

JEKATERINA DEMIDENKO



Older Patients' And Their Families' Wellness And Social Support In Emergency Departments



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ACADEMIC DISSERTATION

To be presented, with the permission of
the Faculty Council of Social Sciences
of the University of Tampere, for public discussion
in the auditorium F114 of the Arvo building,
Arvo Ylpön katu 34, Tampere,
on 27 April 2018, at 12 o'clock.

UNIVERSITY OF TAMPERE

JEKATERINA DEMIDENKO

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Acta Universitatis Tamperensis 2365
Tampere University Press
Tampere 2018



UNIVERSITY
OF TAMPERE

ACADEMIC DISSERTATION

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The originality of this thesis has been checked using the Turnitin OriginalityCheck service in accordance with the quality management system of the University of Tampere.

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Cover design by
Mikko Reinikka

Acta Universitatis Tamperensis 2365
ISBN 978-952-03-0709-7 (print)
ISSN-L 1455-1616
ISSN 1455-1616

Acta Electronica Universitatis Tamperensis 1871
ISBN 978-952-03-0710-3 (pdf)
ISSN 1456-954X
<http://tampub.uta.fi>

Suomen Yliopistopaino Oy – Juvenes Print
Tampere 2018



This dissertation is dedicated to those older patients and their families and nurses who participated in the study and shared their valuable experience regarding family wellness and social support in emergency departments.

ACKNOWLEDGEMENTS

This study was carried out at the Faculty of Social Sciences, University of Tampere, between 2012 and 2017. During the study process, I have experienced the support and motivation of many people, both PhD students and university academic staff. I would like to express my gratitude to all of them.

I would like to extend my deep appreciation to Professor Tarja Suominen PhD, RN from the University of Tampere. Dear Tarja, I can never find enough words to truly express my gratitude. Thank you for the guidance, trust, supervision and encouragement, especially when I lacked self-confidence and patience. I greatly respect your valuable expertise in nursing science. I would like to thank Adjunct Professor Pirkko Routasalo PhD, RN for the valuable comments, supervision and motivation to put more effort into the writing process. Dear supervisors, I had the honor to be your student, and without you I would not have achieved my goal. I just want to say how grateful I am that you were my supervisors!

I am thankful for the follow-up members Professor Päivi Åstedt-Kurki, PhD, RN (University of Tampere) and Professor Eija Paavilainen, PhD, RN (University of Tampere) for your professional expertise, patient guidance and discussions throughout the study process. My appreciation to Associate Professor Kai Saks, PhD, RN (University of Tartu, Estonia) for the valuable advice regarding increasing the response rate of family members. I would like to thank Biostatistician Mika Helminen, MSc (University of Tampere) for the professional advice concerning statistical issues and interpreting results.

I am grateful to the official pre-reviewers, Associate Professor Birte Østergaard and Docent Sini Eloranta for their constructive review and valuable comments, which helped me to improve my research presentation skills.

I would like to thank all the family members of the older patients and the nurses who participated in this study for their contribution and the valuable experiences they shared. I extend my appreciation to all the administrative staff (i.e. head nurses, managers) of the involved emergency departments (EDs) of four Estonian hospitals (East-Tallinn Central Hospital, East-Viru Central Hospital, Tartu University Hospital, North Estonia Medical Centre) for their trust and contribution. For the help with testing the questionnaire used in this study, I would

like to thank administrative staff of three general hospitals (Rakvere Hospital, South-Estonian Hospital, Narva Hospital).

I have the deepest appreciation for my colleagues from the Estonian Health Insurance Fund (EHIF) for the support they provided that helped me to speed up the study process. I am especially grateful to Raimo Laus (EHIF) for his professional advice.

I would like to thank all the academic staff and PhD students of the European Academy of Nursing Science for their valuable expertise and the inspiration they gave me to keep going.

I offer my special gratitude to the University of Tampere, Faculty of Social Sciences, and to the Estonian Nurses Association for their financial support, which enabled me to participate in the seminars, attend courses abroad and conduct my study.

Finally, I would like to thank my family, especially my parents Zinaida and Valeri Šteinmiller, my dear sisters Anastassia and Anna for their love and trust and for being proud of me. My deepest gratitude goes to my husband Sergey for his patience, support and love. I always knew that my family would support me in whatever decision I made, and they came through in spades. Also, I dedicate this thesis to my lovely son David, who is joy of my life!

I would like to thank my dear friend Oksana Bulanova, who showed what a real friendship should be at the most critical time.

Tallinn, March 20, 2018

Jekaterina Demidenko

ABSTRACT

The proportion of older people visiting emergency departments (EDs) is substantial and ever increasing. After receiving help at an ED, older patients often are discharged home, where family members have a significant role to play in providing aftercare. It is important to gain a better understanding of the family wellness and social support initiatives that are provided in EDs to home-discharged older patients and their families.

The present study explores why older people visit an ED and how family wellness is experienced and social support is received by the family in the ED, from the point of view of family members and nurses. In addition, the associations between family wellness and social support are examined. In this study, the term 'family wellness' is operationalised to family health and family functioning.

The study was conducted in two phases. In Phase I, a systematic literature review of 25 articles regarding older people in ED was carried out. In Phase II, an empirical descriptive cross-sectional study was conducted in four Estonian EDs involving family members ($n = 111$) of older patients discharged home and nurses ($n = 93$). Data were collected using a family nursing instrument called the Family Functioning, Health and Social Support (FAFHES), which is answered using a 6-point Likert scale.

Based on the literature review, there are several reasons why older people appear in the ED. These include cardiovascular, mental health, musculoskeletal and abdominal conditions; adverse drug reactions; dermatological, neurological and respiratory conditions; poor health status; influence of a time factor (e.g. certain time of the year/season) and accidents. Some factors that affect the discharge of older people from the ED are unresolved problems (e.g. health or social problems), health risk identification, aftercare instructions, medication prescribed at discharge and the patient's type of residence before the ED admission. Several factors for readmission to the ED are sociodemographic (e.g. age, gender), social problems (e.g. type of dwelling), health problems, need for systematic health assessment, healthcare service use and inadequacy of care provided.

Based on the empirical study, the family health described by family members and nurses was rated as moderate. According to family members, family health was

positively related to living together with a family member. There were several statistically significant associations between subareas of family health and the background factors of family members. From the nurses' viewpoint, family values were associated with cardiovascular problems of the older patient who appeared in the ED.

Both family members and nurses rated family functioning as moderate. Family members reported that structural factors were associated with the social status of the family member. In addition, family strengths were better when older patients received help from the family in daily life before the ED visit. Statistically significant differences between the family members and nurses were found regarding family functioning in general and in two subareas, structural factors and relationships inside the family.

The social support a family received in the ED was at the moderate level as reported by the family members and by the nurses' descriptions of what they provided. The nurses indicated that the more nurses were working in the ED, the less social support provided. In addition, a weak negative correlation was revealed between affirmation and the age of nurses. There were statistically significant differences between family members and nurses when social support and its three subareas were evaluated. There was a linear relationship identified between family wellness and social support for both family members and nurses.

This study offers implications for nursing practice, management, education and further research. It suggests the development of the evidence-based guidelines for providing care and discharge planning for older patients and their families in the ED. Likewise, integrating a comprehensive geriatric assessment or risk assessment of the older patient during an ED stay is recommended. Based on the literature review, it is essential that ED nurses be aware of the situation of patient and family situation for whom they provide care. Developing a nursing checklist for evaluating the level of family wellness and social support at discharge may provide more information regarding the situation within the family, prevent uncertainty and improve the patient's outcome and clinical performance. This study recommends that nursing care provided for older patients and their families in EDs should be more supportive and family-centred. Further research is suggested to compare the situation of different EDs and to identify improvements and differences using a longitudinal study design.

Key words: older patient, family wellness, family health, family functioning, social support, emergency department, nursing care

TIIVISTELMÄ

Vanhusten osuus päivystyspoliklinikalle hakeutuvien potilaiden määrästä on melko suuri ja kasvaa jatkuvasti. Poliklinikalla annetun hoidon jälkeen vanhukset usein kotiutetaan. Perheenjäsenten rooli kotona tapahtuvassa jälkihoidossa on tärkeä. On tärkeää saada oikea kuva vanhuspotilaiden perheen hyvinvoinnin ja sosiaalisen tuen tarpeellisuudesta ennen potilaiden kotiuttamista. Tässä tutkimuksessa käsitellään samanaikaisesti sitä, miksi vanhukset päätyvät päivystyspoliklinikalle ja miten perheenjäsenten hyvinvointi koetaan sekä miten perhe on saanut sosiaalista tukea perheenjäsenten ja henkilökunnan näkökulmasta. Sen lisäksi tutkimuksessa käsitellään perheen hyvinvoinnin ja sosiaalisen tuen välistä yhteyttä. Tehdyssä tutkimuksessa perheen hyvinvointi koostui perheenjäsenten terveydestä ja heidän toimintakyvystään.

Tutkimuksessa oli kaksi vaihetta. Ensimmäisessä vaiheessa tarkastelun pohjana oli 25 artikkelia vanhuspotilaiden päivystyspoliklinikakäynneistä. Toiseen vaiheeseen eli empiiriseen tutkimukseen osallistui kotiutettujen vanhuspotilaiden perheenjäseniä (n=111) ja hoitajia (n=93). Tutkimus toteutettiin neljällä virolaisella päivystyspoliklinikalla. Vastaukset koottiin The Family Functioning, Health and Social Support (FAFHES) kyselylomakkeella, jossa vastaajat käyttivät 6-portaista Likertin asteikkoa.

Kirjallisuuskatsauksessa selvisi, että vanhuspotilaiden päivystyspoliklinikalle hakeutumiseen oli monia eri syitä. Niitä olivat kardiovaskulaariset, psyykkiset, lihasperäiset ja vatsaontelon ongelmat. Lisäksi esiintyi lääkkeiden sivuvaikutusten aiheuttamia ongelmia sekä dermatologisia, neurologisia ja respiratorisia oireita, huonovointisuutta, ajankohtaan (tietty vuodenaika) liittyviä ongelmia ja onnettomuuksien aiheuttamia tapaturmia. Seuraavat tekijät olivat keskeisiä vanhuspotilaiden kotiuttamisissa päivystyspoliklinikalta: ratkaisemattomat ongelmat (terveydelliset tai sosiaaliset ongelmat), terveysriskien tunnistaminen, jatkohoitosuunnitelmat, päivystyspoliklinikalla määrätty hoito ja potilaiden asuinpaikan olosuhteet ennen päivystykseen saapumista. Sen lisäksi oli tekijöitä, jotka vaikuttivat potilaiden hakeutumiseen uudelleen päivystyspoliklinikalle: sosiodemograafiset (ikä, sukupuoli) tekijät, sosiaaliset ongelmat (asuinpaikka), terveysongelmat, säännöllinen terveyden arvioinnin tarve, terveydenhuollon palveluiden käyttö sekä päivystyspoliklinikalla saatu puutteellinen hoito.

Empiirisen tutkimuksen mukaan sekä perheenjäsenet että hoitajat arvioivat perheen terveyden olevan keskinkertainen. Perheenjäsenien mielestä heidän hyvä terveytensä oli yhteydessä heidän kanssaan asuvien ikääntyneiden perheenjäsenien hyvinvointiin. Perheenjäsenien terveyden ja ikääntyneiden perheenjäsenien taustatietojen välillä oli monia yhteyksiä. Hoitajien näkökulmasta perheen arvot olivat yhteydessä päivystyksessä olleiden vanhuspotilaiden kardiovaskulaarisiin ongelmiin.

Sekä perheenjäsenet että hoitajat arvioivat perheenjäsenien toimintakyvyn keskinkertaiseksi. Perheenjäsenet ilmaisivat, että perheen rakenteelliset tekijät olivat sidoksissa perheenjäsenien sosiaaliseen statukseen. Lisäksi perhe oli vahva, jos vanhuspotilas sai tukea arjessa perheenjäseniltään ennen päivystyspoliklinikalle saapumistaan. Tilastollisesti merkittävät eroavaisuudet löytyivät perheenjäsenien ja hoitajien näkökulmasta perheen toimimisesta kokonaisuutena sekä perheen rakenteellisiin tekijöihin ja perheenjäsenien sisäisiin suhteisiin liittyen.

Perheenjäsenien ja hoitajien näkökulmasta päivystyspoliklinikalla saatu sosiaalinen tuki oli keskinkertaista. Hoitajien mielestä mitä enemmän hoitajia työskenteli päivystyksessä, sitä vähemmän sosiaalista tukea oli annettu. Lisäksi hoitajien pätevyuden ja iän välillä oli heikko yhteys. Perheenjäsenien ja hoitajien näkemysten välillä oli tilastollisesti merkittävät eroavaisuudet, kun arvioitiin sosiaalista tukea ja siihen liittyvää kolmea osa-aluetta. Perheenjäsenet ja hoitajat tunnistivat lineaarisen yhteyden perheen hyvinvoinnin ja sosiaalisen tuen välillä.

Esillä oleva tutkimus tarjoaa viitteitä muuttaa hoitokäytäntöjä, johtamista ja koulutusta sekä tehdä jatkotutkimusta. Se luo pohjaa kehittää näyttöön perustuvan hoitotyön ohjeistuksia vanhuspotilaiden ja heidän perheenjäseniensä hoitoon päivystyspoliklinikalla. Lisäksi tulokset antavat aihetta vanhuspotilaiden geriatriseen ja riskien arviointiin. Myös päivystyspoliklinikalta kotiuttamista tulee kehittää. Kirjallisuuskatsauksen mukaan on tärkeää, että päivystyksen hoitajat ovat tietoisia jokaisen hoitamansa potilaan perhetilanteesta. Hoitotyön tarkistuslistan kehittäminen perheen hyvinvoinnin ja sosiaalisen tuen arvioimisessa vanhuspotilaan päivystyspoliklinikalla kotiuttamisen aikana tarjoaa tietoa perheen olosuhteista, ennalta ehkäisee epävarmuutta ja parantaa sekä potilaiden että kliinisen hoitotyön tuloksia. Esillä oleva tutkimus suosittelee, että päivystyspoliklinikalla vanhuspotilaille ja heidän perheenjäsenilleen tarjottavan hoitotyön pitää olla tukea antavaa ja perhekeskeistä. Jatkotutkimuksilla voidaan tunnistaa vastaavia tilanteita muilla päivystyspoliklinikoilla sekä tilanteiden eroavaisuuksia ja tarvittavia muutoksia käyttäen pitkittäistutkimusta.

Avainsanat: iäkäs potilas, perheen hyvinvointi, perheen terveys, perheen toiminta, sosiaalinen tuki, päivystyspoliklinikka, sairaanhoito

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LIST OF ORIGINAL PUBLICATIONS

This dissertation is based on the articles which are referred to in the text by their Roman numerals I – IV and listed as follows.

- I. Šteinmiller, J., Routasalo, P., Suominen, T. (2015) Older people in the emergency department: a literature review. *International Journal of Older People Nursing*, 10(4): 284–305. doi: 10.1111/opn.12090.
- II. Demidenko, J., Routasalo, P., Helminen, M., Åstedt-Kurki, P., Paavilainen, E., Suominen, T. (2018) Family health evaluated by family members of older patients and nurses in emergency department. *Nordic Journal of Nursing Research*, 38(1): 38–470. doi.org/10.1177/2057158517711321.
- III. Demidenko, J., Routasalo, P., Helminen, M., Paavilainen, E., Suominen, T. Family functioning evaluated by family members of older patients and nurses in emergency departments. *Scandinavian Journal of Caring Sciences*, doi: 10.1111/scs.12552. Online Version of Record, first published: 11 December 2017.
- IV. Demidenko, J., Routasalo, P., Helminen, M., Åstedt-Kurki, P., Paavilainen, E., Suominen, T. (2018) Social support received by the family of older patients in emergency department: a cross-sectional study. *Clinical Nursing Studies*, 6(2): 1–8. doi: 10.5430/cns.v6n2p1.

The articles are re-printed with the kind permissions of the copyright holders. Article III is not included in the electronic version of the summary, as it is not published yet. The summary contains some unpublished results.

LIST OF ABBREVIATIONS

α = Cronbach's alpha

ED = Emergency Department

EPRS = European Parliamentary Research Service

FAFHES = Family Functioning, Health and Social Support instrument

ICE-EFFQ = Iceland Expressive Family Functioning Questionnaire

ICF = The International Classification of Functioning, Disability and Health

ICHI = International Classification of Health Interventions

M = Mean

n = Number of cases, sample size

NWI = The National Wellness Institute

p = p-value

r = Correlation coefficient

SD = Standard Deviation

SPSS = Statistical Package for the Social Sciences

US = United States

WHO = World Health Organization

WMA = World Medical Association

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1 INTRODUCTION

The World Health Organization (WHO) defines 'older' as a person with the chronological age of 65 (WHO, 2002). In the context of employment, on average in the European Union a person is counted as old just before turning 64 (European Parliamentary Research Service – EPRS, 2014). In 2013 in Europe there were 18% of people aged ≥ 65 years, and this number will increase to 30% by 2060 (EPRS, 2014). According to Statistics Estonia, in 2017 over 19% of the Estonian population composed of older people. By comparison, in 2013, this proportion was 16% (Statistics Estonia, 2017).

As the aging of the population grows, the number of older patients with multiple chronic conditions also increases. The prevalence of chronic conditions or multimorbidity in this population is related to a number of adverse health outcomes and high health and social costs. (Suijker et al., 2017; Wang et al., 2017). The ageing population is a challenge for society and creates a need for change within the healthcare system and its organisation. An increased need for healthcare among older people is unavoidable, which furthermore increases the need for political decision-making as concerns healthcare. Thus, the need arises for healthcare sectors to develop common and sustainable strategies for older age groups to deliver more complex care. (WHO, 2015). Proactive and integrated care of older patients avoids further disabilities and improves cost-effectiveness (Suijker et al., 2017). Using special and preventive intervention, it is possible to support older people's safety in life and to improve their self-sufficiency (Ford et al., 2017). WHO has stated that there is need for a new worldwide framework in relation to the aging population. Such a framework must contain several core elements, such as equality, cohesion, conformity to healthcare needs and coordinated and targeted activities. (WHO, 2015).

The significance of different factors affecting health and illness was described in Florence Nightingale's writings in the 19th century, as she advocated that the best nursing care be provided to all in need (Nightingale, 1992). According to the International Classification of Health Interventions (ICHI), a health intervention is

“an act performed for, with or on behalf of a person or population whose purpose is to assess, improve, maintain, promote or modify health, functioning or health conditions” (WHO, 2016).

Caring for older people need to be patient- and family-centred (Smith, 2010; Johnson & Abraham, 2012). Cypress (2014) suggests creating policies for patient- and family-centred care in EDs. The families of older patients have a crucial role in the care of the older family member (Lindhardt et al., 2008; Watson, 2008). This applies to emergency department (ED) care as well, as over 20% of ED visits were composed of older people aged ≥ 65 in Belgium (Devriendt et al., 2017). It was found that older patients’ family experiences with nursing care in the ED differs from nurses’ opinions, especially in issues related to the quality of care and safety (Gallagher et al., 2014). To be able to offer the care required for older patients, ED staff need to receive special geriatric training. Likewise, the creation of a geriatric day hospital or a geriatric advisor team improves the care management of older patients and their health problems in the ED. (Deasey et al., 2016; Devriendt et al., 2017).

As older patients present in the ED for a variety of reasons and usually require a more detailed discharge plan than younger patients, the role of nursing care with this population should be reviewed (Mezey et al., 1999). The ED nurses’ responsibility is to assure the best care for older patients. The common understanding of nursing care in the ED and the relationship between nurses and families need improvement. (Gallagher et al., 2014). Moreover, the nursing role in the EDs needs to focus on supporting family members to act in such a way as to have an effect on improving other family members’ capacity and strengths (Kaakinen et al., 2010).

The family is at the centre of the older patient’s social environment and provides the basis for social support during both health and sickness (Friedman et al., 2003). The family is a system and family process refers to activities and interactions of the different aspects of this system (Kantor & Lehr, 1976). Family strategy may be defined as a directed way for achieving goals set by individuals, who are systematically connected in a socio-biological layout (Kantor & Lehr, 1976). A caring family member has an impact on the whole system (Ziemba, 2002). Family members should be actively involved in the care process during stays in the ED (Cypress, 2014).

Family roles and assumptions in taking care of older family members varies between cultures (Ziemba, 2002). For example, in the Japanese culture, the process of ageing is based on philosophical beliefs and is understood as a socially essential part of life. In that culture, taking care of an older family member is natural. (Karasawa et al., 2011). There are both risks and benefits of family caregiving of an older patient that need to be considered and taken into account when planning care (Ziemba, 2002).

There are a number of studies describing family health (Meiers & Brauer, 2008; Åstedt-Kurki et al., 2009; Harju et al., 2012) and family functioning (Trivette & Dunst, 1990; Benzein et al., 2004; Paavilainen et al., 2006; Wrzus et al., 2012; Hovick, 2014; Benzein et al., 2015; Östlund et al., 2015; Chen et al., 2016; Palmer et al., 2016; Tanninen et al., 2016), which could be seen as components of family wellness (McMahon & Fleury, 2012). However, these studies have been conducted in other clinical contexts than EDs, which shows existed research gap.

