not only a broad knowledge of many areas but also the ability to motivate and help patients to adopt lifestyle changes unique to their situation.

How to remain an expert educator

Those participants with lengthy experience in patient education and even responsibility in training and instructing health professionals in patient education expressed a need for additional continuing education for themselves to further improve their competency. When talking about his own learning needs, an experienced physician stated:

"To have more training in communication, you know, to grasp what people have learned [from the patient education] *and what they want to know. It is this individualization and communication."*

In addition to the advice described in previous themes, the participants saw the need to examine their own performance, while focusing on their limitations and strengths. An experienced nurse explained about her learning needs:

"What would be beneficial for someone who has already acquired a lot of knowledge and has long experience is some kind of training where your

performance will be observed and evaluated, […] *where you get feedback on what in your performance is working well and what is not."*

One activity suggested by the participants was for expert educators to visit hospitals and clinics that lead the way in patient education, to receive introduction to educational programs and educational material and observe another expert educator providing patient education. Another suggested activity would enable the expert educator to design and implement an educational session and receive peer-evaluation, feedback, and instructions from a mentor. Although inexperienced with this form, several participants considered it the next step in their learning process.

Discussion

The ability to know when a patient is ready to receive information, being sensitive to the patients' interests and learning needs, and possessing the ability to adjust the education to each patient's needs and the context of the situation were described as hallmarks of an expert educator. For developing from novice into an expert, inner motivation, active participation of the educator, and a supportive learning environment were considered prerequisites. Supportive educational resources, observations, and experiential training and guidance from experienced educators were suggested actions to enhance the developmental process of the expert educator. Experienced educators expressed the need for peer support and inter-professional cooperation to further develop their competency.

An expert patient educator was described in this study as a health professional with advanced, up-to-date theoretical knowledge in cardiology and educational science. Knowledge is part of clinical competence and includes using evidence-based current knowledge as well as an awareness of the need for knowledge and where to find it [29]. Possessing sufficient knowledge [30] and being professionally up to date are therefore considered crucial in developing competence [31]. The participants in this study were concerned that a lack of knowledge and confidence could add to health professionals' reluctance to conduct patient education, thus hindering their professional development. Lack of knowledge has been identified as a barrier to the implementation of patient education [18] and a lack of resources, structured training, and skills development is considered a barrier to the implementation of CHD secondary prevention [22]. It is therefore concerning that in previous studies, nurses have reported their inactivity in reading literature related to patient education and failure to follow the development of knowledge in those areas [32]. Reluctance to conduct patient education and lack of knowledge in this area are issues that must clearly be addressed if health professionals are to improve their competencies in patient education.

A working environment of mutual respect, partnership, support, trust, and valued staff has been recognized in previous research as an inspiration to learn and develop [30, 33]. Time constraints and heavy workloads present obstacles to motivation for formal continuing education, at least for some of our participants. Professional development and learning through work depends on the employer's support [31, 34]. Several nurses in this study stated that, in order to stay up to date on new developments, they needed to be motivated to study during their leisure time. This situation is supported by previous studies, which have shown that nurses use their leisure time for continuing education [22] and that managers expect them to do so [31]. This emphasizes the importance of considering health professionals' preferences and motivation as well as their clinical reality and managerial support when designing continuing educational interventions.

Showing sensitivity to the patients' interests and learning needs and individualizing patient education were considered hallmarks of an expert educator. The ability to meet patients' individual needs has long been central to the role of an expert educator, as emphasized by Benner [35], who considered that capturing a patient's readiness to learn and knowing when to move ahead were competencies of an expert and key aspects of effective patient education. In this study, novice educators were said to have a tendency to focus on specific tasks, rather than taking a holistic view of the patient, and they rely on standard instructions. Research has demonstrated that experts are superior to novices in recognizing patients' cues and obtaining a total picture of the patient [36]; they do not rely on rules and guidelines but operate from an understanding of each patient's situation [35].

Experience is considered a requisite for expertise [35] and is described as the most important factor in developing competence [33]. In this study, experience was considered invaluable in developing the skills that increase the ability to read the patients and meet them where they are. An active role and reflection of the health professional were considered necessary if experience was to result in expertise. Reflecting on experiences [23] and training in reflective thinking and relevant feedback [30] are important elements in developing competence [37]. This corroborates our findings, as the participants saw mentoring and constructive critical reflection on patient educational experiences and performance as important factors that enhance expert development.

In accordance with prior research [38], further training for experienced educators was deemed necessary to ensure high-quality patient education. When talking about

the educational needs of experienced educators, many complained about scarce opportunities and wished for more peer support, inter-professional cooperation, and mentoring, indicating that experts' learning needs are not being fulfilled. To facilitate more contact and discussions with other expert educators, a network of professionals in patient education was suggested. A lack of forums for joint reflection and discussions on difficult patient educational situations has previously been reported [37], and the need for regular forums for discussions of patient education has been suggested [32]. In this study peer support was the factor most frequently mentioned as an important motivating factor for competency development in patient education.

Strengths and limitations

The main strength of this study lies in the long-term experience the majority of the participants had in patient education in cardiac care and that most had experience in various educational settings. In addition, some had experience in training health professionals in patient education, who therefore possessed a good understanding of the educational needs of both novice and experienced educators.

However, participants with less experience were in the minority, and there were no inexperienced participants. Therefore, including more participants with limited experience may have provided additional information about the educational needs of novice educators. The major limitation of the study was that the results were based on the views and professional opinions of health professionals and not on what they actually do. This approach was consciously chosen because of the absence of comprehensive descriptions of novice and expert educators for individuals with CHD and their educational needs. Even though the participants in this study worked within CHD care, the findings might be transferable to other settings, as they, in part, resonate well with what others have found. In addition, there were no apparent differences between the Icelandic and Norwegian participants.

Conclusion

Having a holistic view of the patient, being sensitive to the patients learning needs, and having the ability to individualize patient education were considered essential competencies of an expert educator. Engagement and motivation in patient education along with awareness of the value of patient education and a supportive learning environment are prerequisites for becoming an expert educator. The experienced educators expressed a need for continuing education and support to further improve their competency. Structured training, peer support, and mentoring from experienced educators could increase the value of clinical experience, enhance the development of experts in patient education, and help to further develop the experts' competencies

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

MHS conducted all interviews in the study, analyzed the data, and drafted the manuscript. AKS and AS contributed to analyzing the data and writing the manuscript by providing critical appraisals. All authors participated in the design of the study, contributed to the content in the manuscript, and read and approved the final manuscript.

Acknowledgments

This project was funded by the Central Norway Regional Health Authority. The authors thank the health professionals who participated in the study.

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Received: 8 October 2014 Accepted: 6 May 2015
Published online: 13 May 2015

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PAPER III

TITLE PAGE

Title

What is a good educator: A qualitative study on the perspective of individuals with coronary heart disease

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Source of support

Funded by the Central Norway Regional Health Authority.

Word count abstract/text: 246/3376.

Tables/figures: 3 tables/0 figures

Abstract

Background: Patient views are especially important in patient education, as patient involvement is essential. However, no empirical research clarifies what knowledge, skills and competencies are needed to competently serve as a good educator according to the patients themselves.

Aim: To investigate what qualities patients with coronary heart disease perceive in a good educator.

Methods: A qualitative study using semi-structured individual interviews. Participants were recruited from a regional hospital in Iceland and Norway. The data were analyzed using systematic text condensation.

Results: The participants included 17 patients who had been through a percutaneous coronary intervention and participated in formal patient education after discharge from hospital. The data were analyzed using systematic text condensation. The patients saw a good educator as one who they feel is trustworthy and who individualizes the education to the patients' needs and context and translates general information to their personal situation in lay language. Building trust was dependent on the patients' perceiving the educator to be knowledgeable and good at connecting with the individual patient, so that the patients feel they are being treated as a whole person with equality and respect.

Conclusions: The patients perceived the capability of building trust and tailoring the education to the individual as the most prominent characteristics of a good educator. Training skills that facilitate patients' trust, being observant to the patient and his learning needs and adjusting the patient education to individual needs and situations should be key objectives in health professionals' training in patient education.