There are two main types of family social support. One is internal or within the family, where support is provided by children, spouses or siblings, and the other is external (Friedman et al., 2003). Family members, especially children have an essential role in the caregiving of their older parent (Roberto & Blieszner, 2015). There is limited literature addressing social support in relation to older patients' families and nurses in the ED (Miller & DiMatteo, 2013; Nanninga et al., 2015).

The majority of patients that visit Estonian emergency departments (EDs) consist of older people. After receiving help, older people are discharged home where family members continue to provide aftercare. All too often, after the older patient is discharged, little is known about the older patient's family situation in the ED context and how to provide support and strengthen the family to continue care at home. According to the author's best knowledge, the current topic has not been previously investigated in Estonia. The study is the first accurate research that has been undertaken to describe in detail the situation in EDs, more precisely concerning the perceptions of family wellness and social support seen from the perspective of family members and nurses in the Estonian context. The purpose of this study is to address this gap in understanding by describing the situation of older people in EDs and how family wellness and social support initiatives can be extended to their families in EDs, and to describe related associations. New comprehensive knowledge provides important information and offers several

implications for nursing practice, management, education and further research in this field.

The following chapter, which consists of a systematic review of the literature, will discuss the presence of older people and their family members in EDs in relation to family wellness, operationalised as family health, family functioning and social support.

2 BACKGROUND

Several literature searches were conducted. The first one took place during Phase I, between February and April of 2013, using the CINAHL and MEDLINE/Ovid databases. Search terms such as emergency care, nursing in emergency department, older adult, and older people or person were used (Article I). The search was repeated using the same methods from October 2016 to August 2017, covering the years 2013-2017, using CINAHL, MEDLINE, PubMed Central, ScienceDirect and the social science database ProQuest. Various combinations of the keywords were used: emergency department, family members, nursing care, older patients, family health, values, well-being, ill-being, knowledge, activities, family functioning, structural factors, relationships inside the family, relationships outside the family, family strengths, social support, psychosocial support, affirmation, concrete aid, affect (Articles II-IV, Summary). In addition, a manual search of public documents and publications on the webpages of leading worldwide health organizations such as the World Health Organization (WHO) and the World Medical Association (WMA) has been performed, using search terms as older or elderly or aged, health, family health, functioning and family functioning. Also, a search of epidemiological data using Estonian health organizations such as the Ministry of Social Affairs in the Republic of Estonia, the Estonian Health Insurance Fund and the Health Board of Estonia was undertaken between 2013 and 2017. Contemporary literature describing the international situation and directions regarding older patients and their family experiences in emergency department is cited and referred to in this Summary.

2.1 Older patients in emergency departments

In this study, an older patient in the ED is a person aged 65 or over, who is presenting in the ED because of a health problem. An older patient may arrive at

the ED with a family member or other person close to him/her (Fry et al., 2014; Fry et al., 2015). Family relationships were found to be important, especially at critical times (Paavilainen et al., 2006). According to ED nurses, the family's active participation in the care process is a valuable resource for the patient (Cypress, 2014).

The reasons for older patients seeking help in the ED can be divided into two main groups: medical or urgent and non-medical or non-urgent. Medical or urgent problems were considered to be worsening symptoms (Stein-Parbury et al., 2015), the presence of an emergency health problem (Marco et al., 2012), injuries (Rowland et al., 1990), partial or absolute functional problems, chronic conditions and polytherapy (Stein-Parbury et al., 2015).

One non-urgent reason for older patients to present in the ED was at the suggestion of the family physician (general practitioner) (Stein-Parbury et al., 2015). Another reason identified was the patient's decision to seek help in the ED, as for the patient this was an emergency situation (Unwin et al., 2016). An important non-urgent reason for an ED visit was that the ED is more available and cheaper than primary or other health care services (Unwin et al., 2016). Furthermore, older patients may present in the ED because of communication difficulties, convenience of the location or preference for a local hospital. Some of the patients had no family practitioner and were identified as patients with non-medical problems. (Marco et al., 2012). In addition, palliative care patients presented in the ED from time to time (Wright et al., 2017).

Several risks were identified as to why older patients may present in the ED. These risks were: male patients, aged ≥ 85 , and the number of various medicaments taken by the older patient. Also, ED visits and hospital stays during the previous 12 months and the patient's place of residence being located within 10 km from the ED were identified as risks for an ED visit. In addition, low levels of education, being widowed, being alone and functional disability increased ED utilization by older patients. (Sona et al., 2011).

The presence of family members in the ED was important for patients, families and nurses. This facilitated the transmitting of information needed to create the full clinical picture, helping older patients while in the ED and making therapeutic decisions. (Fry et al., 2015). Despite that, communication with the family was found to be one of the most stressful demands for ED nurses, especially in dealing with feelings of deep distress caused by loss and pain relief interventions (Johnston

et al., 2016). Both families and older patients reported that insufficient information was provided regarding the ED process and upcoming procedures (Stein-Parbury et al., 2015). In addition, family members identified that the older patient's worsening health condition, ED burden by other patients, long waiting time and uncomfortable waiting room were frustrating to them (Shah et al., 2015).

Older patients who were triaged as non-urgent or had a low triage score on admission to the ED were discharged home after receiving help (Franchi et al., 2017). At the time of discharge, older patients were assessed based on an evaluation of their physical, functional, cognitive and emotional condition. There were positive improvements found between the physical and emotional condition of older patients who suffered from cognitive dysfunction evaluated at baseline. (Ballabio et al., 2008).

It was found that older patients were discharged home from the ED with insufficiently defined aftercare needs and further instructions. Also, a lack of information provided at discharge regarding continuity of care at the primary health care level was found. (Dunnion & Kelly, 2007). Accurate discharge planning, including education of the family, improved comprehension about coping issues in the home environment for the whole family (Gozdialski et al., 2012). However, previous research has established that family members' participation in discharge education was inadequately provided in the ED (Palonen et al., 2015). This education it should be provided as family members have an important role in the aftercare process at home, especially in supporting and motivating each other around care-related issues (Miller & DiMatteo, 2013). Moreover, family members experienced unpreparedness for the physical and mental challenges awaiting them in the home environment after an older patient was discharged (Hughes, 2008). These findings indicate that nurses should involve the family members of older patients in the discharge process (Slatyer et al., 2013). Results has also shown that beneficial discharge planning may improve patient's outcomes (Allen et al., 2013).

Taken together, these results suggest that older people seek help in the ED for different reasons (Marco et al., 2012; Stein-Parbury et al., 2015; Unwin et al., 2016; Wright et al., 2017). The roles of members within the family may be different, but the family can be effective in planning, decision-making and aftercare processes. Family members are important collaborative partners for nurses (Åstedt-Kurki, 1992; Åstedt-Kurki et al., 2004; Benzein et al., 2004; Magnusson & Hanson, 2005; Hemsley et al., 2008; Lindhardt et al., 2008; Watson, 2008).

2.2 Family wellness in emergency departments

The concept of ‘wellness’ is broadly applied in nursing care for older people, and closely related to wellbeing and health promotion (McMahon & Fleury, 2012). Wellness is multidimensional and refers to the conscious process of development (Table 1).

Table 1. Definitions of wellness

Definition	Author, year of publication
“a conscious, self-directed and evolving process of achieving full potential”.	The National Wellness Institute (NWI)
“a purposeful process of individual growth, integration of experience, and meaningful connection with others, reflecting personally valued goals and strengths, and resulting in being well and living values”.	McMahon & Fleury, 2012, p. 9
“the state of being in good health, especially as an actively pursued goal”.	English Oxford Living Dictionaries, Definition of wellness

In this study, family wellness in the ED is operationalised by of two main concepts: family health and family functioning.

2.2.1 Family health

In the International Classification of Health Interventions (ICHI), health intervention is defined as “an act performed for, with or on behalf of a person or population whose purpose is to assess, improve, maintain, promote or modify health, functioning or health conditions”. In the field of nursing and health care, various definitions of ‘health’ were found (Table 2). The term health refers to physical, mental and social conditions experienced during the lifetime for fruitful living (WHO, 1948; Hoyman, 1962; Åstedt-Kurki, 1992; Denham, 2003; Åstedt-Kurki et al., 2004).

Table 2. Definitions of health

Definition	Author, year of publication
Consists of physical, mental and social welfare.	Constitution of the World Health Organization (WHO), 1948
Best personal fitness for complete, productive, creative living.	Hoyman, 1962
Consists of general and individual health and its everyday experiences like feelings, knowledge and related activity.	Åstedt-Kurki, 1992
Acquired condition experienced by the family in by finding possibilities and dealing with responsibilities which they encounter during their lifetime.	Denham, 2003
Consists of feelings, related knowledge and activities.	Åstedt-Kurki et al., 2004

There have been several definitions of 'family health' proposed by nursing researchers over the years (Table 3). Family health is seen as family members' emotional and physical experiences of health, including health-related behaviors (Ziemba, 2002; Denham, 2003; Bomar, 2004; Hanson, 2005; Åstedt-Kurki et al., 2009; Kaakinen et al., 2010).

Taking care of the family's health is supported by a nursing attitude where the nurse accepts the family's point of view and explores how this stance was created (Meiers & Brauer, 2008). Dynamic family health experiences are behavioral norms that represent self-care, safety issues and accident prevention, mental health, taking care of the family, taking care of patients with different diseases and family caregiving (Denham, 2003). Throughout this thesis, the term 'family health' is used to refer to family experiences such as values, well-being, knowledge, ill-being and activities (Åstedt-Kurki et al., 2009).

Table 3. Definitions of family health

Definition	Author, year of publication
The way family members act.	Denham, 2003
More than just a summary of each family members' health.	Bomar, 2004
The changing condition of welfare, including biologic, mental, social and cultural aspects of each family member and the whole family.	Hanson, 2005
A combination of each family member's physical health.	Kaakinen et al., 2010
Consists of values, well-being, knowledge, ill-being and activities within the family.	Åstedt-Kurki et al., 2009
Is the common emotional and physical health of a whole family.	Ziemba, 2002

Family health was found as good by older patients of home care (Hautsalo et al., 2013) and by patients with prostate cancer (Harju et al., 2012). The health problems of one family member may impact overall family health (Meiers & Brauer, 2008). Those family members who were in a good health condition affected older patients' well-being (Peters et al., 2007). Family health within oncological settings was associated with several background factors such as age, level of education, employment status, number of family members' visits to the patient while he/she was at hospital, primary symptom of disease and previous hospitalizations (Harju et al., 2012).

A relatively small body of literature was found that is concerned with the family health of older patients. As the older patient is an integral part of the family, the older patient's health and its factors are described below.

Older patients sought help when needed, but some did not know what kind of services offer support and protection, and they may have experienced obstacles to health care access. Also, older patients received help from their family and people close to them. (Lafferty et al., 2013). Getting health-related support was problematic because of the lack of knowledge of where to seek help, limited resources, financial issues and the way family members and people close to older patients, as well as health care providers, react to mistreatment (Lafferty et al.,

2013). Older people find satisfaction and experiences related to access to health care services relevant for their health (Muckenhuber et al., 2013).

A poor social and financial situation may contribute to the decrease in health of older patients (Brunner et al., 2009). A study by Bos & Bos (2007) indicated that older women without earnings reported poor health. For older patients who are in poor health, access to health care services is a critical matter (Li & Tracy, 1999).

Rueda & Artazcoz (2009) explored gender inequalities in health among older patients, where older women reported a poor self-perceived health status, more than that of men. Also, older patients with only a primary education reported a poor self-perceived health condition more often than others (Rueda & Artazcoz, 2009).

In order to respond to the needs of the whole family and offer better support, nurses must take into account family values as a subarea of family health (Lindahl & Lindblad, 2013). Furthermore, a respectful attitude towards families is a crucial requirement for nurses when taking care of the family in the ED (Boltz et al., 2013).

In this study, well-being as one subarea of family health is related to fulfillment of expectations or needs and family strengths (Åstedt-Kurki et al., 2009). According to family members, having conversations with nurses promotes family well-being (Benzein et al., 2015). The well-being of older patients was improved when they had family and received support (Inder et al., 2012). A low level of well-being was associated with the presence of comorbidity and old age of the family member (Inder et al., 2012).

Ill-being as another subarea of family health could explain feelings that family members experience when one family member becomes ill (Åstedt-Kurki et al., 2009). Families confront rejection and social discrimination when one family member is ill (Larson & Corrigan, 2008).

Family members need different kinds of knowledge while they are in the ED with an older patient. This knowledge is related to health conditions, further aftercare issues and the role of the family in the recovery process (Adler et al., 2015). Moreover, family health-related conversations provided a basis for successful nurse-patient-family interaction (Östlund et al., 2015). Family members of older patients experienced these conversations to be helpful when they were freely communicating, listening and understanding each other (Dorell & Sundin, 2016). Families stated that health-related conversations strengthened perceptions,

compassion and connections between family members (Dorell et al., 2016). Adler et al. (2015) found that knowledge regarding health conditions, everyday care and the impact of illness on the family were important for family members.

Health-related activities improved the physical health of the family (Hakio et al., 2015). Family members felt that it was important to get acknowledgment from nurses that improved the capability of the family to manage life events (Dorell et al., 2016). Family members who participated in health-related activities reported good physical health (Åstedt-Kurki et al., 2009; Hakio et al., 2015).

2.2.2 Family functioning

The functioning on the individual level consists of interactions between the health condition and environmental and personal factors (WHO, 2001). Functioning can be seen as an umbrella concept indicating both sides of functioning, the positive and negative, from a biological, individual and social viewpoint (WHO, 2001). Definitions of the term ‘functioning’ are presented in Table 4.

Table 4. Definitions of functioning

Definition	Author, year
“Dynamic interaction between a person’s health condition, environmental factors and personal factors”.	World Health Organization, The International Classification of Functioning, Disability and Health (ICF), 2001.
“An umbrella term for body functions, body structures, activities and participation. It denotes the positive aspects of the interaction between an individual (with a health condition) and that individual’s contextual factors (environmental and personal factors)”.	World Health Organization, The International Classification of Functioning, Disability and Health (ICF), 2001.

The literature on family functioning described below highlights some components such as structural factors, family relationships, relationships outside the family and strengths (Paavilainen et al., 2006). Family functioning means family activities and related factors for coping in different life situations (Table 5). In this

study, family functioning is understood through the core conceptualization of functioning by Paavilainen (1998), which has been further developed and presented (Paavilainen et al., 2006; Åstedt-Kurki et al., 2009).

Table 5. Definitions of family functioning

Definition	Author, year
Family component for managing external factors impacting the family during the lifetime.	David, 1978
Refers to structural factors of the family, relationships between family members, relationships outside the family, manifestation of maltreatment, strengths of the family and risk factors of the maltreatment of the family.	Paavilainen, 1998
Related activities within the family.	Winek, 2010

There are relatively few studies in the area of family functioning of older patients. As the family is the focus of this study, family functioning and its subareas within families are described below.

Family functioning was disturbed because of emotional or behavioral concerns within the family (Palmer et al., 2016). Family-centred care was found to be crucial to strengthening family functioning and the ability to cope with illness (Raveis et al., 2010). In one study, family functioning reported by family members was found as good within cardiological settings (Paavilainen et al., 2006). In another clinical context, family members of oncology adult patients perceived family functioning, communication and the ability to express feelings at a lower level than did the patients (Dieperink et al., 2017).

Structural factors of the family as one subarea of family functioning include shared experiences, activities and family members having their own roles within the family (Paavilainen et al., 2006). Structural factors of the family affect care for the older patient (Paavilainen et al., 2006). The family's role in providing continuity of care for an older family member included providing care that responded to older patients' needs (Wongsawang et al., 2013). The relationship with a partner before one required assistance had an impact on the family member assuming the caregiver role (Roberto & Bliezner, 2015). Undefined roles of caregiving between children of the older family member caused disagreements within families (Silverstein & Giarrusso, 2010).

Family relationships refer to common interests, related feelings and connection at the mental level (Paavilainen et al., 2006), as well as the ability to manage different life situations and the family well-being (Åstedt-Kurki et al., 2009). A sense of guilt and economic matters are critical issues in relationships within the family (Rochette et al., 2009). Family members who perceived less closeness to other family members experienced more proximity to their friends and increased well-being. Likewise, family relationships were built based on the social environment (Wrzus et al., 2012). Worsened relationships within the family before caregiving of an older family member decreased the quality of caregiving (Silverstein & Giarrusso, 2010).

Relationships outside the family as another subarea of family functioning refer to social relationships (Takagi & Saito, 2015). Those older patients who had fewer social relationships than others felt lonely and unhappy (Takagi & Saito, 2015). Likewise, relationships between nurses and family members may be disturbed because of nurses' overload that impacts the quality of nursing care (Söderström et al., 2003).

Family strengths as a subarea of family functioning defines the distinctiveness of family functioning and may be characterized as the responsibility of family members to contribute to the well-being and development of other family members and to the whole family (Trivette & Dunst, 1990). Also, family strengths may be explained as a family having goals to improve in any situation, and related considerations (Trivette & Dunst, 1990). Furthermore, families have their own list of strategies for managing different life situations, which support their functioning (Trivette & Dunst, 1990). For ED nurses, it is crucial to know the level of family strengths in the families they care for, to be able to find appropriate solutions (Wagley & Newton, 2010).

2.3 Social support of the family in emergency departments

Social support refers to determined interaction between individuals that include affirmation, concrete aid and emotional support (Kahn, 1979). Throughout this study social support consists of affirmation, concrete aid and affect (Åstedt-Kurki

et al., 2009) that is supported by the ideology of Kahn (1979). Social support means relationships during family lifespan (Table 6).

Table 6. Definitions of social support

Definition	Author, year
“Is the function of the relationship”.	Cohen & Syme, 1985, p. 11
“Is a process that occurs over the life span; the nature and type of social support differs within the various family life cycle stages”.	Friedman, 1992, p. 147
“A purposeful interactive relationship between nurse and family in which the family is seen as an equal party in a permissive and approving atmosphere”.	Åstedt-Kurki et al., 2009, p. 352

Affirmation as one subarea of social support includes giving instructions for finding appropriate solutions, providing support in decision-making and strengthening the feedback process (Åstedt-Kurki et al., 2009). Those patients who were more motivated in issues related to self-care were able to manage their health problems better than that of other (Leikkola et al., 2014). The support in finding solutions and associated activities were related to level of their knowledge, wish to be involved in the care process and the previous experience of care they received (Flynn et al., 2012).

Concrete aid is another subarea of social support that can be measured by financial issues, time spent in caregiving and providing physical help (Åstedt-Kurki et al., 2009). Social support offered to patients by the family provides concrete practical aid and can also alleviate some of the stress caused by living with a disease (Miller & DiMatteo, 2013). Likewise, social support around practical and other issues can be an important and helpful tool to those families who are in a critical situation (Friedman et al., 2003).

Affect is a subarea of social support that encompasses feelings of protection, respect and moral principles (Åstedt-Kurki et al., 2009). Older patients experienced neglect when nurses did not accept their preferences (McCabe & Kennelly, 2015). Social support is relevant to health care users such as families and older patients and also to health care providers such as nurses (Themessel-Huber et al., 2007).

Limited literature was found concerning the social support and related subareas in relation to older patients' families in EDs. Social support and its relation to older patients is described in detail below.

Social support from health care providers point of view was related to better psychological health and higher use of problem solving (Yates et al., 2012). Social support networks are important components of health promotion issues at the individual and family levels (Friedman, 1992). It was found that the level of social support provided by health care professionals was lower when the ED was burdened (Mattila et al., 2010). Moreover, the level of internal family social support fluctuates due to family life cycles (Friedman et al., 2003).

Lack of self-care in older patients was associated with the need for social support, while this need was due to the decreased emotional, physical and mental condition of the patients (Kaur et al., 2015; Yli-Uotila et al., 2016a). Older patients living with family required less social support from health care providers than those who had no people close to them (Hastings et al., 2008; Lien et al., 2009). In addition, the risk of health problems increased when older patients received poor social support (Neri et al., 2012).

The level of social support available in the ED was affected by the flow of patients and overcrowding increased nurses' tasks and reduced their ability to provide social support (Mattila et al., 2010). This indicates that the availability or level of social support the families receive depends on each family's situation and needs to be provided widely at the individual level (Kaakinen et al., 2010). Older patients who arrived at the ED by ambulance received less social support than those who arrived another way (Moonesar et al., 2016). In addition, there were significant relationships between received social support and treatment adherence among patients with chronic disease (Miller & DiMatteo, 2013).

A higher perceived social support around the daily living activities of older patients can prevent the development of disease (Bozo et al., 2009). Patients may receive social support via the internet, by looking for information related to treatment, side effects and recovery (Yli-Uotila et al., 2014). However, there were obstacles to the online social support patients received that were related to individual, counselling and organizational levels (Yli-Uotila et al., 2016b). The informal support older patients received online was associated with patients' well-being. This effect on emotional well-being was greater in older patients who lived alone. (Phillips et al., 2008). Similarly, the informal support derived from mutual

friendships and social relationships promotes safety and well-being. Consistent social support received by older patients helps them to sustain self-sufficiency longer. (Dunér & Nordström, 2007). In a study conducted within adult oncology settings, family members reported receiving less support from nurses than that of adult patients reported (Dieperink et al., 2017).

2.4 Associations between family health, family functioning and social support

There are a number of studies (e.g. Cornman et al., 2003; Paavilainen et al., 2006; Hakio et al., 2015) describing associations between family health, family functioning and social support within different clinical contexts.