Keywords (MeSH)

Professional competence; coronary disease; health educators; patient education as topic, secondary prevention; trust.

Introduction

An aging population and greater survival rates of patients with acute coronary events have increased the prevalence of individuals living with established coronary heart disease (CHD), susceptible to recurrence.[1] Evidence suggests that the disease process can be slowed or reversed through lifestyle changes.[1, 2] Despite this, several studies have reported poor disease-related knowledge of patients with CHD,[3-5] that patients desire more information and support after discharge from the hospital,[6-8] and that they often fail to maintain lifestyle changes.[9]

European guidelines on cardiovascular disease prevention in clinical practice[1] recommend health education following discharge from the hospital to minimize adverse events. Patient education can increase knowledge and enhance behavior changes[10] and improve patients' health-related quality of life.[11] Yet, very few studies[12] have sought to show what competencies are needed to implement patient education for patients with CHD.

There is a growing recognition that health professionals can learn from patients, and the value of patient views is increasingly being recognized. Patient views are especially important in patient education, as patient involvement is essential. The value of utilizing the opinion of patients has been demonstrated in the development of patient educational material[13] and educational interventions.[14] Several studies have explored the educational needs and preferences of patients with CHD[6-8, 15] and their disease experiences.[16-18] Patient views on what competencies educators need to implement good education can help to determine the knowledge and skills needed to conduct effective patient education and can be used to improve health care professionals' competencies in creating and implementing quality patient education. However, no empirical research clarifies what competencies a good educator needs according to the patients themselves.

The aim of this study was to investigate what patients with coronary heart disease who have participated in patient education after a percutaneous coronary intervention perceive as a good educator.

Methods

This was a qualitative study using semi-structured face-to-face individual interviews. This is an appropriate method of data collection when the inquiries relate to personal experience and perceptions[19] and is thus well suited to provide an understanding of the issues of importance to patients.

Sample and recruitment

The aim was to recruit Icelandic and Norwegian individuals with CHD who had undergone percutaneous coronary intervention (PCI). Participants were required to have received formal patient education after their hospital stay, to be ≥ 18 years of age and to be able to understand the study and study procedure. There were no exclusion criteria. Informants were selected to ensure variation in age, gender and time passed from the PCI. To recruit patients, nurses in one regional hospital in Iceland and one in Norway introduced the study to eligible participants, handed out invitation letters and enrolled volunteers.

Data collection

The data were collected between June 2014 and May 2015. The interviews were conducted by the first author at a location chosen by the participants. The interviews were audiotaped and transcribed verbatim. The average interview duration was 44 minutes.

To ensure that all participants revealed their view on the same topic, an interview guide was used. The participants were asked open questions about their experiences with patient education after the PCI, what they perceived as a good educator, what they appreciated the most in educators' "performance" and what they perceived as positive and negative aspects of the patient education they received. The interview guide was revised after each interview and adjusted according to the themes that appeared in the previous interviews.

Ethical considerations

The participants received written and oral information about the study, and they were informed that they could withdraw at any time and that confidentiality was assured. Written informed consent was obtained from participants before the interviews were conducted.

The study was conducted in accordance with the Helsinki declaration[20] and was approved by the Regional committee for medical research ethics in Norway (2014/947 /REK midt) and the Ethics committee of the Akureyri Hospital (3/2014) in Iceland.

Analysis

The data were analyzed using systematic text condensation as described by Malterud[21] An iterative four-step process was conducted, starting after the first interview by reading the transcribed interviews to obtain a general impression and identify preliminary themes. In the second step, the transcriptions were systematically reviewed line by line and the units of meaning were identified, classified and sorted into themes. The third step was to sort the units of meaning into subgroups and reduce the content into a distillation of rephrased quotations, maintaining as much as possible the original terminology used by the

participants. In the last step, the contents of each code group were summarized into generalized descriptions and concepts.

Analysis was carried out by the first author and discussed and negotiated with the co-authors. To avoid preconceptions affecting the reflexivity of the results, the interview guide and the interpretation of the interviews were also critically discussed between the co-authors and a team of experienced researchers. Recruitment and interviewing of participants were continued until no new themes were found. The analysis was validated by reviewing the original transcripts of each interview to make sure that they were reflected in the results. The Icelandic and Norwegian citations were translated into English by the first author and validated by co-authors. The citations that best illustrated the themes were chosen to illustrate the results, and they are marked with the informant's sex, age, whether they underwent a primary or elective PCI and time from the PCI.

Results

Seventeen Icelandic and Norwegian patients with CHD who had undergone PCI were interviewed (Table 1). The average length from the PCI was 6.5 months (1.5-19 months). Their average age was 59 years (range 47-72).

[Insert Table 1]

The findings were categorized into two themes that sum up the informants description of a good educator (Table 2). *Trustworthy* reflects the two main factors that contribute to the patients' trust in the educator: that the educator is knowledgeable with professional credibility and is able to connect with the patients

such that the patients feel treated as whole persons with equality and respect. The patients also wanted good educators to be able to *individualize education* to their individual needs and context.

[Insert Table 2]

Trustworthy

Knowledgeable. To trust an educator and be willing to follow his advice, the patients said that they needed to feel that the educator knew what he was talking about. This included the educator being confident and competent in explaining and answering questions. It was also beneficial if the information was congruent with what other health professionals had told them, and the patients' prior knowledge or beliefs were also used to determine the educator reliability. If the patients suspected information to be based on convenience or personal opinions rather than scientific knowledge, they said they tended to lose faith in that educator. Speaking honestly about the patients' situation and admitting a lack of knowledge also seemed to help in building trust.

"And what is important in all this is that they just say that they don't know. Because, they don't know. [...] *Then, you start trusting them."* (F <60, p-PCI 10 months ago).

Many of the patients said that knowing that the educator was specialized or worked in cardiac care made the educator trustworthy. Which profession the educator belonged to was not important for most of the patients, but some said that they would trust a cardiologist more as they thought they were more knowledgeable.

"It is very good that that it is a person who works in cardiac care. I believe I listen more to them than I would listen to my family physician." (F ≥60, p-PCI 5.5 months ago).

Connects with the individual. Most of the patients said that having a feeling of a personal connection with the educator enhanced their trust in him. Expressions used were to show an interest in them, to listen to them and to consider the effect of the disease on their whole life and physical and mental well-being. A private chat, unrelated to their disease, was seen as an ice-breaker and as part of connecting with the educator.

They said they would be more relaxed and more receptive to information when they felt the educator was present and had time, was aware of what they had been going through, and treated them with respect and equality. This also helped the patients express themselves more freely and made them more comfortable to discuss and ask questions.

"He talked over your head, but she talked with you. They really didn't say different things, but she sat down, chatted about various things and then this [the patient education] *came in between. It was kind of when you chat in your kitchen at home, you don't get defensive or nervous.* […] *But he would stand at the end of the bed and talk down* […]. *She didn't spend more time in talking to me, but her time was so much better* […]. *This was all so natural. It is this relaxed atmosphere."* (F <60, p-PCI 10 months ago).

For some of the patients, being seen as a whole person included the educator seeing the family as a part of the picture, and they emphasized that the educator should be aware of the needs of their family or next of kin.

"*I feel badly about how uneasy this made my family* […] *what they had to go through, they were much more anxious than I was after the event. It is challenging to take care of the family. They were welcome to attend the patient educational sessions, which is very good, but they really need something* [support], *too"* (F <60, p-PCI 10 months ago).

In contrast to educators who connected with them as individuals, some patients described communication with an educator who did not listen to their views or respect their knowledge but used one-way communication to convince them to take actions they did not believe in. The patients said that this resulted in lost faith in that educator and that they became unreceptive to information from him.

Individualized education

The patients described having various educational needs, but a common theme for them all was the desire for more individualization, e.g., having the educator sit down with them and translate general information to their personal situation in lay language. One example mentioned by several patients was how being shown graphical descriptions of their own coronary arteries with explanations of what had been done in their PCI helped them in understanding. The main topics they wanted individualized were their treatments and what had happened, why this had happened to them and how this all related to their symptoms.