Family health investigated within paediatric intensive care settings established weak positive correlation with social support (Hakio et al., 2015). The older the patient, the better the health-related knowledge as a subarea of family health was, and the better the family functioning was among family members of adult patients (Paavilainen et al., 2006). Paavilainen et al. (2006) identified that the better family values were, as another subarea of family health, the better was the family functioning. Health-related behaviors or activities, other subarea of family health, was related to the level of support received from friends (Thanakwang, 2008). In addition, as another subarea of family health, the stronger the impact of an illness on the adult patient's everyday activities, the worse the family health was (Åstedt-Kurki et al., 2004).

Mothers' ratings of greater family functioning evaluated within paediatric settings were correlated with social support (Youngblut & Brooten, 2006). Concerning mental health disorders among adults, strong correlations were found between family functioning, social support and the quality of life of patients with anxiety disorder (Wang et al., 2016). It was found that the better the family structure and relationships as two subareas of family functioning were, the better the family health was reported among adult patients (Åstedt-Kurki et al., 2004). The relationship within the family of the home-cared older patient, as a subarea of family functioning, had an impact on received social support (Hautsalo et al., 2013).

In Cornman et al.'s study (2003), the social support perceived by older patients was related to their overall health. In the context of mental health disorders within adult patients, perceived social support was positively correlated with family functioning (Wang & Zhao, 2012). Support provided by the families of older patients was related to the quality of relationships within the family, as one subarea of family functioning, and had an impact on well-being as one subarea of family health (Bell & Bell, 2012). A positive association was found between the level of received social support and health among older men living in the community (Okamoto & Tanaka, 2004). Concrete aid as a subarea of social support received from nurses was related to family health in a study carried out among adult patients. It was found that the better the concrete aid, the better the family functioning (Paavilainen et al., 2006).

2.5 Summary of the literature review

The evidence presented in the previous sections suggests that older people present in the ED for different reasons, due to both medical or urgent and non-medical or non-urgent problems. Thus, older patient need to be treated according to their needs more broadly and deeply. Family members who are present in the ED with older patients need be involved in the care and discharge process, as they have an important role in continuing the care at home.

The studies presented thus far provide evidence that it is important for nurses to be aware of what family wellness entails in the ED, as well as how the families of older patients view family health and how they function while in the ED. Moreover, knowledge regarding the social situation of families is crucial for nurses to identify. The level or meaning of received support in older patients' families is disturbed for different reasons. Related knowledge can help nurses provide more supportive and family-centred care during the ED stay, and prepare the family members to care for the older patient at home. Furthermore, family members' knowledge (e.g. health and disease, nutrition) and skills (e.g. concrete aid, aftercare issues) need to be strengthened in order to ensure quality aftercare at home. The theoretical approach to older patients' family wellness and social support in an ED presented in Figure 1. Based on earlier studies it is concluded that there are

associations between family health, family functioning, social support and related subareas.

In addition, awareness of older patients and their families concerning availability of care needs improvement, so that in a critical situation they know where to find help. Access to services was found as an important issue for older patients and their families. The education of the population around the needs of older patients and their families need to be expanded.

Undoubtedly, all health and social problems, and their related care issues cannot be resolved in the ED, as this relatively short treatment time is focused on eliminating the reasons why older patients present in the ED in the first place. As family members have an essential role in caregiving to their older parents. There is a need for a comprehensive mapping of the older patients' family situation and related supports.

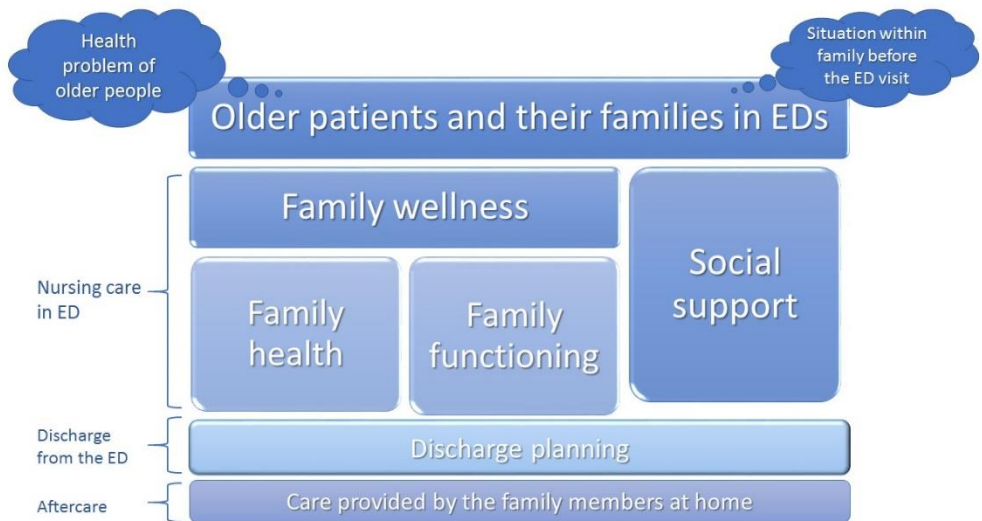


Figure 1. Theoretical approach of older patients and their family wellness and social support in emergency department

3 THE PURPOSE, AIM AND RESEARCH QUESTIONS OF THE STUDY

The purpose of this study was to describe the situation of older patients in EDs, and how family wellness initiatives and social support was received by the family in EDs, and related associations. The aim of the study was to describe the present situation in EDs and identify the basis for intervention to further develop nursing care for older patients and their families. The study was intended to strengthen the comprehensive knowledge regarding ED.

The following research questions were set:

1. Why do older people visit EDs, what are factors that influence older people's discharge from ED, and what are factors that are associated with repeat ED visits? (Article I)
2. How is older patients' family wellness evaluated in EDs? (Article II-III)
 - 2.1. How is family health evaluated in EDs? (Article II)
 - 2.2. How is family functioning evaluated in EDs? (Article III)
3. How do older patients' families receive social support in ED? (Article IV)
4. How are family health and family functioning described by the family members of older patients and nurses associated with social support received in ED? (Summary)

4 MATERIAL AND METHODS

4.1 Design

The research process was conducted between 2012 and 2017 and was biphasic (Table 7). In Phase I, a qualitative descriptive literature review of the empirical studies on older patients in ED was carried out, which aimed to describe older people's experiences in emergency departments. A comprehensive literature search was carried out from February to April 2013, covering the years 2002-2012. An inductive content analysis was performed, and 25 studies were identified and critically evaluated. The findings of the review extended knowledge of the related topic area, and served as a basis for further empirical study. The findings of the literature review are presented and published in Article I.

In Phase II, a quantitative descriptive cross-sectional empirical study among family members of older patients and nurses in Estonian EDs was carried out. This aimed to examine family health, family functioning, social support and related associations from the family members' (n = 111) and nurses' (n = 93) points of view. The data were collected from February to June 2014 using questionnaires. Both the FAFHES and ICE-EFFQ instruments were modified for ED settings, translated and piloted in 2013. Descriptive statistics were used for analyzing the demographic data, and appropriate methods were used for the analyzing associations. The results are presented and published in Articles II-IV and in the Summary.

Table 7. Phases of the study, period, purposes and related articles

Phase	Period (years)	Purposes	Article
I Literature review	February-April 2013	To describe older patients in ED.	I
II Empirical study	February 2014-May 2017	To describe family health in EDs evaluated by family members of older patients and nurses and to identify related associations.	II
		To describe family functioning in EDs evaluated by family members of older patients and nurses and to identify related associations.	III
	May-September 2017	To describe social support received by the family of older patients in ED and to identify associations.	IV
		To describe family wellness and social support in EDs and to identify associations between family health, family functioning and social support received by families.	Summary

4.2 Settings, sample, participants

In Phase I (February-April 2013), a search of the articles published between 2002 and 2012, catalogued in two electronic databases (CINAHL and MEDLINE/Ovid), was carried out. Articles were included if they were based on an original study, published in English, focused on people aged ≥ 65 years, and described the reasons for the ED visit and the factors that impact discharge and affect readmission to ED. A total of 154 articles were identified, of which 59 citations were excluded because of the publishing date (before 2002) and seven because they were non-English publications. Twenty-four abstracts were excluded because of literature reviews, editorial issues and the fact that study participants were younger than 65 years old. Thirty-nine articles were excluded because of the older people discussed were not discharged back home after the ED visit (Article I, Figure 1). The analyzed literature consisted of 25 studies that were mostly conducted in the US and Europe.

In Phase II (2014-2017), the population was composed of 1,500 family members of older patients. This was based on the number of patients discharged home from six Estonian EDs during 12-month period. Approximately 80,000 people (aged ≥ 16) visited the ED of one regional hospital in 2014, where 4,500 (6%) of the patients arrived by ambulance. That makes approximately 220 patients per day (24 hours). The majority of these patients were discharged home from the ED, and only about 15% of them were admitted to the hospital. Fifteen thousand older patients were discharged home during a six-month period from 4 out of 6 involved hospitals. It was assumed that half of the older patients presented in the ED with a family member. In one general hospital 229 older patients were discharged home from the ED after receiving medical help during a one-month period. The number of patients who seek help in EDs is increasing every year.

With an alpha of 0.05 and a power of 0.8, the calculation gave 91+91 for the approximated sample size. For convenience, the final sample size would be about 100 + 100 answers. It was assumed that only about 50% of the family members would answer the questionnaire, as not all older patients present in ED with an accompanying person. Therefore, it was decided that 200 questionnaires for family members would be given to each central hospital, and 300 questionnaires would be distributed to each regional hospital. Regional hospitals are the largest health care providers, compared to central hospitals. There are three regional hospitals in Estonia, one of them a hospital for children. In the phase of the ED involvement process, two central hospitals abandoned participation in the study. The administrative staff of those two EDs justified this decision by claiming that family members were not allowed to stay beside the older patient and/or the instrument was not feasible to use in ED settings. In total, the EDs of two central and two regional hospitals located in different counties in Estonia were involved in the study.

All family members of home-discharged older patients that presented in the ED were invited to participate (February-May 2014). The inclusion criteria were: being a family member of a home-discharged older patient (determined by the older patient), aged ≥ 18 , presenting in the ED with an older patient, participating on a voluntary basis and able to complete the questionnaire in the Estonian or Russian language. The family member had an opportunity to choose in which language he/she preferred to answer. The background factors of family members are presented in Article II, Table 2, and were described in Articles III-IV. A total of

111 (30%) of the family members' questionnaires were returned to the researcher. The clinically significant difference in the FAFHES instrument used in these mean values for family members was set to 0.5 based on the discussions in the research group.

All nurses working in four EDs were invited to participate in this study (during June 2014). Initially it was planned that a total of 179 nurses would be asked to participate from six hospitals (no research permission was received from two hospitals). The final number of nurses working in EDs of involved hospitals was 150, while approximately 600 nurses were registered as emergency medicine specialists in the whole country of Estonia (Health Board, 2014). The inclusion criteria for nurses were: being a registered nurse, working in the ED where data was collected, participating on a voluntary basis and being able to complete the questionnaire in the Estonian or Russian language. Chief nurses and managers were not involved in the study. The number participating nurses working in regional hospitals varied from 40 to 50, and in central hospitals from 18 to 42. The background factors of the ED nurses were presented in Article II, Table 2, and were described in Articles III-IV. A total of 93 (65%) of nurses' completed questionnaires were returned to the researcher. The clinically significant difference in the FAFHES instrument used in this study's mean values for nurses was set to 0.5. The sample size was sufficient for calculating statistically significant differences between means of the family members and nurses.

4.3 Instruments

In Phase I, a critical appraisal of the eligible articles was carried out based on the methodology for scoping reviews published by the Joanna Briggs Institute (The Joanna Briggs Institute, 2015). In Phase II, the English version of the family nursing instrument Family Functioning, Family Health and Social Support (FAFHES) was used for the data collection from family members and nurses (Åstedt-Kurki et al., 2009). The instrument was previously validated using the Finnish original version within cardiological settings (Åstedt-Kurki et al., 2009), oncological settings (Harju et al., 2012) and for the home care of older patients in

Finland (Hautsalo et al., 2013). Also, the FAFHES instrument was tested for Danish outpatients with heart failure (Østergaard et al., 2017).

The FAFHES was modified and used for the first time in ED settings. The original variant of the family health scale of FAFHES consisted of 22 items evaluating family values (5), wellbeing (4), ill-being (5), knowledge (5) and health-related activities (3). The original scale of the instrument was maintained; however, during the modification process one item from the subarea of well-being was excluded as it did not fit the context. The family functioning scale of the family nursing instrument FAFHES was comprised of 19 items describing structural factors (4), family relationships (7), relationships outside the family (5) and family strengths (3). No items were excluded from the original scale of the published instrument (Åstedt-Kurki et al., 2009). Social support was evaluated using 20 items, describing affirmation (7), concrete aid (5) and affect (8). One item from the subarea of affirmation in the original version was rearranged to the subarea describing concrete aid (Table 8). Permission to use and modify FAFHES was obtained and received from all copyright holders in November 2012. The modified instrument was not presented in this study or published in the Articles II-IV because of copyright issues.

The Iceland Expressive Family Functioning Questionnaire (ICE-EFFQ) of the unpublished instrument (Svavarsdóttir & Sveinbjarnardóttir, 2011) was used as a criterion instrument for measuring family functioning in the ED from the family members' and nurses' points of view. The questionnaire was developed to gather information related to acute and chronic illnesses. At the time of the data collection for this study, the ICE-EFFQ had been used for family members with a recent illness (Sveinbjarnardóttir et al., 2012). The instrument was later used among Danish and Australian oncology adult patients and their family members (Dieperink et al., 2017).

The family functioning scale consisted of 17 items measuring expressing emotions (4), collaboration and problem-solving (5), communication (4), and behavior (4) (Table 8). Permission to use and modify the ICE-EFFQ was obtained and received from the copyright holder in November 2012. The modified instrument was not presented in this study or published in the Article III because of copyright issues.

In the questionnaire for family members, there were 10 items describing background (gender, age, marital status, social status, highest education,

relationship to the older patient, living with the older patient, their own health condition at the time of data collection, their need for help in daily life and the time they spent in the ED). Family members were asked to describe the background of the older patients (gender, age, marital status, highest education, help in daily life before the ED visit, health problems of older patients visiting the ED, day of the week of the ED visit, type of arrival at the ED and previous visits to the ED because of the same health problem during 12-month period). Additionally, the functional status of the older patient at discharge was used as a background factor, evaluated by Rowland's et al. (1990) published instrument. The original form of the seven questions was maintained. Family members were asked to answer whether they agreed or disagreed with the questions, by using a "Yes" or "No" response. Respondents were asked to evaluate whether the older patient (1) used walking aids or needed assistance when walking or transferring, (2) needed assistance to dress after treatment, (3) relied on someone to collect his/her pension, (4) relied on someone to do his/her grocery shopping, (5) attended a day centre, (6) received meals on wheels and (7) had home help.

For nurses, there 15 items describing background (gender, age, marital status, highest professional education, work experience in health care, emergency medicine and in the current ED, number of nurses working in ED, number of older patients visiting the ED during one shift, main reasons of older patients for ED visits, day of the week when older patients mostly visit the ED, older patients' need for help in daily life before the ED visits, time family members spent in the ED with older patients and way of arriving to the ED). The functional status of the older patient at discharge was used as a background factor, evaluated by Rowland's et al. (1990) published instrument. Nurses had the opportunity to answer using the options: "Yes", "No" or "Do not know".

All decisions concerning the content of the instruments used in this study were made based on an expert panel of professors ($n = 4$) and the researcher. The panel was necessary because the instruments were modified for use in a new context. All instruments were translated from English to Estonian and Russian, and back-translated to English by official philologists in the languages, using monolingual and bilingual tests (Beaton et al., 2000; Maneesriwongul & Dixon, 2004).

The final version of the paper format questionnaire consisted of 77 items. Twenty-one items in the family health scale of FAFHES measured health-related issues in the ED. The family functioning scale of FAFHES consisted of 19 items

and 17 items on the ICE-EFFQ criterion instrument, and 20 items measured social support in the ED by using the FAFHES scale of social support.

The instruments were piloted for evaluating their feasibility in three EDs of Estonian general hospitals, in August-September 2013. Cronbach's alpha of FAFHES for the family members varied between the scales 0.6-0.9, and for nurses 0.8-0.9. For the criterion instrument, Cronbach's alpha for family members was over 0.9 and for nurses was between 0.8-0.9. Of 30 family members, 23% responded ($n = 7$) and of 45 nurses, 40% responded ($n = 18$). After the pilot study, only a few minor rewordings were performed, and according to nurses' suggestions, an additional option for answering as "Do not know" when evaluating the functional status of the older patient at discharge (Rowland et al., 1990) was added for the nurses' questionnaire. Scales of the instruments (FAFHES, ICE-EFFQ) and most of the subscales had values of Cronbach alphas >0.6 . Family health scale was considered as internally consistent, despite its few low values (≥ 0.5) for family members for the subarea of values, ill-being and activities. Cronbach's alphas and other features of the final instrument used in this study are presented in Table 8 and in the Articles II-IV.

Table 8. The dimensions, variables, number of items, Cronbach's alphas (α) and scales of the instruments used for measuring family health, family functioning and social support.

Dimension	Variable	Items	α for the family member	α for the nurses	Scale	Instrument		
Family Health	Values	21	0.66	0.90	Likert 1= definitely disagree, 6=definitely agree	FAFHES (Åstedt-Kurki et al., 2009)		
	Wellbeing	5	0.30	0.81				
	Ill-being	3	0.73	0.73				
	Knowledge	5	0.32	0.58				
	Activities	5	0.60	0.84				
Family functioning	Relationships inside the family	3	0.12	0.63	Likert 1= definitely disagree, 6=definitely agree	FAFHES (Åstedt-Kurki et al., 2009)		
	Relationships outside the family	19	0.95	0.89				
	Family strengths	4	0.85	0.57				
	Expressing emotions	7	0.84	0.76				
	Collaboration and problem-solving	5	0.91	0.89				
	Communication	3	0.75	0.68				
	Behavior	17	0.97	0.94			Likert 1= definitely disagree, 6=definitely agree	Criterion instrument: ICE-EFFQ (Svavarsdóttir et al., 2011)
		4	0.92	0.81				
		5	0.92	0.88				
		4	0.92	0.83				
Social support		4	0.93	0.91	Likert 1= definitely disagree, 6=definitely agree	FAFHES (Åstedt-Kurki et al., 2009)		
	Affirmation	20	0.90	0.95				
	Concrete aid	6	0.92	0.86				
	Affect	6	0.61	0.91				
		8	0.88	0.93				

4.4 Data collection

In Phase I (February-April 2013), the search of the literature was carried out using the CINAHL and MEDLINE/Ovid databases with the combination of the following keywords: old* OR adul* OR pers* AND emerg* AND nurs*. The literature search was multistage and articles were considered as eligible if (1) published between 2002 and 2012 (n = 95), (2) written in English (n = 147), (3) reported on original research and focused on older people aged ≥ 65 years (n = 127), (4) described ED utilization by older patients aged 65 and over (n = 64) and (5) appropriate results clearly and accurately reported (n = 25). As a result, 25

studies addressed the main focus of the literature review and were accepted for analysis (Article I, Fig. 1).

In Phase II, the data collection was biphasic, to avoid influencing the results between the health care users and providers. Firstly, evaluations of family members of older patients who were discharged home from the ED were collected between February and June 2014. Questionnaires in paper format were distributed among family members by the ED nurses or the researcher. The family member was defined as someone accompanying an older patient to the ED and was determined by the older patients themselves. The researcher or ED nurse asked family members to participate in a research study. General information about the study (aim, data collection) was briefly presented. A sealed envelope was given to each family member, containing another envelope with the postmark and address of the researcher, and a questionnaire with an accompanying letter for participants (Appendix 1).

The questionnaires were sealed inside envelopes. Family members were asked to send the completed questionnaire back to the researcher by post within 14 days of the discharge of the older patient from the ED to the home. Returning the questionnaires by post was free for the respondents. They were asked to describe their view of how the family responded to the visit and their general experience of family health during their ED stay. The family members could choose whether to answer the questionnaire in Estonian or Russian. The researcher did not ask any recognizable personal data of the respondents. The respondents were able to contact the researcher if needed. The researcher's contact information was presented in the introductory accompanying letter for participants (Appendix 1, Appendix 2). Posters were put up in the waiting rooms of the EDs throughout the whole data collection period; these contained information related to the study in both Estonian and Russian, so every visitor to the ED could obtain information related to the data collection process. The researcher spent a total of 141 hours delivering the questionnaires in four EDs. The number of questionnaires delivered to family members was 367 and 111 were returned (30%).

After all family members had returned the completed questionnaires, evaluations of the ED nurses were collected. The chief nurse or contact person for each ED informed the researcher of the exact number of nurses working in the department, as well as the mother tongue of each. Nurses could choose whether to complete the questionnaire in Estonian or Russian. The researcher organized a

total of eight meetings in the EDs of the involved hospitals, where study-related issues were introduced and explained. The aim of the meetings was to motivate and encourage the nurses' participation. Questionnaires were delivered directly in envelopes by the researcher. Nurses were asked to complete the questionnaire, place it in the envelope and seal. The completed questionnaires in sealed envelopes were collected in a special collecting box in the ED. Contact persons had agreed to motivate the nurses to participate in the study. E-mails were sent by the researcher to the contact persons one week after the questionnaires were delivered. These were forwarded by the contact persons to the nurses to remind them to complete the questionnaire. The total number of questionnaires delivered to the nurses was 144. Initially it was planned that a total of 150 nurses would participate, as that number was presented by the chief nurses or managers. However, because the data collection from the nurses coincided with summer holidays, five of the nurses were officially on holiday and one nurse withdrew from the participation. Ninety-three (65%) completed questionnaires were returned (Appendix 2).

4.5 Data analysis

In Phase I, inductive content analysis (Burns & Grove, 2001; White & Marsh, 2006; Elo & Kyngäs, 2008) was used for analyzing the studies retrieved. Information from each publication including names of the authors, year and country of the published articles, sample, design and key findings concerning the study's purpose and research questions were presented (Article I, Table 1). Firstly, areas of similar content were grouped together and subcategories and categories were formed. Categories were named based on listed factors (Burns & Grove, 2001; White & Marsh, 2006). Both subcategories and categories were discussed and validated together in cooperation with a panel of professors until consensus was reached (Polit & Beck, 2008). A total of 11 categories and related subcategories describing the reasons why older people visit EDs were identified and summarized (Article I, Table 2). In regard to the factors affecting the discharge of older patients from EDs, five categories and related subcategories are presented in Article I, Table 3. There were six categories and related subcategories that described the reasons for ED readmission (Article I, Table 4).

In Phase II, the data from the returned questionnaires were inserted into Excel sheets, separately for family members and for nurses. After that, the data were transferred into Statistical Package for the Social Sciences 23.0 (SPSS Statistics) software and edited by Data Editor. Data were analyzed by descriptive statistics (frequency distribution, mean, standard, deviation, confidence interval, minimum, maximum), and inferential statistics (Student's t-test and one-way analysis of variance (ANOVA), Bonferroni correction, Mann–Whitney U-test and the Kruskal–Wallis tests, Spearman's correlation, linear regression and Cronbach's alpha). Statistical significance was defined as p-values lower than 0.05 (Polgar & Thomas, 2000; Polit & Beck, 2008). All analyses for the Articles II-IV were conducted using the SPSS 23.0 software (IBM SPSS Statistics). When analyzing the functional status of older patients at discharge (Rowland et al., 1990), the risk for readmission was considered if the questions elicited four or more positive answers out of seven.

In answering the last study question, linear regression analysis was used for identifying the linear relationship between family wellness and social support, as well as relationship between family health, family functioning and social support for both family members and nurses (Summary). A previously conducted correlation analysis showed that only a few subareas of family health, family functioning and social support were important. Interpretation of the strength of relationships depended on the essence of the variables (Polit & Beck, 2006). The closer r was to 1 or -1 , the stronger the relationship was considered. In this study, values of r greater than 0.5 were considered as strong, positive relationship, from 0.5 to 0.3 moderate, and value under the 0.3 weak or very weak. The + or – do not have an impact on strength. (Polgar & Thomas, 2000; Burns & Grove, 2001; Polit & Beck, 2006; Dupont, 2009; Gerrish & Lacey, 2010). Analyses were conducted using the R Project for Statistical Computing.

4.6 Ethical considerations

The study was based and performed according to ethical principles (WMA Declaration of Helsinki, 2013). The study process is described in the Summary and Articles I-IV. The authors of used instruments and publications are referred.

In Phase I, the literature review required no ethical approval. Nevertheless, the literature review was conducted according to important basic ethical principles: (1) the articles used in the review were carefully searched in the databases approved by the University of Tampere, Finland, (2) only original studies were eligible that included an abstract and enabled full text, (3) only peer-reviewed articles were chosen and (4) only articles describing the ethical considerations in performing a study were selected for the literature review. The selection of the articles used in the literature review and an accurate evaluation of the selected papers was performed by the researcher and professors (The Joanna Briggs Institute, 2015). A total of 25 chosen articles were accordingly referenced in the figure and tables of the literature review. The selected studies and related findings evaluated in the literature review are summarized in Article I, Table 1.

In Phase II, study was carried out according to “Ethical Principles for Medical Research Involving Human Subjects” (WMA Declaration of Helsinki, 2013). Ethical approval (nr 193) was obtained and received from Tallinn Medical Research Ethics Committee. Study permissions were gathered from the managers of all EDs or appropriate clinics of participating hospitals. Permissions to use the FAFHES and ICE-EFFQ instruments were asked and received from the copyright holders of the instruments by the researcher. FAFHES and ICE-EFFQ were validated previously, but not in ED settings. The instrument that Rowland et al. (1990) developed for evaluating the functional status of older patients at discharge has been published.

Written consent to was not required, based on the WMA Declaration of Helsinki (2013). Consent was assumed when study participants returned completed questionnaires back to the researcher (WMA Declaration of Helsinki, 2013; Polit & Beck, 2008). Information about the study participation were ensured by the information presented in the first page of the questionnaire (Appendix 1, Appendix 2). Additional explanations were given orally when participants were involved in the study and by informative posters placed in the EDs of each hospital. The

purpose of the study and the content of the questionnaire were explained orally and in the poster. In addition, criteria for participation and what would constitute participant involvement was described. Information was provided that participation was on a voluntary basis and that anonymity was guaranteed. The researcher's mobile number, email address, home address, and address of the University of Tampere were provided. The researcher received one letter from a family member with the returned questionnaire by post, which was not related to the study.

During the entire research process, there were no conflicts of interests declared between the researcher and co-authors (Polit & Beck, 2008) (Articles I-IV). The study funding was provided by the University of Tampere, which is independent of the involved Estonian hospitals. The research plan included both Phase I and Phase II, which were first accepted by the supervising University of Tampere and the administration of four hospitals.

5 RESULTS

5.1 Older people in emergency departments

In Phase I, the literature review consisted of studies describing older people in the ED, reasons for ED visit, those factors that impact the discharge and those that affect readmission to the ED (Article 1, Table 1). The content analysis revealed many reasons for ED visits: health-related (e.g. cardiovascular, mental health, internal diseases); poor health status; time factor impact (e.g. certain time of the year, of the day); and accidents (Article 1, Table 2).

The literature review identified and described five factors that impact discharge from the ED (Article 1, Table 3). Discharge from the ED was influenced by unsolved problems, health risks of older people and aftercare information the patient received at discharge. In addition, the medicines prescribed and the type of residence before ED admission had an impact on discharge ED.

There were several factors that influenced readmissions, including older people's sociodemographic factors, social issues and health problems. Other factors were that older people needed systematic health assessment, they were frequent health care service users and the care provided previously was inadequate (Article 1, Table 4).

5.2 Older patients' family wellness in emergency departments

5.2.1 Older patients' family health in emergency departments

Based on the empirical Phase II, older patients' family health operationalised as part of family wellness in the ED was found to be at a moderate level from the family members' and nurses' viewpoints. Family health was examined within five subareas: values, well-being, ill-being, knowledge and activities (Article II). In all these subareas, both family members and nurses reported family health in the ED as moderate. However, different background factors were associated with family health. According to family members, family health was positively related to living together with a family member. Also for family members, family health was associated with the education of the older patient. Family health was deemed better within families where the older parent had university education, rather than only basic school education. Family health was associated with living together with the older patient. Family health was reported better within families where the older patient lived together with the family (Article II, Table 5). No differences on family health described by family members and nurses were found (Article II, Table 4; Summary Table 9).

Family values as one subarea of family health were associated with the family member's relationship to the older patient. Children of older patients reported better values than other family members. There were associations between health-related values as a subarea of family health and family members' need for help in daily life before the ED visit. Family values were reported better in the families where family members needed help in daily life from each other before the ED (Article II, Table 5). According to nurses, family values were associated with cardiovascular problems of older patients who appeared in the ED. In addition, nurses evaluated family values to be more important for those families whose older patient arrived to the ED by ambulance, rather than another way.

For family members, there was an association between well-being, as another subarea of family health, and previous ED visits during a 12-month period because of the same health problem of the older patient. The well-being of the family whose older patient did not visit the ED during the prior 12 months because of the same health problem was better than those who visited (Article II, Table 5).

There were associations among issues related to the subarea of ill-being and living together with family members. For family members who lived together with an older patient, issues related to ill-being were more important than for others. Ill-being was associated with the method of arrival at the ED when older patients arrived by ambulance. For family members whose older patients arrived to the ED by ambulance, ill-being was more important than for others. The subarea of ill-being was also associated with a previous visit to the ED for the same health problem during the previous 12 months. For those family members whose older patients visited the ED for the same problem during the previous 12 months, worries related to ill-being were more important than for others. Also, the need of older patients to have help from family members was associated with the subarea of ill-being (Article II, Table 5). Nurses evaluated issues related to ill-being more important for those families who needed help in daily life from other family members.

For family members, health-related knowledge as a subarea of family health was associated with living together with a family member. Families who lived together with older patients reported better knowledge than those who lived separately. Health-related knowledge was reported better by those families who needed help from other family members in daily life before the ED visit. In families where the older patient had a university education, health-related knowledge was better than in those where the older patient had only a basic school education (Article II, Table 5). No associations between health-related knowledge and nurses' descriptions were found.

According to family members, living together with family members was associated with the subarea of activities. Families who lived together with the older patient reported health-related activities to be better than with those families who lived separately from the older patient. For family members who reported their health condition to be poor, health-related activities were a more important issue than for family members in good health condition. Family members who needed help in daily life from other family members reported activities to be more important than others. For family members, the subarea of activities was associated with the time they spent in the ED. For families who spent over three hours in the ED, activities were a more important issue than for those who spent up to three hours in the ED. There was an association between activities and previous visits to the ED for the same health problem during the previous 12 months. For those

families who visited the ED during the previous 12 months, activities were more important to them than to others. According to family members, those older patients who often needed help from family members reported health-related activities to be more important than for others (Article II, Table 5). No significant associations between activities and nurses' descriptions were found.

5.2.2 Older patients' family functioning in emergency departments

Based on Phase II, older patients' family functioning operationalised as another part of family wellness in ED was found to be at a moderate level from the family members' and nurses' perspective. Family functioning evaluated using FAFHES was examined within four subareas: structural factors, family relationships, relationships outside the family and family strengths (Article III, Table 1). Family functioning evaluated using ICE-EFFQ as the criterion instrument was examined also within four subareas: expressing emotions, collaboration and problem-solving, communication and behavior from the family members' and nurses' points of view. Family members and nurses evaluated family functioning in the ED while using the ICE-EFFQ to be moderate (Article III, Table 2). In all subareas of the instruments, both family members and nurses reported family functioning in the ED as moderate. There were background factors associated with family functioning. Family members and nurses had different views on family functioning in the ED, and statistically significant differences were found. From the family members' point of view the family functioned better than the nurses thought the family functioned in the ED. Likewise, according to family members, structural factors and relationships within the family, as two subareas of family functioning, were better than nurses thought (Table 9).

According to family members, structural factors of the family were associated with the family member's social status as "not working". Those family members who were not working at the time of data collection were found to have better family structural factors. Family strengths were associated with older patients receiving help from family members before the ED visit. Family strengths were better for those family members where older patients received help from family members before the ED visit. No associations between nurses' background factors and family functioning were identified. There was a strong relationship between both instruments for both groups (family members' $r = 0.79$, nurses' $r = 0.65$).

5.3 Older patients' family social support received in emergency departments

In Phase II, the level of social support in the ED was found to be moderate from the family members' and nurses' points of view. Social support evaluated in the ED was examined within three subareas: (1) affirmation, (2) concrete aid and (3) affect (Article IV). In all subareas, both family members and nurses reported family social support in the ED as moderate.

There were statistically significant differences between the social support described by family members and nurses. Family members reported that the family received a lower level of social support than the nurses reported they had provided. Similarly, concrete aid, affirmation and affect were reported by the nurses to be better than family members described (Article IV, Table 2; Summary, Table 9).

Several background factors were associated with social support. According to nurses, there was a weak negative correlation between affirmation as a subarea of social support and the age of nurses. The implication is that nurses who were in the older age group provided less social support than younger nurses. Based on the nurses' descriptions, a negative correlation was found between the number of nurses working in the ED and the level of social support the family received. In other words, better social support was not related to a greater number of nurses working in the ED. From the family members' point of view, no associations were found.

Table 9. Family health, family functioning and social support from family members' of older patients and nurses' points of view

	Family members M (SD)	Nurses M (SD)	<i>p</i> -value
Family health	3.75 (0.88)	3.74 (0.74)	0.639
Values	3.90 (1.19)	3.63 (0.96)	0.059
Well-being	3.50 (1.16)	3.44 (0.92)	0.639
Ill-being	3.71 (1.00)	3.70 (0.98)	0.978
Knowledge	3.84 (1.08)	3.98 (1.01)	0.335
Activities	3.65 (1.09)	3.86 (1.04)	0.148
Family functioning	3.92 (1.11)	3.40 (0.79)	0.007
Structural factors	3.86 (1.26)	3.39 (0.96)	0.004
Relationships inside the family	3.99 (1.21)	3.15 (0.89)	<0.001
Relationships outside the family	3.87 (1.12)	3.62 (0.89)	0.078
Family strengths	3.91 (1.25)	3.65 (1.01)	0.091
Social support	3.58 (0.97)	3.93 (0.83)	0.006
Affirmation	3.68 (1.11)	4.02 (0.94)	0.016
Concrete aid	3.44 (1.09)	3.79 (0.94)	0.013
Affect	3.62 (1.13)	3.97 (0.97)	0.016

5.4 Associations between family health, family functioning and social support received by families in emergency departments

There were several correlations identified between family health, family functioning and social support for both family members and nurses. For the family members, a weak positive correlation was found between family wellness and social support ($r = 0.33$) received in the ED (Table 10). Also, for the family members, a strong positive correlation was found between family health and family functioning ($r = 0.79$). The better the family health was found to be, the better the family functioning was reported. A medium strong positive correlation was found between family health and social support ($r = 0.59$). This finding suggests that the better the family health was found to be, the better the social support received by

the family was reported. A similar result was found between family functioning and social support ($r = 0.51$); the better the family functioning was found to be, the better the social support received by the family was reported.

According to nurses, there was weak positive correlation between family wellness and social support ($r = 0.41$) in the ED. For the nurses, a strong positive correlation was found between family health and family functioning ($r = 0.64$) (Table 10). The better the family health was found to be, the better the family functioning was reported. A medium strong positive correlation was found between family health and social support ($r = 0.58$), meaning that the better the family health was found to be, the better the social support was reported. In addition, a medium strong correlation was found between family functioning and social support ($r = 0.54$). The better the family functioning was found to be, the better the social support was reported.

Table 10. Associations between family health, family functioning and social support received by families in emergency departments

	Family functioning for family members <i>r*</i>	Social support for family members <i>r*</i>	Family functioning for nurses <i>r*</i>	Social support for nurses <i>r*</i>
Family health	0.79	0.59	0.64	0.58
Family functioning		0.51		0.54
Family wellness		0.33		0.41

*Correlation coefficient = r (Polgar & Thomas, 2000).

6 DISCUSSION

6.1 Validity and reliability of the study

In Phase I, a systematic literature review described what is known about the reasons for ED visits, the factors that impact discharge and the factors that are affect readmissions among older people. The validity of the study was ensured using detailed search strategy for eligible articles in the core electronic databases for nurse researchers, both inclusion and exclusion criteria and a systematic assessment of the quality of the original publications (Polit & Beck, 2008; The Joanna Briggs Institute, 2014). Reliability was ensured by carrying out a search of the literature that was based on the set research questions (Polit & Beck, 2008). (Article I).

In Phase II, an empirical study was conducted in three regions of Estonia, in two regional (one of them was the University Hospital) and two central hospitals. The adult emergency departments of the hospitals were involved in the study. The data collection was biphasic and conducted during five-month period in all four hospitals. All the instruments were applied at the same time using one questionnaire (Articles II-IV).

The validity of the empirical phase was ensured using the FAFHES instrument, which was previously psychometrically tested. The validity was increased by the assessment of the study results by the research panel of professors and the biostatistician. In both phases of the study, tight cooperation between nursing research, biostatistician and emergency care nursing clinical practice was ensured.

Because the items of the questionnaire were modified for the ED settings and originality was maintained, it was agreed that face validity was not expedient in this study. Nevertheless, a theoretical structure and relationships between the subareas of family health, family functioning and social support of modified questionnaire needs to be reviewed and observed in contemporary literature (Polit & Beck, 2008).

The content validity was performed. The instruments were translated from English into Estonian and Russian and were back-translated by using both monolingual and bilingual tests (Beaton et al., 2000; Maneesriwongul & Dixon,

2004; Polit & Beck, 2008). The questionnaire was piloted for the feasibility of the study and its use in a new context. Questionnaires were previously validated and reported good psychometric soundness (Rowland et al., 1990; Polit & Beck, 2008; Åstedt-Kurki et al., 2009; Sveinbjarnardottir et al., 2012). One item measuring well-being as a component of family health was excluded from the original instrument of FAFHES to strengthen the content validity (Article II). As well, one item describing affirmation as a component of social support in the original version of FAFHES was reassigned to the subarea describing concrete aid (Article IV). All the instruments used in this study have accurate scales, which ensured that the general information describing family health, family functioning and social support (FAFHES, ICE-EFFQ) and the functional status of older patients at discharge (Rowland et al., 1990) in Estonia was able to be collected. Both instruments are suitable for use in ED settings. The statistical analyses used to answer the research questions are presented (Articles II-IV, Summary).

Despite the logic and consistency of the study phases, there are several critical observations concerning the research process and study design. The subareas of family health, family functioning and social support need to be developed and validated further to ensure FAFHES validity in EDs. One of the weaknesses of this study design was that construct validity was not performed. A confirmatory factor analysis is needed to determine whether the data fit a hypothesized measurement model (Polit & Beck, 2008). Also, criterion validity should be considered that measures how well one measure predicts an outcome for another measure. Construct validity of the modified questionnaire should be studied further. Face validity of the FAFHES was not determined, as it was performed earlier (Åstedt-Kurki et al., 2009).

Data of the periodic number of older patients visiting EDs and the number of nurses working in EDs were used as additional help in defining the sample size. FAFHES was previously validated in different settings and among other samples, but not within ED settings. In this study, fewer family members participated than nurses (Articles II-IV). The response rate was agreed as acceptable and representative (family members 30%, $n = 111$; nurses 65%, $n = 93$). In 2014, 18% of the Estonian population were older people aged ≥ 65 ($n = 241,783$). Consequently, participants of this study represent only 4.6% of the older population. That is quite small representability. One possible explanation for this is that some older patients presented in the ED alone, while this study aimed to

describe the view of those older patients who appeared in the ED with a family member. Similarly, a relatively low response rate of family members may be explained as due to their fear that their responses could affect future treatment of the older patient. However, family members were informed that their personal data was not asked in the questionnaire, and the researcher was unable to contact respondents later. Another factor may be that nursing research and related data collection from family members is not very common in Estonian hospitals. In addition, the questionnaire used in this study consisted of 77 items in total and may have been too long for the family members. It may also be that family members were afraid to answer by post, as the home address of the sender would be visible and could be linked to the older patient who appeared in the ED. The confidentiality of the family members was guaranteed, but not their anonymity as they were asked to add a home address. However, the response rate of family members would not be greater if medical reports of older patients were used for this study, as medical reports do not include all the required data current study was based on. Gathered response rate of nurses may be most of all due to the planned holidays nursing staff were at the time of data collection. However, the sample should be reviewed in further quantitative studies, since the larger the sample, the smaller the sampling error and the better the statistical conclusion validity (Polit & Beck, 2008).

The reliability of the instruments was tested by calculating coefficient alphas for each scale and related subscales for both family members and nurses (Polit & Beck, 2008) and presented in Table 8 (Articles II-IV). The values of Cronbach's alphas in the study were acceptable for both family members and nurses and showed mainly good psychometric soundness in the Estonian ED context. There were a few low values under ≥ 0.5 for family members in the subareas of the FAFHES family health scale for values, ill-being and health-related activities. Further development of these subareas including 13 items should be done.

The researcher has long clinical experience in the ED and previous knowledge of the working environment and about the healthcare system as a whole. This contributes to the researcher's understanding of the topic investigated. At first sight, a reader may wonder whether this has had an effect on the results. Thus, a quantitative study design and instrument, rather than a qualitative approach, with, for example, an interview, was used to ensure a more objective data collection. Further, data analysis and interpretation of the results are based on the experiences

of family members and nurses on returned and completed questionnaires. All of this confirms that the researcher's preunderstanding of the topic has been taken into consideration.

6.2 Discussion on findings

This study explored concurrently why older people visit the emergency department and how family wellness was experienced and social support received by the family in the ED from the family members' and nurses' points of view.

Based on the literature, older people present in the ED for different reasons, both medical and non-medical (Rowland et al., 1990; Sona et al., 2011; Marco et al., 2012; Fry et al, 2015; Stein-Parburry et al., 2015; Unwin et al., 2016; Wright et al., 2017). The clinical meaning of the emergency department is "provision of medical and surgical care to patients arriving at the hospital in need of immediate care" (MedTerms Dictionary, 2016). According to this definition, it can be concluded that the use of EDs is not always purposeful. The organization of health care within health care providers should be reviewed, by defining clearly whether non-medical or non-urgent conditions should be treated first at the primary health care level or at the EDs. If every condition is treated at the ED, there is a for overcrowding. This is supported from the study of Erenler et al.'s (2014) that EDs are overcrowded because of patients presenting in ED with non-urgent complaints.