"You got some brochures with general information, but what you really needed was detailed information about what has been done [in the PCI] *to you personally* […] *What this all means for you."* (M <60, p-PCI 7 months ago).

The topics the patients talked about in the interviews that they thought an educator should be prepared to discuss and educate about are presented in Table 3. Some said that they did not know what knowledge

would benefit them and were thus unable to ask or request information. They therefore appreciated it when the educator was aware of what knowledge would benefit them and could start the conversation about those issues and direct them in their knowledge seeking.

[Insert Table 3]

Another aspect of individualized education was that an educator must be capable of selecting the right timing and place for patient education. Many said they had limited benefits from the patient education they received during their hospital stay, as they were not in a state in which they were ready to receive information and remembered little of what was said. All of the patients expressed a need for more patient education after discharge from the hospital, and many emphasized the need for the repetition of information. Some patients gave examples of a lack of privacy hindering them in asking, sharing or discussing information during the hospital stay. Other patients talked about their experience of having difficulty asking questions in a group because they did not have the courage to speak out in public or did not want to appear stupid.

"You get a lot of information when you are discharged, but you just don't get it all. […] *What would be better is an interview shortly after discharge.* […] *It is this follow-up that is needed."* (M <60, p-PCI 7 months ago).

Most of the patients emphasized the importance of being in control but expected the educators to guide them in their choices. However, when realizing that they did not make a good choice or had failed to follow advice, some of the patients said that the educator should have tried to persuade them otherwise or be stricter. The patients also gave examples of instances where they felt that the educator should make

decisions for them or take control, for example, when they felt their condition was too serious, or when they felt that they did not have sufficient knowledge to make the decision themselves.

"They explained to me how big of a risk factor this is [the smoking] […], *but they all talked very mildly about this* […] *they could have said this in a more determined way, more harsh."* (M ≥60, p-PCI 7.5 months ago).

Discussion

This study was conducted in two countries among patients who had participated in two different formal patient educational programs after discharge from hospital. The participants saw a good educator as one who is trustworthy and able to individualize the education to the patients' needs and context. Building trust was dependent on the patients' perceiving the educator to be knowledgeable and good at connecting with the individual patient by using communication skills that made the patients feel seen, heard and respected.

Promoting trust in the patient-educator relationship

The central finding in this study was that the participants consider being trustworthy the most essential characteristic of a good educator. To our knowledge, no empirical study has described the importance of trust in patient education or the factors that promote trusting patient-educator relationships from the patients' perspective.

However, several studies have demonstrated that trust is central to the patient-health professional relationship[22] and trust has been associated with successful lifestyle changes,[23] adherence to medication

and treatment plans,[24] preference for involvement in medical care[25] and perceived control over the disease.[26] It has been stated that promoting trust is a demonstration of the providers ability to show interpersonal and technical competence, moral comportment and vigilance to support positive patient outcomes.[27] Thus, in concordance to the patients perspective, knowledge and competency in skills that facilitate a trusting patient-educator relationship is important for educators.

There are, nevertheless, some negative aspects of trusting patient-educator relationship that the educator should be aware of. In contrast with our findings, patients' trust in others has also been associated with patients being less active and less motivated to improve their health situation.[28] There might also be differences in level of trust between groups of patients with studies suggesting that the elderly and less educated cardiac patients are more trusting,[26] and one study showed that cardiac patients with less health literacy were more distrusting of their physician.[29]

In this study, patients' perceptions of the educators' knowledge had a strong influence on their trust in the educator. Knowledge is a basic competency in patient education[12] and has been found to be necessary for the development of a professional relationship and building trust between health professionals and patients.[30-32] In line with our results, other have found that to be successful in lifestyle counseling, health professionals need to have experience and good knowledge of the subject,[12, 31] give a credible impression,[31] and exhibit their competence and knowledge to the patients.[30] This can be the reason why the patients in this study wanted educators with specialization in cardiac care as they have the theoretical and clinical background the participants need for their patient education. This is also supported by the findings of a previous study that demonstrated that cardiac patients have a high degree of trust in their cardiologist,[26] and their preferred source of heart disease information and lifestyle change support was the cardiac rehabilitation staff.[15]