There are several factors that influence older people's discharge from the ED, which need to be considered at discharge, especially regarding aftercare instructions. Saidinejad & Zorc (2014) identified similar factors regarding aftercare instructions, as commonly the information given in the ED at discharge was more of a verbal nature than detailed information provided in a medical report. Likewise, Taylor & Cameron (2000) suggested that patients discharged home after receiving help in the ED must be instructed thoroughly regarding aftercare issues. In addition, a study by Leikkola et al. (2014) found that comprehensive information offered at discharge concerning aftercare treatment improved older patients' recovery and coping at home.

Social problems, along with the need for systematic assessment and the inadequacy of care provided were factors associated with readmissions. The findings of this study are supported by Naughton et al.'s (2012) study, which found

that geriatric assessment and identifying social problems in the ED at discharge affect older patients' health outcomes. Themessel-Huber et al. (2007) highlighted that in order to reduce older patients' length of stay in the hospital and to avoid readmissions, thorough care and further instructions should be given at discharge. Likewise, there is a need for guidelines that will promote the best care of older patients in ED (Carpenter et al., 2014). In this study, older patients were at risk for readmission when evaluated functional status at discharge. In addition, in this study 30% of the older patients appeared in the ED over the previous 12 months and often for the same health problem. This implies that older patients may have been discharged home with unresolved problems that may produce further readmissions.

Family wellness and social support in the ED were found to be moderate as reported by both groups family members and nurses (Article II-IV). However, the meaning of 'moderate' may be different for every family, depending on their situation. We do not actually know whether this moderate level was considered as a reason to visit the ED, or if it was the natural state for those older patients and families who appeared in ED at the time of data collection. ED nurses may be used to facing this moderate level in everyday nursing practice, as they worked with families positioned at this level for many years. Quantitatively, it may have the same meaning, but in real life and nursing practice it may be a different issue.

One group of older patients who appeared in the ED did not have people close to them or any family member. Almost half of the family members identified themselves as other than friend or spouse or child (Article II, Table 2). Older patients have a number of disabilities including functional impairment, which complicate self-sufficiency (Heikkinen, 2003; Samaras et al., 2010) and require extra help. It is assumed that the group of older patients who presented in the ED alone require more health care services than those who have family members. This assumption was confirmed by Lien et al. (2009), who found that older patients with a partner or person close to them required less support by health care providers than those who live alone.

All the older patients who participated in this study were discharged home. As well, they all presented in ED for the same issue in the previous 12 months. This suggests that maybe the discharge process was poorly managed. This result is supported by the study of Palonen et al. (2015), which focused on the important issue of discharge readiness and its associations with the education provided at

discharge to older patients and their families. Approximately half of the family members did not receive discharge education. Likewise, discharge education was associated with discharge readiness for family members and older patients.

Family wellness was described at a moderate level in the ED by family members and nurses. As described above, it is unknown whether this moderate level is natural for those families who appeared in the ED or not. In this study, family wellness consisted of two main components: family health and family functioning. In earlier studies carried out in other clinical settings as cardiological (Åstedt-Kurki et al., 2004) and oncological (Harju et al., 2012), family health was reported as good. Regrettably, previous studies regarding family health in the ED is missing, which makes it difficult to compare the results.

For family members, family health was better when family members lived together with the older patient. Family members depend on each other at the emotional, physical and economic levels (Kaakinen et al., 2010), and any negative event may affect the whole family (Åstedt-Kurki et al., 2009). Caregivers' health and its impact on the provision of care need to be considered.

Family functioning as another component of wellness was reported as moderate by both family members and nurses. Those family members who were not working at the time of data collection were found to have better structural factors for their family. Structural factors as a subarea of family functioning include sharing experiences, proceeding according to instructions given in the ED and having defined roles within the family (Paavilainen et al., 2006). The ability to work explains the good health condition of a family member who is providing economic security and is able take care of others (Cancian & Ree, 2009), and it strengthens family relationships in general and the structural factors of the family.

When older patients received help from family members in daily life before the ED visit, family strengths as a subarea of family functioning were better. This result may be justified by the finding that when family members live together and help each other, and have shared hobbies and interests, they are stronger as a result (Paavilainen et al., 2006). Family strengths become crucial when families are in a critical situation, as they present in the ED. However, all these older patients were discharged back home.

On one hand, it is positive that families thought they family functioned better in a critical situation than the nurses reported. On the other hand, it may be assumed that nurses underestimate families and their relationships when one of the family

members is ill. Family functioning may be disturbed if there are emotional problems within the family (Palmer et al., 2016), which families may be face with one of the family members in the ED. It is important to remember that structural factors affect caregiving of the older patient (Paavilainen et al., 2006), since the as family's role is to provide aftercare of the older patient at home (Wongsawang et al., 2013). Also, close relationships within the family improve the well-being of the whole family (Wrzus et al., 2012). It is suggested that the situation within the family, especially structural factors and internal relationships, should be better evaluated by nurses in EDs.

The family members perceived the level of social support the family received during the older patient's ED stay at the moderate level, the same as nurses rated the social support provided for families. Nurses reported that they had offered social support to families of older patients at a higher level than family members reported they had received such support. This finding may be due to the study design, such that the answers of family members and nurses do not match. One reason for this could be that family members were asked to describe their situation during the ED stay, while nurses were asked to think about the latest older patient and family in their care. Moreover, these findings show that there are differences between the opinions of health care users and health care providers. Perhaps nurses did not take into account all the social needs or underestimated the family who presented in the ED. Whether these differing opinions were due to a lack of time or lack of knowledge about how to measure social needs is unknown. Nursing care in the ED needs to be more supportive and family-centred, with the related interpersonal knowledge and skills, which will give the nurses the opportunity to freely perform (Johnson & Abraham, 2012).

Results of the study identified associations between family wellness and social support for both family members and nurses. From the viewpoint of both family members' and nurses', the better the family health was found to be, the better the family functioning that was reported. These results are supported by the findings that emerged earlier between the subareas of family health and the subareas of family functioning, as reported by the family members of adult patients, which confirm that if the family health and its components are good, the family functioning and related subareas are good too (Åstedt-Kurki et al., 2004; Paavilainen et al., 2006). For both family members and nurses, family health was associated with the social support received by the family. This means that the

better the family health was found to be the better the social support received by the family was reported. The findings of this study are supported by earlier studies where family health was found to be associated with social support within paediatric settings (Hakio et al., 2015) and among older patients (Cornman et al., 2003).

From the family members' and nurses' perspectives, the family functioning was associated with social support in this way, such that the better family functioning was found to be, the better the social support received by the family was reported. This outcome is supported by the study of Youngblut & Brooten (2006), which identified that greater family functioning was correlated with social support. Within the mental health context, family functioning was positively correlated with perceived social support (Wang & Zhao, 2012). Strong correlations between family functioning and social support were also identified by Wang et al. (2016). An earlier study found, that social support perceived by older patients was related to health (Cornman et al., 2003). These findings help us to understand that there are associations between family health and family functioning or family wellness and social support, and if one component of the family is disturbed, others are influenced.

The support of family wellness and social support in the ED needs more research in the nursing field. From the clinical point of view, a moderate level is rather alarming and risky and highlights the need for interventions. The viewpoints of family members and nurses on family health, family functioning and social support in the ED were different, but overall, they were at the same moderate level. However, we should highlight that a moderate level does not necessarily mean that there is a need for improvement in the care of older people and their families in EDs. This study has been the first of its kind and further investigations are needed to make general conclusions and to get a deeper understanding. Also, we may question the relative short stay of the patients in the ED and the degree to which the results received reflect family wellness and social support during the patients' stay at the ED or rather on a more general family level.

7 CONCLUSIONS

The current study was the first research carried out to describe older people in the ED and the family wellness and social support of the family of home-discharged older patients in an Estonian context. This research extends our knowledge of why older people visit the ED, and what factors may impact discharge and readmission to the ED. The findings provide a thorough summary of knowledge reflecting on the importance of adequate discharge planning of older patients and related instruments that may help nurses to assess all the risks that may impact the discharge of older patients and the further aftercare provided by family members.

The study presents new, relevant information about the level of family wellness and support, and related associations, which is the largest contribution of the study. Family wellness and social support of the family were found to be moderate in EDs from the viewpoint of family members and nurses. Despite the fact that both family members and nurses reported this moderate level, there were differences between the groups when they evaluated family functioning and social support in the ED. These results direct attention to the fact that there is a need for improvement in the nursing care of older patients and their families in the ED.

The findings of this study suggest that the instruments used are suitable for evaluating family health, family functioning and social support in EDs from the point of view of family members and nurses. However, further testing of the FAFHES scale of family health for family members as modified for ED settings should be considered.

In this study, the situation regarding those older patients who presented in the ED with a family member was described. It is important to investigate whether the older patients who live alone are more or less independent or self-sufficient and how they manage compared to others who live together with family. In addition, the situation at the ED should be reviewed over time.

8 IMPLICATIONS FOR FUTURE

This study offers several implications for nursing practice, management and nursing education, as well as suggestions for further research.

Implications for nursing practice:

- The nursing care provided for older patients and their families in the ED should be more supportive and family-centred by preparing families to take care of the older patients in the home environment. In cases where the older patient has a family, it is crucial to involve them in the nursing care and discharge process in order to improve health outcomes and maintain family wellness.
- Since one-third of older people are readmitted to the ED, one important practical implication is that there is a need for further methods that can help to improve care for chronic conditions in older people (e.g. geriatric assessment or risk assessment of older patients), to improve family wellness and social support provided in the ED (e.g. a nursing checklist for evaluating the level of family wellness and social support at discharge) and to reduce the rate of readmissions (e.g. thorough discharge planning).
- While the older patients who participated in this study were discharged home, it is important to have more information about these families in order to find the best ways to guarantee continuity of care. Since medical data is digitalized, e-health or digital health should be developed in a way that enables primary care physicians and other specialists to promptly access the appropriate data and ensure proper aftercare.

Implications for management:

- While 84% of ED nurses reported that their highest professional education was as a registered nurse, the competence of nurses working in EDs should be reviewed. Managers should support nurses'

continuing education in order to ensure quality nursing care is provided in EDs.

- The role of the ED nurse manager is to create a supportive environment for patients, families and staff. Adequate nursing staff planning and integrating an evidence-based approach may improve supporting the older patients' family in the ED.
- The creation of specialized geriatric EDs or subunits should be considered, as it was revealed from the literature that specialized geriatric EDs may improve treatment of older patients in the ED.

Implications for nursing education:

- As the majority of ED visits involve older people and one-third of them come back to the ED, it is important to prepare nurses to take care of older patients and their families by promoting a better understanding of the chronic conditions that affect the whole family. It would be important to open a specialization in geriatric nursing that is focused on advanced nursing practice for older people, including health promotion and preventive activities.
- The family-centred nursing care approach should be integrated into nursing education and continuing education programs, in order to ensure a basis for evidence-based knowledge and its further implementation to practice.
- In Estonia, more nurses should be educated according to the national specialization training program. This offers in-depth knowledge and further allows them to work as specialists in emergency medicine (ED, ambulance) and in intensive care.

This research has elicited many questions in need of further investigation. The findings suggest that this topic is a fruitful area for further research of the following nature:

- In this study, family wellness was operationalised by two main concepts: family health and family functioning. This needs further examination and conceptual analysis.

- This study was the first of its kind and the findings should be interpreted before any further conclusions are reached.
- More research using the longitudinal study design should be undertaken to describe the situation in one and/or different EDs and explore improvements and disadvantages over time.
- Further studies need to be carried out in order to validate the FAFHES instrument in ED settings, especially for evaluating family members' viewpoints.
- Further research should be undertaken to explore the experiences of nurses regarding taking care of the older patient's family in the ED, in order to receive more information on the current situation. Nursing care could be improved based on the findings.
- Future research should concentrate on the investigation of both groups of older patients who visit EDs: older patients who live alone or do not have any family member and those who live with family, in order to determine how they cope at home after ED discharge. The need for further intervention may emerge based on such research.

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APPENDICES

Appendix 1. Introductory accompanying letter for family members

Dear Respondent,

The aim of this study is to get knowledge how family functioning and health is experienced and supported by family members of older patient after their closest one is discharged from emergency department's (ED) to continue care at home. This study is part of doctoral dissertation. The permission to the study has been given by the Tallinn Ethical Commission.

Please answer the 97 items of the FAFHES questionnaire (Astedt-Kurki *et al.* 2009) so that the answers would reflect Your views of the matters of received care in ED and further preparedness for home care. Your answers are very important knowledge of a subject, which has not been studied much. Answering is voluntary, but with answering You help to develop the nursing care in emergency department.

The results will be published whereas the respondents' anonymity is guaranteed. Please answer this questionnaire during one week after Your older family member have been discharged from ED. Close Your answer into the envelope with postmark and drop it into the nearest post box or office. Returning has been paid.

I appreciate Your participation in this study and Your opinions. I will be happy to answer Your questions and give more information upon Your request, my email is Jekaterina.Steinmiller@uta.fi and telephone number +372 XXX

The study is supervised by Professor Tarja Suominen (PhD, University of Tampere) and Adjunct Professor Pirkko Routasalo (PhD, University of Helsinki).

Appendix 2. Introductory accompanying letter for nurses

Dear, Nurse!

The aim of this study is to get knowledge how family health and functioning is understood by emergency department (ED) nurses and how they offer social support for family members of older patients during they ED visit and how family members are prepared for discharge and continue care at home. This study is part of doctoral dissertation. The permission to the study has been given by the Tallinn Ethical Commission.

Please answer the 97 items of the questionnaire so that the answers would reflect Your views about the latest older patient and his/her family You has met and took care of. Your answers are very important knowledge of a subject, which has not been studied much. Answering is voluntary, but with answering You help to develop the nursing care in emergency department.

The results will be published whereas the respondents' anonymity is guaranteed. Please answer this questionnaire after older person with family member have been discharged from ED. Please return the completed questionnaire in the special box at the department.

I appreciate Your participation in this study and Your opinions. I will be happy to answer Your questions and give more information upon Your request, my email is Jekaterina.Steinmiller@uta.fi and telephone number +372 XXX

The study is supervised by Professor Tarja Suominen (PhD, University of Tampere) and Adjunct Professor Pirkko Routasalo (PhD, University of Helsinki).

9 ORIGINAL PUBLICATIONS

Older people in the emergency department: a literature review

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Submitted for publication: 1 November 2013

Accepted for publication: 17 June 2014

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ROUTASALO P., SUOMINEN T. & ŠTEINMILLER J. (2015) Older people in the emergency department: a literature review. *International Journal of Older People Nursing* 10, 284–305. doi: 10.1111/opn.12090

Background. Emergency departments (EDs) play a unique role in healthcare systems throughout the world by providing acute interventions for older patients with acute/emergency and multiple health problems. The aim of this review was to identify studies that focused on older patients admitted to EDs and to determine the reasons for the visits.

Design and methods. The literature review was based on a comprehensive search of electronic databases. Inclusion criteria were original research written in English; published 2002–2012; focused on older people; reasons for ED visit; and factors that affect the discharge process and those associated with a repeat ED visit. Other literature reviews and studies unrelated to the ED context, and studies examining patients aged ≥ 65 years, were excluded. Content analysis was performed. Twenty-five studies were identified and critically evaluated.

Results. The highest proportion of older people visited the ED because of multiple health conditions. The reasons for the visits were cardiovascular, mental health, musculoskeletal and abdominal conditions; adverse drug reactions; dermatological, neurological and respiratory conditions; poor health status; accidents; and the influence of time factors such as time of day, week or season. Factors that affected the discharge process were unresolved problems, health risk identification, aftercare instructions, medication prescribed at discharge and patient's residence before ED admission. Factors associated with repeat ED visits were sociodemographic characteristics, social problems, health problems, need for systematic health assessment, healthcare service use and inadequacy of care provided.

Conclusions. The current review showed that older people are the main population visiting EDs; important factors required for planning and providing nursing care for older people in EDs were identified. More research is needed to determine how EDs support older people and their families.

Implications for practice. The findings of the current review identified that older people visit ED quite often because of different reasons. Discharge process and repeat visits may be influenced by various factors. To ensure quality nursing care in ED nurses need to be aware why do older people visit the ED, what factors may influence discharge and what factors are associated with repeat ED visits.

Key words: discharge process, older people in emergency department, readmission, reasons for visit, review

What does this research add to existing knowledge in gerontology?

- Current knowledge is important when developing care for older people who visit emergency departments (EDs). Nurses must take into account patients' personal needs and possible health risks. Comprehensive health assessment of older patients provides an opportunity for nurses to provide patient-centred care, may prevent unplanned readmissions and may improve the management of the care process in the ED.

What are the implications of this new knowledge for nursing care with older people?

- Using knowledge about a patient's health risks, reasons for visits and factors influencing readmissions, related nursing care and the discharge process from the EDs can be improved and become more effective for older people.

How could the findings be used to influence policy or practice or research or education?

- The findings of the current review may contribute to new guidelines for procedures to help reduce repeat visits, aid development of clinical practice that optimises costs and improves cooperation with community care, and help nurses get a better understanding of older people's needs attending EDs.

Introduction

In most Western countries, people live longer and more healthily than ever before. Many also live relatively free of disability well into old age. The percentage of people aged 65 years and over in European countries has been forecast to increase from 14% in 2010 to 25% in 2050 (World Health Organization, 2012). Disabilities associated with old age are also associated with risk factors such as age-related diseases, functional limitations and unhealthy behaviours (Heikkinen, 2003). This implies that older people experiencing acute and

complex health problems will seek the emergency services (Samaras *et al.*, 2010).

Emergency departments (EDs) play a unique role in healthcare systems worldwide (Hwang *et al.*, 2006; Hwang & Morrison, 2007). They provide acute interventions to patients with acute/emergency health problems (Byrne *et al.*, 2010). Older people use ED services more frequently, are admitted more often, have longer ED stays (sometimes 50% longer) and are readmitted to the ED after discharge twice as often as the rest of population (Prendergast *et al.*, 2007; Samaras *et al.*, 2010). A visit to the ED may be associated with increased risk of acute infection (Samaras *et al.*, 2010), which is a greater health risk for older, disabled people.

In the USA, EDs designed specially for older people are becoming more common. Patients visiting geriatric EDs report increased satisfaction and have improved relationships with primary care providers. Moreover, the ED staff report enhanced well-being and job satisfaction (Kelley *et al.*, 2011). ED staff should be well educated about caring for older patients, and each member needs particular personal qualities and social skills to work effectively with them (Kihlgren *et al.*, 2006). This is a topic that has not been well studied or recently summarised.

This literature review examined studies of older people as patients in the ED, their reasons for visiting the ED, factors that affect the discharge process and factors associated with returning to the ED.

Research questions

The following research questions were addressed in the current literature review:

- 1 Why do older people visit the ED?
- 2 What factors influence older people's discharge from ED?
- 3 What factors are associated with repeat ED visits?

Methods

A search of articles published between 2002 and 2012, catalogued in two electronic databases (CINAHL and MEDLINE/Ovid), was conducted. The following search terms were used: emergency care, nursing in emergency department, older adult, and older people or person. These terms were subsequently combined using the Boolean terms

Table 1 Summary of studies examining older people in ED

Study's author(s), year, country	Sample	Design	Reasons for ED visits	Factors that influence discharge from the ED	Factors associated with repeat ED visits
Graf <i>et al.</i> (2012), Switzerland	75 and over (<i>n</i> = 345)	Historical cohort study	Orthopaedic problem or a trauma (30%), a cardiac pathology (25%) or a psychiatric illness (12%)	Performance of the ISAR and TRST tools to predict unplanned readmission	Readmission diagnoses same as the initial ones. Readmitted patients had always more comorbidities than those who were not readmitted. Functional dependence. Men were more readmitted than women. Recurrence situation: Readmission rates 25%, 38%, 49% and 60% at 1, 3, 6 and 12 months. The rate of repeat outpatient ED use was higher among patients with high-frequency outpatient ED use, high-frequency PCP (primary care physician) use and high hospital use. Approximately one-third of the sample had at least 1 previous outpatient ED visit in the 12 months before the index ED visit. Recurrence situation: readmission rates 22% after 1 month and 32% after 6 months.
Horney <i>et al.</i> (2012), USA	65 and over (<i>n</i> = 308)	Retrospective cohort study	Chronic kidney disease (20%), diabetes mellitus (29%), chronic obstructive pulmonary disorder (22%), coronary artery disease (36%), congestive heart failure (23%), hypertension, stroke, cancer (including skin cancer) (33%), arthritis (52%), dementia (10%), osteoporosis (17.5%), Parkinson's disease (2%)	Medication prescribed at discharge (acetaminophen and oxycodone, ciprofloxacin, ibuprofen, oxycodone, acetaminophen and hydrocodone)	
Rosted <i>et al.</i> (2012), Denmark	70 and over (<i>n</i> = 150)	Prospective descriptive pilot study	A total of 73% of the older people were female, 68% lived alone, 32% had depressive symptoms, 59% were cognitively impaired, and 19% were physically impaired	Model for structured nursing assessment and intervention (ISAR 2) for older people at risk of adverse outcome in an ED. Eighty-five per cent had at least one unresolved problem at discharge: physical problems (pain, incontinence and loss of weight) (39%), problems of insufficiency (help from community services and social isolation) (37%), medical problems (COPD, ischaemic heart disease, diabetes, Alzheimer's diseases or other diagnosis of dementia) (32%). Problems relating to changes in mobility, use of walking aids and risk of falls (23%).	

Table 1. Continued

Study's author(s), year, country	Sample	Design	Reasons for ED visits	Factors that influence discharge from the ED	Factors associated with repeat ED visits
Spector <i>et al.</i> (2012), USA	65 and over (<i>n</i> = 208 193)	Retrospective cohort study	Injuries, 76% related to a fall and 70% female	Not described	Age of patient. About 1 in 7 older patients with an injury-related admission were readmitted in 30 days (13.7%). Severe injuries had higher predicted readmission rates. Patients discharged to nursing homes or home health care had higher readmission rates compared with patients discharged to the community. Most frequent reasons for a 30-day readmissions occurrence: pneumonia (7%), heart failure (4%), septicemia 4%, urinary tract infection (4%), gastrointestinal problem (3%) or bleeding (3%), nutritional-related or metabolic issue (2.9%), intracranial bleeding or cerebral infarction (2%), arrhythmia (2%) Not described
Quach <i>et al.</i> (2012), Canada	65 and over (<i>n</i> = 1269)	Cohort study	Impaired mobility (including falls and fractures), neurological and non-infectious gastrointestinal problems, and skin, soft tissue and cardiovascular complaints accounted for over 70% of visits. 40% described health as poor or fair.	Not described	
Hastings <i>et al.</i> (2011), USA	65 and over (<i>n</i> = 92)	Prospective, cohort study	Nearly 1 in 3 patients needed help with at least one functional task of daily living.	Patient not understanding key portions of their discharge information: cause of the problem (21%), self-care instructions (16%), how long symptoms would last (63%), return precautions (56%), medication purpose (4%), frequency (4%), duration (11%) and potential side effects (41%), how soon to see outpatient physician (28%), did not get all the information needed from physicians and nurses (16%)	Patients did not understand the ED diagnosis and expected course of illness. Recurrence situation: readmission rates within 14 days of discharge, 23% had returned at least once, and within 90 days, 42%.

Table 1. Continued

Study's author(s), year, country	Sample	Design	Reasons for ED visits	Factors that influence discharge from the ED	Factors associated with repeat ED visits
Hastings <i>et al.</i> (2010), USA	65 and over (<i>n</i> = 308)	Retrospective review	Belonging to the group having highest PCP visits (primary care provider) members of this class also had significantly more outpatient ED visits. High users had certain chronic conditions: coronary artery disease, hypertension, cancer, Parkinson's disease, dementia (25%), congestive heart failure, chronic kidney disease. Low users (35%) were more likely to be female and had fewer chronic health conditions relative to the overall sample. A total of 60.8% of patients were female presented with accident (includes fall), shortness of breath, chest pain, altered level of consciousness, abdominal pain, cramps, spasms.	Not described	Not described.
LaMantia <i>et al.</i> (2010), USA	75 and over (<i>n</i> = 3079)	Retrospective study		Not described	Returning to ED within 30 days were associated with a general viral infection or complaining of stomach or abdominal pain; allergy (5%), epistaxis (3%), abdominal problem (over 5%), infection of skin of hand, arm or finger (6%), foot or toe swelling (8%), need for tube insertion (3%), accident (1%) as well as hypertension, leg or hip fracture.
Naughton <i>et al.</i> (2010), Ireland	65 and over (<i>n</i> = 306)	Structured questionnaire	Not described	Not described	Independent risk factors for a repeat ED visit were previous hospital admission, anxiety and being part of a vulnerable social network. Thirty-seven per cent of patients in the repeat ED visit group were significantly more likely to have previous hospital admissions and were nearly twice as likely to be admitted to hospital on this occasion. The highest proportion of repeat attendees presented with cardiac (14%) or respiratory (14%) conditions and patients in the vulnerable network category. Falls, infections, genitourinary and gastrointestinal complaints (10%). Factors predicting re-attendance at ED were predominantly related to physical and psychological health. Inadequate transitional care between hospital and community.

Table 1. Continued

Study's author(s), year, country	Sample	Design	Reasons for ED visits	Factors that influence discharge from the ED	Factors associated with repeat ED visits
Caterino <i>et al.</i> (2009), USA	65 and over ($n = 935$) derivation cohort, $n = 2015$ validation cohort	Secondary analysis of two prospective cohort Studies (prospective cohort study)	Pneumonia (35%), coronary artery disease (31%), diabetes mellitus (32%) and one organ failure (71%). Almost 80% were in low risk for death (0 or 1 of 5).	Not described	Not described
Gangavati <i>et al.</i> (2009), USA	65 and over ($n = 404$)	Retrospective cohort study	Falls, head trauma, ICH (intracranial haemorrhage), included acute subdural haemorrhage (68%), epidural haemorrhage (2%), traumatic subarachnoid haemorrhages (15%), intraparenchymal haemorrhages (15%). Residence (home vs nursing home or assisted-living facility) and head trauma were significantly associated with ICH. Location of the fall in patients with ICH was predominantly at home (64%). Other haemorrhage-associated falls (21%) occurred at locations outside of the home (doctor's office, mall, bar, road) and 11% at a nursing home.	Not described	Not described
Helldén <i>et al.</i> (2009), Sweden	65 and over ($n = 154$)	Retrospective study	One-third of ADRs (adverse drug reactions) were related to impaired renal function. The most common ADRs were vertigo and/or orthostatic hypotension, which contributed to falls and fractures in five patients, bleeding and/or anaemia in four patients and confusion or oversedation in three patients. Women with ADRs were significantly older than women without ADRs.	Statistically significant increase in the number of drugs being used at discharge compared with admission for all patients	Not described
Olivier <i>et al.</i> (2009), France	65 and over with ADR ($n = 66$), without ADR ($n = 723$)	Prospective study	The most important factors associated with ADRs were the number of drugs being taken, self-medication, use of antithrombotics and use of antibacterial drugs. Exposure to drugs for acid-related disorders was associated with a low risk of ADRs.	Not described	Not described

Table 1. Continued

Study's author(s), year, country	Sample	Design	Reasons for ED visits	Factors that influence discharge from the ED	Factors associated with repeat ED visits
Stevens <i>et al.</i> (2009), USA	65 and over (<i>n</i> = 3932)	Surveillance data of injuries treated in hospital emergency departments (Eds)	ADRs followed by metabolic (20%), neurological (18%), and cardiovascular disorders (17%); renal insufficiency (ADR resulted from a drug–drug interaction (20%); analgesics, NSAIDs, psycholeptics and antithrombotics); self-medication presented with ADRs (4%). Estimated 47312 older adult fall injuries in the USA ED, 2001–2006. Approximately 87% of the injuries were associated with walkers, 12% with canes and 0.4% with both (the most frequent parts of the body injured were the lower trunk and head or neck); the most prevalent injuries were fractures and contusions or abrasions. A larger proportion of women suffered injuries associated with walkers than men (78% vs. 22%); 60% at home, 16% at nursing homes. Approximately 8% of injuries involved walkers and 13% involved canes in public places. Approximately 2% of walker injuries involved falls on stairs or steps.	Not described	Not described
Crilly <i>et al.</i> (2008), Australia	65 and over (<i>n</i> = 6208)	Retrospective cohort study	Cardiac diagnoses were mostly represented in both groups (ACFR – aged care facility resident 21% and non-ACFR 31%), followed by respiratory and orthopaedic problems. Compared to non-ACFRs, ACFRs comprised significantly higher proportions of admission (77% vs. 61%). Actualisation based on time arrival in ACFR and non-ACFR group (07:00–15:29), day of the week (Monday was most busy for non-ACFR and Friday for ACFR) and season of the year (during winter, both groups presented often).	Compared to non-ACFRs, ACFRs stayed significantly longer in-hospital	Compared to non-ACFRs, ACFRs comprised significantly higher proportions of ED re-presentation (66% vs. 52%) and hospital readmission. Australian Triage Scale (ATS) number 3 was used in both ED visitor groups.

Table 1. Continued

Study's author(s), year, country	Sample	Design	Reasons for ED visits	Factors that influence discharge from the ED	Factors associated with repeat ED visits
Gray and Walker (2008), UK	65 and over (<i>n</i> = 999)	Routinely collected data compared with a historical comparison group from the local ED	Difficulty in breathing – 76%, of those 55% – chest infection. Falls – 51%, of those 50% – head injuries.	Not described	ECPs (emergency care practitioners) reduce readmissions with difficulty in breathing by 30% at 28 days and falls admissions by 17% at 28 days relative to the ED 'initial contact'.
Hastings <i>et al.</i> (2008), USA	65 and over (<i>n</i> = 1851)	Secondary analysis of data from the Medicare Current Beneficiary Survey	Frailty according to DAI (deficit accumulation index) of a possible maximum of 44 the number of deficits ranged from 0 to 36.	The frailest participants were at greater risk of adverse outcomes after ED discharge than those who were least frail	DAI (deficit accumulation index). Repeat visit was associated with the same problem, recent outpatient ED visit. Patients with adverse outcomes within 30 days after discharge from the ED. No association was detected between degree of frailty and repeat outpatient ED visits within 30 days.
Lee <i>et al.</i> (2008), Canada	65 and over (<i>n</i> = 788)	Prospective, observational study	Difficulty in walking (36%).	Not described	Moderate predictive performance (the Triage Risk Stratification Tool (TRST)). Nineteen per cent patients experienced the composite endpoint of return to the ED or hospital admission by 30 days.
Salvi <i>et al.</i> (2008), Italy	65 and over (<i>n</i> = 200)	Prospective observational cohort	Acute coronary syndromes (31.5%) and heart failure were more frequent in the GED (conventional ED). Transient ischaemic attack (6%) or stroke and exacerbation of chronic obstructive pulmonary disease (COPD) were more frequent in GED (geriatric ED) as well as non-trauma illness, relapse and complications of multiple chronic conditions.	Not described.	Comorbidity was a moderate risk factor for 6-month and frequent ED return, whereas female sex was a strong risk factor only for 6-month ED return. Disability and dementia (cognitive impairment) reduced the probability of frequent ED visits. Late (6-month) ED return was recorded for 46.5% patients, and 12% had three or more ED revisits, meeting the definition of frequent users.
Moons <i>et al.</i> (2007), Belgium	65 and over (<i>n</i> = 83)	Longitudinal study	Trauma (25%), followed by cardiac (16%) and neurological (16%) problems 54% of the respondents were women.	Not described	Readmission rates were 10%, 15.8% and 32% after 14, 30 and 90 days. When using three or more positive answers as the cut-off scores, the Rowland questionnaire proved to be the most accurate predictive tool with a sensitivity of 88%, specificity of 72% and negative predictive value of 98% at 14 days after discharge.

Table 1. Continued

Study's author(s), year, country	Sample	Design	Reasons for ED visits	Factors that influence discharge from the ED	Factors associated with repeat ED visits
Rurhs <i>et al.</i> (2005), UK	65 and over (<i>n</i> = 43)	Retrospective case note study	Self-harm by overdose (84%) of medication (56% benzodiazepines and 44% non-opioid analgesics), as well as hanging/asphyxia, car exhaust fumes, cutting or piercing, starvings; psychiatric disorders (psychotic symptoms (81%), previous self-harm episodes (31%)). Nineteen per cent were noted to have consumed alcohol during the DSH. There were more women and widows.	Not described	Not described
Rutschmann <i>et al.</i> (2005), Switzerland	65 and over (<i>n</i> = 253)	Exploratory observational study	An acute medical problem was identified in 51% of patients. Infections (24%) (mostly pneumonia), cardiovascular problems (14%) (congestive heart failure and ischaemic heart disease), neurological problems (9%) (stroke), delirium, anaemia, acute renal failure, cirrhosis, minor trauma and fractures, arthritis, hyperosmolar diabetic decompensation, hypoglycaemia, hyponatraemia, uncontrolled pain. Sixty per cent were female.	Based on discharge diagnosis, clinical presentation and vital signs measurement, 33 (26%) should have been triaged in a higher category. Biopsychosocial comorbidities – indicators represent chronic conditions that were not always previously identified but altogether explained the difficulties to maintain the patients at home. Discharge diagnosis of older patients 'home care impossible' and acute medical problems were cardiovascular (14%), pulmonary (5%), digestive (7%), neurological (9%), infectious (24%).	Not described
Downing and Wilson (2005), UK	65 and over (<i>n</i> = 514 420)	Descriptive study	Injuries (33%), cardiac conditions (10%) ('pain in throat and chest' and 'angina pectoris'), gastrointestinal conditions (8%), respiratory conditions (7%), infectious diseases (7%), musculoskeletal conditions (4,5%), urological conditions (4%), cerebrovascular and ophthalmological conditions (3%), dermatological conditions (2%), CNS conditions (2%), psychiatric conditions (1%), poisoning (0,4%).	Not described	Not described

Table 1. Continued

Study's author(s), year, country	Sample	Design	Reasons for ED visits	Factors that influence discharge from the ED	Factors associated with repeat ED visits
Caplan <i>et al.</i> (2004), Australia	75 and over ($n = 739$) $n = 370$ intervention, $n = 369$ control	Prospective, randomised, controlled	Older patients were significantly more likely to attend during the morning and early afternoon, during the winter months, arrive by ambulance and require admission to hospital. Older patients were significantly more likely to attend with non-injury, particularly cardiac-related conditions. Ischaemic heart disease 41%/38% and diabetes mellitus 13%/14% for intervention/control group.	Discharge plan intervention	As a result of the CGA (Comprehensive Geriatric Assessment), patient returned to the ED, occasionally for an unavoidable admission but more often for treatment and then return home. All CGA recommendations that required nursing, physiotherapy, occupational therapy or ED intervention were implemented by or under the supervision of the team.
Meldon <i>et al.</i> (2003), USA	65 and over ($n = 650$)	Prospective, cohort study	Average mental health and physical component scores of SF-36 and were comparable to age-matched population norms. A total of 10% and 20% required help with at least one ADL (activities of daily living) and IADL (instrumental activities of daily living).	Not described	Triage Risk Stratification Tool (TRST) to identify older ED patients at risk for ED revisits Risk factors: cognitive impairment, 8%; lives alone/no caregiver, 27%; difficulty in walking/falls, 32%; recent ED use/hospitalisation, 25%; polypharmacy, 41%; and nurse concern, 28%. Older persons with summed TRST scores of 2 or greater were significantly more likely to return to the ED or require hospital admission during the follow-up period. These high-risk subjects had significant rates of ED revisits (23% and 47%) and hospital admission (23% and 38%) at 30 and 120 days.

or' and 'and'. An article was eligible for inclusion in our review if it (i) reported on original research, (ii) was written in English, (iii) focused on older people aged ≥ 65 years, (iv) described the reasons (e.g. health conditions and problems) for the ED visit and (v) reported factors affecting discharge and those causing repeat ED visits. Study characteristics were abstracted and included country of origin, year and language of publication, main objective of the study and use of a conceptual framework to assess older patients in EDs. Study characteristics and findings are summarised in Table 1.

Analysis of the studies retrieved

This review used content analysis (White & Marsh, 2006; Elo & Kyngäs, 2008). Information from each article included: author names, year and country of publication, sample, study design and main results relating to our research questions. This information was entered into a data collection sheet (Table 1). Categories were formed by grouping together areas of similar content. The categories were named based on the content of listed factors and authors' definitions used in the studies (White & Marsh, 2006). Content analysis was conducted, and the categories and subcategories were discussed and validated together with senior researchers and specialists until consensus was achieved (Polit & Beck, 2008).

Eleven categories were identified that described the reasons why older people visit EDs, as well as five categories that described factors affecting the discharge process in older people and six that described the reasons for repeat ED visits.

Results

Our search of the two electronic databases produced comprehensive evidence for why older people visit the ED. Twenty-five small- and large-scale studies addressed the main focus of this review and were deemed eligible for further analysis (Fig. 1). Most of the studies were quantitative, conducted in the USA and Europe; a small number were undertaken in Canada and Australia. The methodology used in the articles was suitable for the research question.

Reasons for the ED visit

The reasons why older people visited the ED were related to the following: cardiovascular, mental health, musculoskeletal and abdominal conditions; adverse drug reactions (ADRs); dermatological, neurological and respiratory conditions; poor health status; influence of a time factor; and accidents (Table 2).

Cardiovascular problems

The percentage of older people presenting to the ED with acute and chronic cardiovascular conditions varied from 10% (Downing & Wilson, 2005) to 41% (Caplan *et al.*, 2004). Acute cardiac problems included cardiac conditions presenting as 'pain in throat, angina pectoris', cardiovascular complaints (Quach *et al.*, 2012), tachycardia, orthostatic hypotension and low blood pressure. Chronic cardiac problems were related to previous cardiac pathology (Graf *et al.*, 2012) or diagnoses (Rutschmann *et al.*, 2005; Moons *et al.*, 2007; Crilly *et al.*, 2008; Caterino *et al.*, 2009; Hastings

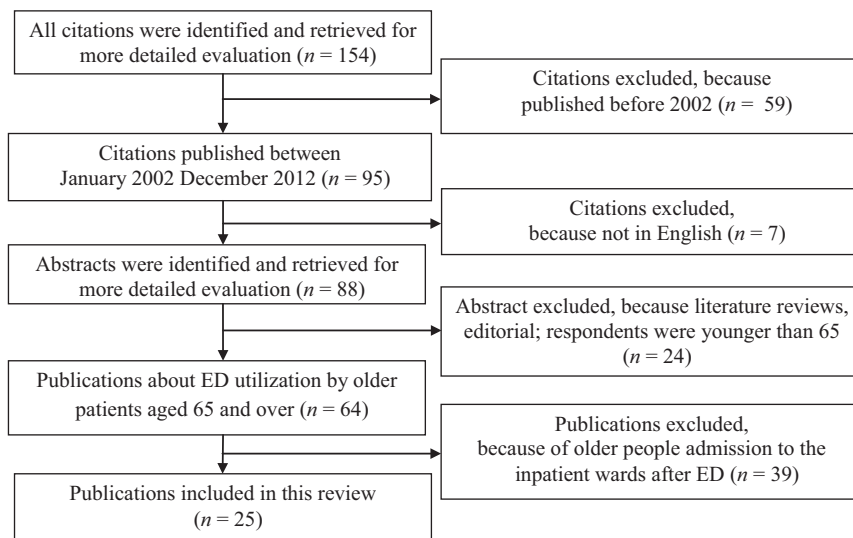


Figure 1 Study flow diagram.

Table 2 Categories and subcategories of reasons for the ED visit

Categories	Subcategories	Substantive code
Cardiovascular problems (Caplan <i>et al.</i> , 2004; Downing & Wilson, 2005; Rutschmann <i>et al.</i> , 2005; Moons <i>et al.</i> , 2007; Crilly <i>et al.</i> , 2008; Salvi <i>et al.</i> , 2008; Horney <i>et al.</i> , 2012; Caterino <i>et al.</i> , 2009; Hastings <i>et al.</i> , 2010; Graf <i>et al.</i> , 2012; Quach <i>et al.</i> , 2012)	Acute cardiac problems	Cardiac conditions (pain in throat, angina pectoris), cardiovascular complaints, tachycardia, orthostatic hypotension, low blood pressure.
	Chronic cardiac problems	Cardiac pathology, cardiac diagnoses, coronary syndromes and heart failure presented more frequent in CED (conventional ED); coronary artery disease, cardiac pathology, congestive heart failure, ischaemic heart disease, hypertension, cardiovascular problems.
Mental health issues (Graf <i>et al.</i> , 2012; Downing & Wilson, 2005; Hastings <i>et al.</i> , 2010; Horney <i>et al.</i> , 2012; Rosted <i>et al.</i> , 2012; Ruths <i>et al.</i> , 2005; Rutschmann <i>et al.</i> , 2005)	Psychiatric problems	Psychiatric illness, depression, depressive symptoms, psychotic symptoms, dementia, delirium.
	Alcohol problem	Consuming alcohol during deliberate self-harm.
	Suicidal behaviour	Self-harm by overdose of medication, poisoning, hanging/asphyxia, cutting or piercing, starving, car exhaust fumes, previous self-harm episodes. More women and widows presented in ED with self-harm.
Musculoskeletal conditions (Meldon <i>et al.</i> , 2003; Gangavati <i>et al.</i> , 2009; Graf <i>et al.</i> , 2012; Rutschmann <i>et al.</i> , 2005; Hastings <i>et al.</i> , 2008, 2011; Moons <i>et al.</i> , 2007; Lee <i>et al.</i> , 2008; Downing & Wilson, 2005; Horney <i>et al.</i> , 2012; Quach <i>et al.</i> , 2012; Rosted <i>et al.</i> , 2012; Gray & Walker, 2008; Spector <i>et al.</i> , 2012; Stevens <i>et al.</i> , 2009)	Traumas	Minor and major traumas, head trauma (ICH, acute subdural haemorrhages, epidural haemorrhage, traumatic subarachnoid haemorrhages, intraparenchymal haemorrhage).
	Falls	Falls.
	Injuries	Injuries, contusions, abrasions, injuries involving walkers, injuries involving canes.
	Orthopaedic problems	Orthopaedic problems, osteoporosis, fractures, arthritis.
	Functional problems	Difficulty in walking, mobility impairment, frailty; need help with at least one functional task/activities of daily living (ADL).
Intestinal disorders (Caplan <i>et al.</i> , 2004; Caterino <i>et al.</i> , 2009; Horney <i>et al.</i> , 2012; Hastings <i>et al.</i> , 2010; Downing & Wilson, 2005; Quach <i>et al.</i> , 2012; LaMantia <i>et al.</i> , 2010; Rutschmann <i>et al.</i> , 2005)	Physical problems	Physically impairment.
	Urinary tract	Urological, chronic kidney disease, acute renal failure.
	Pain	Uncontrolled pain.
	Gastrointestinal conditions	Abdominal pain, non-infectious gastrointestinal problems, cramps, spasm.
	Metabolic disorders	Diabetes mellitus, hypoglycaemia, hyperosmolar diabetic decompensation, hyponatremia.
Adverse drug reactions (ADR) (Helldén <i>et al.</i> , 2009; Olivier <i>et al.</i> , 2009)	Reaction related to organ function	Adverse drug reactions (ADR) related to impaired renal function; renal insufficiency; vertigo, orthostatic hypotension; falls and related injuries; anaemia or bleeding.
	Sedation of medication	ADR were caused because of number of drugs taken, confusion or oversedation, self-medication, use of antibacterial drugs, use of antithrombotics and drug-drug interaction: analgesics, NSAID, psycholeptics, antithrombotics. Women with ADR were significantly older than women without ADR.
Dermatological conditions (Downing & Wilson, 2005; Horney <i>et al.</i> , 2012; Quach <i>et al.</i> , 2012)	Skin problems	Dermatological, soft tissue, skin cancer.
Neurological conditions (Downing & Wilson, 2005; Rutschmann <i>et al.</i> , 2005; Moons <i>et al.</i> , 2007; Salvi <i>et al.</i> , 2008; Hastings <i>et al.</i> , 2010; Horney <i>et al.</i> , 2012; Quach <i>et al.</i> , 2012)	Acute neurological symptoms	Stroke and transient ischaemic attack presented more often in GED (geriatric ED), altered level of consciousness.
	Actualisation of neurological disease	Parkinson's disease, cerebrovascular conditions, central nervous system conditions (CNS), ophthalmological.