The other factor contributing to trustworthiness from the patients' perspective was how the educator managed to connect with the patient and the use of communication skills that made the patients feel seen, heard and respected. Educators themselves have also acknowledged that the capability to connect with patients is a basic competency in patient education.[12] Connecting with the educator was said to enable free and relaxed expression. This could help the educator in tailoring the education to individual needs. Building trust is considered a dynamic process,[27] and taking time with the patient and continuity of care is needed to develop trusting relationships.[27, 31] Similarly, our results indicate that continuity of care and repeated interactions are needed to promote a trusting patient-educator relationship.

As patients perceive, building trust as an essential characteristics of a good educator, skills that promote trust should be a key objective in health professionals' training in patient education. However, in a systematic review, it was found that efficient interventions to develop skills in promoting trust are lacking.[33] There is thus a need for developing approaches to efficiently train educators in the type of skills and knowledge they need to have to gain the patient trust.

Tailoring the education to the individual needs and context

It is known that tailored face-to-face information is an effective method for creating behavior change in patients. [34] The patients in this study, in concordance with previous research,[7, 8] favored a verbal face-to-face approach, as this enabled them to ask questions, obtain further explanations and provided an opportunity for discussion about their personal situation. To facilitate changes in the patient's lifestyle the educator needs to be able to understand the patients everyday life and to identify motives for change.[31] Our results indicate that although for practical reasons patient education needs to be delivered in group settings, there are patients who want to be offered private consultations.

Making time to tailor the education to each patient's individual needs and context can be challenging in a busy clinical environment and with shorter hospital stays. Thus, a good educator is dependent on a system that allows for time and space within their clinical work to do so. One solution might be a nurse-managed clinic where the patient is in a follow-up program integrating education after a hospital stay.[35-37] This is especially relevant as it has been found that trust scores are higher for patients in nurse-managed clinics than joint-managed clinics,[27] they are more effective than standard care in reducing cardiovascular risks and improving patient lifestyles,[35-37] and they can have an effect on psychological well-being. [38]

Strengths and limitations

This study was undertaken among a specific group of patients (patients with CHD), which might limit the generalizability of the results to other patient populations. However, we had good variability within the sample as the study was performed in two countries; the patients were treated at four different treatment centers and had gone through two different educational programs. There was also good variability in the time from event to the interviews; hence, the results reflect the patients view in the first 19 months of the disease process. Given this and that the results of this study demonstrate a diversity of patient preferences that are supported by research in other areas, we argue that the findings are likely to be transferable beyond the current context.

The major limitation of the study is that it does not distinguish between competencies needed for different educational methods such as group or individual education, or contexts such as education within hospitals or after discharge or at various times from the event. As the participants were recruited by nurses from the patient educational programs in which the patients had participated, we may have missed some criticism or negative perspectives.

Conclusions

The results provide an understanding of factors that promote trusting patient-educator relationships and complement the competencies of the educator, from the patient perspective. The patients in this study wanted patient education from a health professional specialized in cardiac care and preferred individual face-to-face patient education. Building trust and the capability of tailoring the education to individual needs and contexts were identified by the participants in this study as the most prominent characteristics of a good educator.

Funding

This work was supported by the Central Norway Regional Health Authority.

Acknowledgements

We thank the patients who generously gave their time and shared their experiences. We also thank the nurses who assisted in the recruitment of participants.

Conflict of interest

The authors have no conflict of interest.