Table 2. Continued

Categories	Subcategories	Substantive code
Respiratory conditions (Downing & Wilson, 2005; Rutschmann <i>et al.</i> , 2005; Crilly <i>et al.</i> , 2008; Gray & Walker, 2008; Salvi <i>et al.</i> , 2008; Caterino <i>et al.</i> , 2009; LaMantia <i>et al.</i> , 2010; Quach <i>et al.</i> , 2012)	Chronic respiratory conditions	Chronic obstructive pulmonary disease presented more often in GED (geriatric ED), respiratory conditions and problems, complication of multiple chronic conditions. Female had less chronic health conditions.
	Male patients had higher presentation of chronic problems.	
	Complication of respiratory conditions	Difficulty in breathing, chest pain, chest infection, shortness of breath, infections (pneumonia).
Poor health (Downing & Wilson, 2005; Hastings <i>et al.</i> , 2011)	Patient health self-assessment	Patients described their health as poor or fair and 80% had low risk for death.
	Patient arrived to ED because of some health condition	Using ambulance.
Influence of time factor (Downing & Wilson, 2005; Crilly <i>et al.</i> , 2008)	Increased need for healthcare services in certain time	ACFR (aged care facility resident) and non-ACFR group (07:00–15:29), morning and early afternoon.
	Increased need for healthcare services in certain day	Monday was most busy for non-ACFR and Friday for ACFR.
	Increased need for healthcare services in certain season of the year	During winter, both groups presented often compared to other seasons of the year.
Accidents (Gangavati <i>et al.</i> , 2009; Stevens <i>et al.</i> , 2009)	Accidents occurred at home	Home, assisted-living facility.
	Accidents occurred in healthcare facilities	Nursing home, doctor's office, mall.
	Accidents occurred in public places	Bar, road, public places, stairs or steps.

et al., 2010; Horney *et al.*, 2012). Older people with coronary syndromes and heart failure visited conventional EDs more frequently (Salvi *et al.*, 2008).

Mental health issues

Mental health conditions included psychiatric problems (Rutschmann *et al.*, 2005; Hastings *et al.*, 2010; Graf *et al.*, 2012; Horney *et al.*, 2012; Rosted *et al.*, 2012) and conditions (Downing & Wilson, 2005). Alcohol-related problems, overdose of medication and suicidal behaviour were related to each other (Ruths *et al.*, 2005) and prompted older people to visit EDs.

Older people were also admitted to the ED as a result of poisoning (Downing & Wilson, 2005), hanging/asphyxia, cutting or piercing, starvation or inhaling car exhaust fumes (Ruths *et al.*, 2005). More women and widows presented to the ED as a result of self-harm (Ruths *et al.*, 2005).

Musculoskeletal conditions

Older people visited the ED because of various musculoskeletal conditions resulting from trauma, falls, injuries, and orthopaedic, functional and physical problems. Some presented to the ED with minor (Stevens *et al.*, 2009) and some with major trauma (Rutschmann *et al.*, 2005; Moons *et al.*,

2007; Gangavati *et al.*, 2009; Graf *et al.*, 2012), including head trauma (Gray & Walker, 2008) and fractures (Quach *et al.*, 2012). Seventy-six per cent of the older patients in one study presented with falls (Spector *et al.*, 2012). Injuries (Downing & Wilson, 2005; Spector *et al.*, 2012) were associated with contusions and abrasions, including walkers and canes (Stevens *et al.*, 2009). Horney *et al.* (2012) reported that few visited the ED for orthopaedic problems.

Functional problems were related to difficulty in walking (Lee *et al.*, 2008), mobility impairment (Quach *et al.*, 2012) and frailty (Hastings *et al.*, 2008). Older people needed help with at least one functional activity of daily living (Hastings *et al.*, 2011). Another study reported that 19% of their participants were physically impaired (Rosted *et al.*, 2012).

Intestinal disorders

Older people visited the ED because of intestinal disorders associated with the urinary tract, pain and the gastrointestinal tract or because of metabolic disorders. Four per cent of urinary tract conditions related to urological problems (Downing & Wilson, 2005), such as chronic kidney disease (Hastings *et al.*, 2010; Horney *et al.*, 2012) and acute renal failure (Rutschmann *et al.*, 2005). Some older people expe-

rienced uncontrolled pain (Rutschmann *et al.*, 2005). Others experienced gastrointestinal issues characterised by abdominal pain, cramps and spasms (LaMantia *et al.*, 2010), some of which were non-infectious (Quach *et al.*, 2012). The percentage of older ED patients with metabolic disorders (Rutschmann *et al.*, 2005) varied from 13% (Caplan *et al.*, 2004) to 32% (Caterino *et al.*, 2009).

Adverse drug reactions

Another reason for older patients visiting the ED was adverse drug reactions or ADRs. These are defined as deleterious responses to medications affecting organ function and medication-related sedation. ADRs in older people include impaired renal function and renal insufficiency, vertigo, orthostatic hypotension, falls and related injuries, and bleeding or anaemia (Helldén *et al.*, 2009). In one study, 20% of the ADRs among older ED patients were metabolically related, 19% neurological and 17% cardiovascular in nature (Olivier *et al.*, 2009).

Medication-related sedation resulted in confusion or oversedation (Helldén *et al.*, 2009) and was caused by polypharmacy, self-medication, antibacterial drugs, antithrombotics and drug–drug interactions involving analgesics, non-steroidal anti-inflammatory drugs (NSAIDs), psycholeptics and antithrombotics (Olivier *et al.*, 2009). Women with ADRs were significantly older than those without (Helldén *et al.*, 2009).

Dermatological conditions

Some dermatological conditions also prompted older people to visit the ED. The percentage of older people presenting to the ED with skin problems varied from 2% (Downing & Wilson, 2005) to 33% (Horney *et al.*, 2012). These problems included dermatological problems (Downing & Wilson, 2005), soft tissue injuries (Quach *et al.*, 2012) and skin cancer (Hastings *et al.*, 2010; Horney *et al.*, 2012).

Neurological conditions

Neurological conditions (Moons *et al.*, 2007; Quach *et al.*, 2012) were reported as acute neurological symptoms and actualisation of neurological disease, which varied from 2% (Horney *et al.*, 2012) to 18% (Olivier *et al.*, 2009). Acute neurological symptoms included transient ischaemic attacks or strokes (Rutschmann *et al.*, 2005), which were observed more often in EDs for older people (Salvi *et al.*, 2008), and altered levels of consciousness (LaMantia *et al.*, 2010). Actualisation of neurological disease was caused by Parkinson's disease (Hastings *et al.*, 2010), and cerebrovascular, ophthalmological and central nervous system conditions (Downing & Wilson, 2005).

Respiratory conditions

Respiratory conditions comprised chronic respiratory conditions and complications of respiratory problems (Downing & Wilson, 2005; Rutschmann *et al.*, 2005; Crilly *et al.*, 2008; Salvi *et al.*, 2008). Chronic respiratory conditions included chronic obstructive pulmonary disease (COPD), which was observed more often in EDs for older people (Salvi *et al.*, 2008). More male patients presented to the ED with chronic respiratory problems than female patients (Hastings *et al.*, 2010). Complications included difficulty in breathing, chest pain, shortness of breath (LaMantia *et al.*, 2010) and chest infection (Gray & Walker, 2008).

Poor health status

At times, older people visited the ED because of some health condition and poor health status, which was confirmed upon arrival at the ED by a patient health self-assessment instrument. Although 40% of patients in one study described their health as poor or fair (Hastings *et al.*, 2011), another study found that 80% of older patients visiting the ED due to 'poor health status' were at low risk of death (Caterino *et al.*, 2009).

Influence of time factor

At certain times of the day, days of the week or seasons of the year, older people increased their use of healthcare services, particularly ED services, due to increased need. Crilly *et al.* (2008) found that older patients living in older care facilities used ED services more, depending on the time of day (e.g. from 07:00 to 15:29). This was consistent with the finding that older patients were significantly more likely to present to the ED during the morning or early afternoon (Downing & Wilson, 2005). Increased need for healthcare services was also related to the day of the week: older people living at home visited the ED most frequently on Mondays, whereas older people living in older care facilities visited the ED most frequently on Fridays (Crilly *et al.*, 2008). There were also seasonal trends in ED visits. Older people visited the ED more during winter months than the other seasons (Downing & Wilson, 2005; Crilly *et al.*, 2008).

Accidents

Older people were transported to the ED as a result of accidents that occurred at home, in healthcare facilities and in public places. In one study, 60% of accidents occurred in the home (Stevens *et al.*, 2009). A large proportion of accidents also occurred in assisted-living facilities (Gangavati *et al.*, 2009). Of the accidents occurring in healthcare facilities, 11% took place in nursing homes, doctors' offices or healthcare malls (Gangavati *et al.*, 2009). Accidents in public

Table 3 Categories and subcategories of factors that impact discharge from ED

Categories	Subcategories	Substantive code
Unresolved problems (Rutschmann <i>et al.</i> , 2005; Hastings <i>et al.</i> , 2008; Rosted <i>et al.</i> , 2012)	Unresolved physical problems at discharge	Pain, Incontinence, Loss of weight, Problems relating to changes in mobility, The frailest participants were at greater risk of adverse outcomes after ED discharge than those who were least frail.
	Unresolved functional problems at discharge	Use of walking aids, Risk of falls.
	Insufficient social resources	Insufficient help from community service, Social isolation, 'home care impossible'.
Health risk identification (Rutschmann <i>et al.</i> , 2005; Graf <i>et al.</i> , 2012; Rosted <i>et al.</i> , 2012)	Unresolved medical diagnoses	COPD (chronic obstructive pulmonary disease), ischaemic heart disease, diabetes, Alzheimer's disease or other diagnosis of dementia, acute medical problems, cardiovascular, pulmonary, digestive, neurological, infections.
	Instruments used for predicting unplanned readmissions	ISAR (the Identification of Senior At Risk), ISAR 2 (model for structured nursing assessment and intervention), TRST (Triage Risk Stratification Tool).
	Previous underestimation of care needed	Based on discharge diagnosis, clinical presentation and vital signs measurement should have been triaged in a higher category.
Aftercare instructions (Caplan <i>et al.</i> , 2004; Hastings <i>et al.</i> , 2008)	Patient not understanding discharge information	Patient not understanding information given by ED staff as self-care instructions, how long symptoms would last, information about cause of the problem, return precautions, how soon to see outpatient physician, not received all the information needed from physicians and nurses; Discharge plan.
Medication prescribed at discharge (Helldén <i>et al.</i> , 2009; Hastings <i>et al.</i> , 2011; Horney <i>et al.</i> , 2012)	Information about medication	Information related to medication purpose, frequency, duration, medication potential side effects, Medication prescribed at discharge (acetaminophen and oxycodone, ciprofloxacin, ibuprofen, oxycodone, acetaminophen and hydrocodone);
	Increased number of drugs used	Increased number of drugs being used at discharge compared to admission.
Patient's type of residence before ED admission (Crilly <i>et al.</i> , 2008)	Living place of older patient	ACFRs (aged care facility resident) stayed significantly longer in-hospital.

places (Stevens *et al.*, 2009) took place in bars or on the road (Gangavati *et al.*, 2009).

Factors that influence discharge from the ED

Five factors influenced the discharge of older people from the ED: unresolved problems, health risk identification, aftercare instructions, medication prescribed at discharge and patients' type of residence before ED admission (Table 3).

Unresolved problems included physical problems, functional problems, insufficient social resources and unresolved medical diagnoses. Discharge was affected when older patients experienced physical problems such as pain, incontinence, weight loss, and problems with functionality and

related to changes in mobility (Rosted *et al.*, 2012). The most frail patients were at greater risk for adverse outcomes after ED discharge than those who were less frail (Hastings *et al.*, 2008).

Discharge was delayed by lack of available social resources, that is inadequate community service aid, social isolation (Rosted *et al.*, 2012), and no possibility of home care or 'home care impossible' (Rutschmann *et al.*, 2005, pp. 146–147). Unresolved medical diagnoses included chronic conditions such as COPD, ischaemic heart disease, diabetes, and Alzheimer's disease or other dementias (Rosted *et al.*, 2012; p. 146); and acute conditions such as infections (e.g. pneumonia, flu, gastroenteritis, urinary tract infections), cardiovascular problems (e.g. heart failure, myocardial

infarction/angina), neurological problems (e.g. stroke, transient ischaemic attack), digestive problems (e.g. non-specific abdominal pain, inguinal hernia) and pulmonary conditions (e.g. exacerbation of COPD, embolism) (Rutschmann *et al.*, 2005).

The process of health risk identification also affected discharge from the ED. In some EDs, the health risks of older patients were assessed in order to determine whether they might be vulnerable to future adverse outcomes, unplanned readmissions and previous underestimation of care needed. Examples of instruments used for this assessment in the different studies included the Identification of Seniors At Risk (ISAR) tool (Graf *et al.*, 2012), ISAR 2, a structured nursing assessment and intervention tool (Rosted *et al.*, 2012), and the Triage Risk Stratification Tool (TRST; Graf *et al.*, 2012).

Previous underestimation of care needed was identified through discharge diagnosis, clinical presentation and vital sign measurements. One study found that 26% of older patients admitted to the ED should have been triaged to a higher category (Rutschmann *et al.*, 2005). Indicators represent chronic conditions that had not always been previously identified but explained the difficulties in maintaining patients at home (Rutschmann *et al.*, 2005).

Aftercare instructions also affected discharge from the ED, in that older patients did not always understand discharge information provided by ED staff. Hastings *et al.* (2011) reported that, of the 92 older patients interviewed, 63% did not understand how long symptoms would last, 56% did not understand return precautions, 28% did not know how soon to see an outpatient physician, 21% did not understand information about the cause of their problem, 16% did not understand self-care instructions, and 16% did not receive all the necessary information from physicians and nurses. Caplan *et al.* (2004) also found that some older patients did not even receive a discharge plan.

The medication prescribed at discharge (i.e. information received about medications and increased number of drugs used) also affected the discharge process. In the study of Hastings *et al.* (2011), 4% of the interviewed patients stated that the medication information they received explained the purpose of the medication, 4% stated that it dealt with medication frequency, 11% stated that it dealt with the duration of medication, and 41% stated that it outlined potential side effects (Hastings *et al.*, 2011). Different groups of medication were prescribed at discharge according to the needs of the older people (Horney *et al.*, 2012). One study observed a statistically significant increase for all patients in the number of drugs used at discharge compared with the number of drugs used at admission (Helldén *et al.*, 2009).

Another factor influencing the discharge process was the patient's type of residence before ED admission. Patients living in long-term care facilities for older people had longer ED stays than those not living in such facilities (Crilly *et al.*, 2008).

Factors associated with repeat ED visits

Six factors contributed to repeat ED visits for older people: sociodemographic, social, health problems, need for systematic health assessment, healthcare service use and inadequacy of care provided (Table 4).

Sociodemographic factors were the patient's age and gender. Older patients aged ≥ 65 were more likely to return to the ED (Meldon *et al.*, 2003; Caplan *et al.*, 2004; LaMantia *et al.*, 2010; Spector *et al.*, 2012). One study found that men were readmitted more frequently than women (Graf *et al.*, 2012). An earlier study found that women were at a higher risk for returning to the ED within 6 months of ED discharge (Salvi *et al.*, 2008).

Social factors, such as social problems and type of dwelling (i.e. private home, community dwelling or care facilities), were also associated with repeat ED visits. Living alone, with no caregiver, was negatively associated with the composite outcome. It is possible that the ability to live alone represents a healthier, more independent group of older people who are less likely to use healthcare services (Meldon *et al.*, 2003). Being in a vulnerable social network may be associated with readmission to the ED (Naughton *et al.*, 2010). Patients discharged to nursing homes, long-term or home health care had higher readmission rates than patients discharged to the community (Spector *et al.*, 2012). Older people in long-term care facilities comprised a significantly higher proportion of ED revisits (Crilly *et al.*, 2008).

Patients' health problems also contributed to ED revisits. The health problems responsible for patients' previous ED visit or recent outpatient visit caused some older patients to return to the ED (Hastings *et al.*, 2008; Graf *et al.*, 2012): comorbidities, and functional, physical, medical or mental problems. Readmitted patients always had more comorbidities than those not readmitted (Graf *et al.*, 2012). Functional problems such as disability (Salvi *et al.*, 2008) and difficulty in walking (Meldon *et al.*, 2003), as well as functional dependence, were associated with ED revisits (Graf *et al.*, 2012). Physical problems were related to physical health (Naughton *et al.*, 2010) and one or more uncompensated physical problems (Rosted *et al.*, 2012). Medical problems such as pneumonia (Naughton *et al.*, 2010; Spector *et al.*, 2012), heart failure (Spector *et al.*,

Table 4 Categories and subcategories of factors associated with repeat ED visits

Categories	Subcategories	Substantive code
Sociodemographic characteristics (Meldon <i>et al.</i> , 2003; Caplan <i>et al.</i> , 2004; Salvi <i>et al.</i> , 2008; LaMantia <i>et al.</i> , 2010; Graf <i>et al.</i> , 2012; Spector <i>et al.</i> , 2012)	Age	Aged patient, Older patient.
	Gender	Male were more readmitted than woman, Female – for 6-month return.
Social problems (Meldon <i>et al.</i> , 2003; Crilly <i>et al.</i> , 2008; Naughton <i>et al.</i> , 2010; Spector <i>et al.</i> , 2012)	Social problems	Older people lives alone/no caregiver, Social problems, Being part of vulnerable social network, One or more uncompensated social problem.
	Type of dwelling	Aged care facility residents (ACFR), Patients discharged to nursing homes or home health care.
Health problems (Meldon <i>et al.</i> , 2003; Hastings <i>et al.</i> , 2008; LaMantia <i>et al.</i> , 2010; Naughton <i>et al.</i> , 2010; Graf <i>et al.</i> , 2012; Rosted <i>et al.</i> , 2012; Spector <i>et al.</i> , 2012)	Same health problem of older patient than during previous ED visit	Readmission diagnoses same as the initial ones, Same problem as during recent outpatient visit.
	Presence of comorbidities of readmitted patients	Readmitted patients had always more comorbidities than who were not readmitted.
	Functional problems	Functional dependence, Difficulty in walking, Disability.
	Physical problems	Problems with physical health, One or more uncompensated physical problem.
	Medical problems	Pneumonia, heart failure, septicemia, urinary and genitourinary tract infection, gastrointestinal problem or bleeding, stomach or abdominal pain, nutritional-related or metabolic issue, intracranial bleeding or cerebral infarction, arrhythmia, heart rate, diastolic blood pressure, cardiac condition, respiratory condition, severe injuries, allergy, epistaxis, infection of skin of hand, arm or finger, foot or toe swelling; need for tube insertion, accident, hypertension, leg or hip fracture, general viral infection; One or more uncompensated medical problem, Adverse health outcome within 30 days.
	Mental health issues	Anxiety, Problems with psychological health, Dementia, One or more uncompensated mental problem.
Need for systematic health assessment (Meldon <i>et al.</i> , 2003; Caplan <i>et al.</i> , 2004; Moons <i>et al.</i> , 2007; Crilly <i>et al.</i> , 2008; Hastings <i>et al.</i> , 2008; Lee <i>et al.</i> , 2008; Salvi <i>et al.</i> , 2008; LaMantia <i>et al.</i> , 2010)	Concerns showed by staff	Nurse concern to return, Comprehensive geriatric assessment under the supervision of the team.
	Concerns showed by assessment tools	Using of admission predictive tools: Australian Triage Scale, DAI (deficit accumulation index), ESI (Emergency Severity Index), TRST (Triage Risk Stratification Tool), Rowland questionnaire.
Healthcare service use (Moons <i>et al.</i> , 2007; Salvi <i>et al.</i> , 2008; LaMantia <i>et al.</i> , 2010; Naughton <i>et al.</i> , 2010; Hastings <i>et al.</i> , 2011; Graf <i>et al.</i> , 2012; Horney <i>et al.</i> , 2012; Rosted <i>et al.</i> , 2012)	Frequent ED use	Frequent ED use by older people, At least 1 previous outpatient ED visit in the 12 months before the index ED visit, High-frequency outpatient ED use, ED re-presentation, recent ED use, ECP (emergency care practitioner).
	Frequent healthcare service use	Frequent PCP (primary care physician) use, High hospital use.
	Incremental recurrence health situation	Recurrence situation with readmission rates 25%, 38%, 49% and 60% at 1, 3, 6 and 12 months,

Table 4. Continued

Categories	Subcategories	Substantive code
		Readmission rates 22% after 1 month and 32% after 6 months, Readmission rates within 14 days of discharge; 22.8% had returned at least once, and within 90 days, 42.3%. Readmission rates 10%, 15.8% and 32.5% after 14, 30 and 90 days. Previous hospital admission as independent risk factors for a repeat ED visit.
Inadequacy of care provided (Meldon <i>et al.</i> , 2003; Naughton <i>et al.</i> , 2010; Hastings <i>et al.</i> , 2011)	Previous hospital admission	
	Patients not understanding of discharge information	Not understanding of discharge diagnosis, Not understanding information given by healthcare professionals at discharge.
	Inadequate care process management	Inadequate transitional care between hospital and community, Not understanding course of illness.
	Inadequate medication evaluation	Polypharmacy.