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Legends

Table 1 Demographic characteristics of the participants

	Number
Gender	
Female	8
Male	9
Age	
≤ 60	9
> 60	8
Nationality	
Norwegian	6
Icelandic	11
Education	
Elementary school or less	8
Vocational training or High school	6
College or University degree	3
Marital status	
Married	14
Widowed or divorced	3
Disease history	
Primary PCI	14
Elective PCI	3

Table 2. Participant's perceptions of the characteristics of a good educator

TRUSTWORTHY		INDIVIDUALIZES EDUCATION
Knowledgeable	**Connects to the individual**	
Background in cardiology Specialized in cardiac care. Clinical experience in cardiac care. **Reliable information** Confident in explaining and answering questions. Bases information on scientific knowledge. Information is congruent with information from other health professionals. Information are congruent with the patients prior knowledge.	**Sees the whole picture** Sees the patient as an individual. Considers physical and mental well-being. Includes the family. **Is present and has time** Caring and friendly. Is interested in the patient and listens. Shows understanding. **Shows respect and equality** Respects the patients' views and wishes. Makes the patient feel comfortable to ask and discuss. Motivates the patient to ask and discuss. Is honest.	**Invites information that benefits the patient** Directs the patient in his knowledge seeking. **Tailors the education to individual needs and context** Translates general information to the patient's personal situation. **Explains and answers questions in lay language** Adjusted to the patient's level of understanding. Is clear and concise. **Selects the right time and condition for education** Invites patient education when the patient is ready. Ensures privacy. **Guides the patient as desired** Gives the patient a chance to decide when he desires. Helps in decisions when the patient desires. Decides for the patient when desired.

Table 3. The topics that the patients wanted educators to be prepared to discuss and provide education about.

Topic	Quotes
The heart	*"Overview of the heart and the vascular system.* […] *understand how the body works, then it will be easier to change."* (M ≥60, p-PCI 4 months ago).
The disease	*"He explained the disease to me and then I felt relived"* (M ≥60, e-PCI 7,5 months ago).
Cause	*"Why me, what caused this"?* (F ≥60, p-PCI 5.5 months ago).
Reflection of the incidence	*"I needed someone to sit down with me and talk to me about what I had been through."* (F <60, p-PCI 3,5 months ago).
The PCI	*"To visually see this at the same time he was explaining* […]. *I found it very helpful […] to see how my coronary arteries were before and after."* (M <60, p-PCI 10 months ago).
Medication	"*I had those two pills, I figured that one of them must be temporary and stopped taking the one prescribed later, and then I got a chest pain."* (M ≥60, p-PCI 7 months ago).
Symptoms	*"It explained a lot for me, why I had so little energy at work and to walk, and the pain in the breastbone that had been a mystery to me."* (M ≥60, e-PCI 18 months ago).
Seriousness	*"Many of them were allowed to drive a car much earlier than I was, and thus, I just assumed that this must have been very serious."* (M ≥60, p-PCI 4 months ago).
Recovery	*"Some have full recovery, and others don't.* [...] *What chances do you have to go back to normal life* […] *Will I be able to go back to work?"* (F ≥60, p-PCI 5,5 months ago).
Consequences	*"There should be more information about the consequences. It is not the end* […]*, you can live with it*, *you can have an all right life."* (F ≥60, p-PCI 5,5 months ago).
Do's and don'ts	*"You need to know what to be careful with and what is safe to do."* (F ≥60, p-PCI 5,5 months ago).
Recurrence	*"If this will happen again, what then? Maybe it will be very serious and I will be unable to call for help."* (M ≥60, p-PCI 10,5 months ago).
Available treatment	*"To know that if the stent, or whatever this is, fails and you get another occlusion, then this could be performed again, meant a lot to me"* (M ≥60, e-PCI 18 months ago).
Comorbidities	*"That this was not something I was magnifying, worries or stress, but something that follows the disease process when you get severely ill."* (F <60, p-PCI 10 months ago).
Stress/Emotional reactions	*"Sometimes you need encouragement. […] This is a serious disease and it is very helpful to be able to express yourself and talk about how you feel." (F <60 p-PCI 9 months ago).*
How to enhance recovery	*"To tell me how important the physiotherapy is […] Then, I would have made other decisions."* (F <60, p-PCI 3,5 months ago).

Available services	*"There are social workers and psychologists, but people don't know where to go. It needs to be included in this education where you can get help."* (F ≥60, p-PCI 5,5 months ago).
Risk factors	*"They constantly repeat that you should go out for a walk. Maybe you are too lazy to go out for a walk. We need more education about how important this is*." (F ≥60, p-PCI 5,5 months ago).