2012) or adverse health outcomes occurring within 30 days of ED discharge were associated with ED revisits (Hastings *et al.*, 2008; LaMantia *et al.*, 2010; Naughton *et al.*, 2010; Spector *et al.*, 2012). Older patients also returned to the ED because of mental health issues such as dementia (Salvi *et al.*, 2008), cognitive impairment (Meldon *et al.*, 2003), anxiety and problems related to psychological health (Naughton *et al.*, 2010).

Staff found that some older patients required more systematic health assessment when admitted to the ED. It was found that some patients returned to the ED as a result of a nurse's suggestion (Meldon *et al.*, 2003). The results of a comprehensive health assessment under the supervision of a multiprofessional team (Caplan *et al.*, 2004) may predict whether a patient would return to the ED.

The pattern of a patient's healthcare service use was associated with whether the patient would revisit the ED. This included frequent ED use, frequent healthcare service use, incremental recurrence of a health situation and previous hospital admissions. Older patients who visited the ED and used healthcare services frequently were readmitted to the ED more often (Salvi *et al.*, 2008; LaMantia *et al.*, 2010; Horney *et al.*, 2012).

Incremental recurrence of a health situation was identified in several studies. Readmission rates within 14 days of discharge from an ED varied from 10% (Moons *et al.*, 2007) to 22.8% (Hastings *et al.*, 2011). After 1 month of discharge, the readmission rates ranged from 15.8% (Moons *et al.*, 2007) to 25% (Graf *et al.*, 2012); after 3 months, rates ranged from 32.5% (Moons *et al.*, 2007) to 42.3% (Hastings *et al.*, 2011); after 6 months, rates ranged from 32% (Rosted *et al.*, 2012) to 49% (Graf

et al., 2012); and within 12 months, the rate was 60% (Graf *et al.*, 2012). Previous hospital admission was an independent risk factor for repeat ED visits (Naughton *et al.*, 2010).

Provision of inadequate care, such as patients or proxies failing to understand key portions of discharge information or discharge diagnoses given by healthcare professionals (21%), inadequate care process management and inadequate medication evaluation varying from 4% to 42%, was associated with repeat ED visits (Hastings *et al.*, 2011).

Older patients sometimes experienced inadequate care process management, that is poor transitional care, as they moved from the hospital to the community (Naughton *et al.*, 2010). As a result of poor transitional care, some patients failed to grasp the expected course of their illness (Hastings *et al.*, 2011). Inadequate medication evaluation was identified as polypharmacy, which was another risk factor for ED readmissions (Meldon *et al.*, 2003).

Discussion

This literature review considered reasons why older people (≥ 65) visit EDs, factors that affect their discharge from EDs and factors that contribute to repeat ED visits. There are several literature reviews of older patients in EDs (Samaras *et al.*, 2010), but the patient population in previous reviews was younger. However, the patient population in previous reviews was younger than that in the current review, and previous reviews focused on specific areas such as fall risk and fall prevention programmes (McMahon *et al.*, 2011), measures of crowding in EDs (Hwang *et al.*, 2011), frequent users of EDs (LaCalle & Rabin, 2010), whether

interventions for older people reduce ED visits (McCusker & Verdon, 2006), nursing care issues for older people in EDs (Moons *et al.*, 2003) and patterns of use, adverse outcomes, and effectiveness of interventions (Aminzadeh & Dalziel, 2002).

A few earlier empirical studies were found. To our knowledge, there are no literature reviews that studied the whole process of older people visiting EDs, that is the reasons for ED visits, factors that affect discharge from EDs and factors associated with repeat ED visits. To give more support to the continuity of care of older people, a review of the whole care continuum is needed.

Most of the studies included in the current review were conducted in the USA and Europe, so there are some differences in the findings. There are different healthcare funding and cultures in each country, and not all European countries have geriatric EDs. In the USA and Australia, the readmission rate was found to be lower than in Europe and associated with patients living in facilities for older people. More studies investigating the care of older people in EDs are warranted, because EDs are favourable entry points into healthcare systems, and older people seek ED services more often than any other demographic. Older people visit EDs because of multiple health conditions, which may become too difficult to be managed at home by carers; commonly, they present with different and more atypical illnesses compared with younger adults (Downing & Wilson, 2005; Hastings *et al.*, 2010; Claver, 2011; Graf *et al.*, 2012; Horney *et al.*, 2012). Thus, it may affect the time spent in the ED, which results from the fact that there is a need to identify problems, both chronic and acute, and deal with them. In addition, the discharge process may differ from other population groups, especially older people who live alone (Meldon *et al.*, 2003).

Our literature review and analysis of 25 studies identified categories of reasons for ED visits, factors that affect the discharge process (see Table 3) and factors that contribute to repeat ED visits (see Table 4). The presence of multiple comorbidities in older people complicates their evaluation and management in the ED (Samaras *et al.*, 2010). The current review found that 76% of older people presented with falls (Spector *et al.*, 2012) and 60% of accidents happened at home (Stevens *et al.*, 2009), confirming that there are physical changes related to age and that older people are at greater risk of falling. The home environment needs to be safe, especially for those who want to stay at home and have special needs. There may be a need to prepare family members and other caregivers for continued care at home, to ensure that the necessary knowledge and skills are available.

Quite often after first aid and treatment are given in the ED, older people are discharged to home to continue their

care. It was found that aftercare instructions from the ED affected the discharge process. As older patients often failed to understand discharge information given to them by ED staff, the staff needed to spend more time explaining the information, which, in turn, influenced the discharge process. In one study, 63% of the patients did not understand how long symptoms would last and 56% did not understand return precautions or what signs and symptoms to look out for to indicate that they should return to the ED (Hastings *et al.*, 2011). Such misunderstandings may result in readmissions and increased costs; this could be prevented if the discharge process were completed properly by taking the personal needs of older people into account.

Older patients sometimes did not understand information related to medication prescribed at discharge (Hastings *et al.*, 2011). Many older people live alone (Meldon *et al.*, 2003), and they want to remain there, even if they need help in their daily activities. This means that nurses should ensure that ED discharge information is understandable, acceptable and applicable to older people, as with all patient groups, to prevent complications. When older people live alone and have no one to help, it is important that healthcare professionals ensure that information provided at discharge is feasible for them, otherwise they will seek help from the ED. Thus, it is important that the discharge process and the health assessment be conducted very carefully and systematically to ensure that older patients can manage at home. Information provided at discharge needs to be highlighted. This is a challenge, especially in multicultural countries, where people speak different languages and have different values, beliefs and traditions within the family.

Older people are more likely return to the ED because of unresolved physical problems (Rosted *et al.*, 2012), mental problems such as dementia (Salvi *et al.*, 2008), or cognitive impairment (Meldon *et al.*, 2003) and social problems (Meldon *et al.*, 2003; Naughton *et al.*, 2010). Care for older people in healthcare facilities is expensive, despite ongoing changes within healthcare systems in different countries. This makes certain demands on nursing care. Care for older people needs more cooperation with different healthcare providers, such as primary and home care. It is necessary to have consistent monitoring of the health of older people, educating them to cope with their health and age-related problems. The specific needs of older people require accurate organisation of care according to their needs, which are unique and variable. Activities in care continuity should be considered.

Even though healthcare systems in different countries vary, there is a need worldwide for a specific approach to caring for older patients who visit EDs.

Methodological considerations

To the best of our knowledge, the current review is the first of its kind to address questions related to why older people visit EDs, what factors affect their discharge, and what factors influence their readmission to EDs. However, our literature review has some limitations. Firstly, there was a lack of qualitative studies focusing specifically on older people presenting to EDs. Secondly, there were not many recently published studies dealing with the above-mentioned topic. This made addressing the second and third aims of the study difficult. Most related studies focused on health problems that cause older people to visit an ED for the first time or revisit an ED. Only a few studies identified factors that influence the discharge process and only a few described how these factors affect outcomes. Thirdly, for our review we set the study eligibility requirements to age ≥ 65 years. Conversely, other studies (Downing & Wilson, 2005) included ED patients of all ages in their analysis, comparing ED attendance of 65-year-old patients with that of those aged ≤ 64 years. Finally, another limitation concerned the various sampling methods used, making comparison of the included studies difficult. Some authors used hospital and government databases of ED admissions to obtain information about ED admission rates. The categorisation of health problems causing older people to visit EDs may be another limitation of the current study, because the titles of categories and causes were too closely related. Papers used in the current study were reviewed initially by the first author and later validated by others. It was challenging to identify the correct concepts for searching the data related to the first research question, because of the similarity of the concepts used in the literature reviewed.

Conclusions

The current literature review showed that older people represent a large group of ED users and that they visit the ED for many different health problems. The main reasons for their ED visits were clearly recognisable. Hidden reasons, such as loneliness, needlessness and insecurity (Savikko *et al.*, 2005; Tilvis *et al.*, 2012a,b), were not assessed in the studies analysed in this review. When older people develop a health problem, their whole health situation is affected (Inouye *et al.*, 2007). This so-called older syndrome is often responsible for ED revisits by older people. Thus, older patients seen in the ED require specialised care by skilled healthcare professionals specifically trained to care for these patients (Kihlgren *et al.*, 2006). This need can be addressed by EDs for older people (Kelley *et al.*, 2011).

Implications for practice

The findings of the current review identified that older people visit ED quite often because of different reasons. Discharge process and repeat visits may be influenced by various factors. To ensure quality nursing care in ED nurses need to be aware why do older people visit the ED, what factors may influence discharge and what factors are associated with repeat ED visits.

Contributions

Study design: PR, TS, JS; data collection and analysis: PR, TS, JS and manuscript preparation: PR, TS, JS.

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Family health evaluated by family members of older patients and nurses in emergency departments

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Abstract

Older patients quite often arrive in an emergency department (ED) with a family member, but little is known about the family member's health evaluated in ED. The aim of this study was to describe family health in EDs evaluated by family members and nurses. Data were collected from Estonian hospital EDs from 111 family members of older patients and from 93 nurses. Family health in EDs was evaluated as being at a moderate level. Family members reported that family health was better when older patients lived with the family. The more time the family spent in the ED, the worse the health-related activities were. Nurses reported that cardiovascular problems in older patients who presented in EDs disturbed the values of family health. We conclude that ED nurses should recognize the level of family health, in order to ensure that the family will be able to cope at home. Family health in EDs should be reviewed over time to help nurses meet the required needs of the family.

Keywords

emergency department, family health, family member, nursing care, older patient

Accepted: 1 May 2017

Background

Older patients in emergency departments

Older patients (≥ 65 years) often visit emergency departments (EDs)^{1,2} due to the following conditions: cardiovascular problems; musculoskeletal conditions; intestinal disorders; adverse drug reactions; neurological, respiratory, and dermatological conditions; accidents; mental-health problems.³ In 2014, 79,854 patients visited one ED in an Estonian regional hospital, on average about 218 patients per day, and over 60% of them were older.⁴ Paavilainen et al. found that nearly half of adult respondents (42%) arrived in the ED with a family member such as spouse/partner, person with whom they lived, or child.⁵ In the present study, a family member was defined as someone accompanying an older patient to the ED. Family members may also care for older patients after they have been discharged home.⁶ Previous studies describing family health have focused mainly on the children and parents, and especially on the interaction either in parent–child relationships⁷ or in respect to mental health and related behaviors.^{8,9} Any stressful situation can influence human wellbeing and affect the whole family's life.¹⁰

Family health within healthcare settings

The definition of the term 'family' differs; in sociology it denotes 'groups of people living together'; in psychology it means 'groups with strong emotional ties'.^{11(p.7)} The term

'family health' frequently equates to 'family functioning'.^{11(p.5)} Family health may be affected by one family member's health condition. Family perspective denotes the collective view of the family's health situation over time and through interaction with its members.¹² Here, the term 'family health' refers to ordinary family issues such as values, wellbeing, knowledge, ill-being, and activities as main components of family health.^{13,14}

Health-related values consist of family beliefs, rights, atmosphere of peace, personal growth and feelings of safety, feelings of being a whole, humor, a person's connection to his or her surroundings, and self-knowledge.¹⁴ When healthcare professionals work with families, they need to know a family's values and its culture; then healthcare staff become a crucial support to the whole family, creating reciprocal trust, friendship, energy, and pleasure in the family.¹⁵

Wellbeing is related to satisfaction, strengths, and alertness.¹⁴ In a neurological setting, family caregivers reported good psychological wellbeing if they provided more

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assistance to less depressed stroke survivors with better cognitive functioning.¹⁶

Ill-being could refer to feelings.¹⁴ In a study by Hakio et al., respondents reported that they were in quite good health, but experienced having feelings of ill-being.¹⁷

Health-related knowledge involves issues related to one's own health and that of a close relative/friend, health matters, potential answers with feasible solutions, and where help can be obtained.¹⁴ Visits to the hospital by family members of patients with prostate cancer were associated with health-related knowledge.¹⁸ Adler et al. point out nine categories of family knowledge needs: knowledge about the health condition, related care management, daily care, necessary contribution, future issues, how to explain the illness to others, required devices, facilities, organizational matters, and how the illness affects the family.¹⁹ The family members of older patients who visited EDs noted the need for clear communication, family members' role in ED care, how older patients were treated in the healthcare system, and the appropriate ability to provide specific care during the ED visit.²⁰ Furthermore, health-related activities that emerged included functional capability, self-care, significant performance, and a claim that the person is in good health.¹⁴ Family members who took part in associated activities experienced better physical health status and comprehensive knowledge.¹⁷

Only a few studies have been found that describe ED nurses' points of view with regard to older patients and their family care. In one study, conducted within the home, nurses pointed out that families are important for the patient both physically and mentally, by staying together, being aware of related issues, and hearing each other.²¹ Respect for older patients and their families is important.²² Emergency department nurses claimed that lack of information and poor communication provided insufficient support in decision-making and predicted how well or badly older patients fitted into the hospital environment.²² Emergency medicine requires professional staff who can see a patient's bigger clinical picture in order to be prepared for managing critical conditions and situations.²³

There is not enough scientific evidence about family health of older patients experienced in ED settings. However, it is critical to gain a better understanding of family health of those families whose older members are discharged home. Families have great role to play in older patients' after-care.

Aim of the study

The aim of the study was to describe family health in EDs evaluated by family members and nurses. The following research questions were set out:

1. How do family members describe family health in the ED?
2. How do nurses describe family health in the ED?
3. How does the family health described by family members differ from that described by nurses?

Methods

Instrument

Family health in EDs was evaluated by using the scale of Family Functioning, Health and Social Support (FAFHES) instrument developed in Finnish.¹⁴ The scale for measuring family health consists of 21 items comprising family-health components measuring health-related values in the family (5 items), feelings of wellbeing (3 items) and ill-being (5 items), knowledge (5 items), and health-related activities (3 items). One item measuring wellbeing was excluded from the original instrument because of discussions by the panel of professors ($n=4$) to strengthen the content validity. An expert panel was necessary because the scale, which measures family health, has been modified for use in a new context. The context of the original items was maintained, with the items for the family members and nurses being reworded. The FAFHES had been validated previously for family members of heart patients,¹⁴ and for patients with prostate cancer and their family members in its Finnish version.¹⁸ Questionnaires for the family members and nurses were translated from English to Estonian and Russian and translated back to English.²⁴ The coefficients of Cronbach's α for the whole scale were .66 for family members and .90 for nurses. The family health scale was considered as internally consistent, despite its few poor values for family members (Table 1). The family health scale measures levels of agreement/disagreement with statements, using a Likert-type scale. Respondents were offered a choice of six pre-coded responses (1 = definitely disagree, to 6 = definitely agree). The whole-scale and subscale scores were reached by summing each item response and calculating the mean. Poor experience of health was considered when the scores were 1.00–2.75, a moderate health level at 2.76–4.50, and good health when the mean scores were 4.51–6.00. The instrument was piloted in the EDs of three general Estonian hospitals from May to September 2013 with nurses ($n=18$) and family members of discharged older patients ($n=7$). Only some minor linguistic changes were later performed.

The background variables of family members included demographic characteristics such as age, gender, marital and social status, level of education, relationship to the

Table 1. Family Functioning, Health and Social Support (FAFHES) instrument in an emergency department setting.

Scale	Number of items	α for the family members	α for the nurses
Family health	21	.66	.90
Values	5	.30	.81
Wellbeing	3	.73	.73
Ill-being	5	.32	.58
Knowledge	5	.60	.84
Activities	3	.12	.63

α = Cronbach's alpha

older patients (spouse, cohabiting, daughter, son, sister, brother, or other), self-assessment of the health condition at the time of the ED visit, and hours spent in the ED. In addition, family members were asked to describe demographic characteristics of older patients, whether they had needed help in daily life before their ED visit, health problems, week day of the ED visit, type of transportation to ED, and previous visits to the ED because of the same health problem. There were seven items in the demographic part of the questionnaire measuring functional status of older patients at discharge, using a published instrument from Rowland et al.²⁵ Respondents were asked to circle the appropriate option 'yes/no'. It was revealed from the pilot study that nurses should have the opportunity to answer also at a neutral level. Family members and nurses were asked to consider whether older patients needed help with their mobility, if they could collect their own pensions or do their own shopping, and whether they received meals on wheels, attended day centers or hospital day units, received home help, and/or could not dress themselves in the ED.

The demographic characteristics of the nurses included age, gender, marital status, highest professional education, and their work experience in healthcare, emergency medicine, and the current ED where the data were collected. Nurses were asked to specify the number of nurses working in their ED and the number of older patients visiting the ED during one shift, the reasons for visits, and the day of the week when most of the older patients came, the time that family members spent in the ED, and the type of transport older patients used to arrive at the ED. To come up with relevant experiences related to family health, each nurse was asked to think about the most recent older patient (and his or her family) the nurse had met and taken care of in the ED.

Sample and data collection

A total of 367 questionnaires for family members and 144 for nurses were distributed to EDs in two regional and two central Estonian hospitals. Regional hospitals are the top main healthcare providers in a country of about 1,325,000 inhabitants. There is extended specialist care, compared with central hospitals, and medical care is offered in all the specialist fields except ophthalmology and obstetrics. In central hospitals fewer specialists and services are provided. In Estonia around 30% of the population speak Russian as their mother tongue.^{26,27} Most of the Russian-speaking population live in the eastern part of Estonia. One central hospital situated in the eastern part of the country participated in the study.

Data were collected from February to June 2014. First, questionnaires were distributed to family members of older patients who had been discharged home by ED nurses or the researcher. The latter spent 141 hours delivering the questionnaires. In the present study, a family member was defined as someone accompanying an older patient to the ED. The questionnaires were sealed inside envelopes. Family members were asked to send the completed

questionnaire back to the researcher by post within 14 days of discharge. They were asked to describe their view on how the family responded to the visit, and their general experience of family health during their ED stay. The family members could choose whether to answer the questionnaire in Estonian or Russian.

After the questionnaires were filled in by family members, nurses were asked to participate in the study. The chief nurse or contact person for each ED informed the researcher of the number of nurses working in the department, as well as the mother tongue of each. Questionnaires were delivered directly to nurses in envelopes by the researcher. Completed questionnaires in sealed envelopes were collected in a special collecting box in the ED. Nurses could choose whether to complete the questionnaire in Estonian or Russian.

A total of 204 responses were returned to the researcher (response rate: family members 30%, nurses 65%). The study sample consisted of family members aged ≥ 18 years ($n=111$) of older patients (≥ 65 years), who were discharged from the ED to home care, and of nurses ($n=93$).

Ethical considerations

Permission to use the FAFHES instrument was received from all its authors.¹⁴ Written permission to conduct the research was obtained from the Tallinn Medical Research Ethics Committee (Nr183) and the administrative staff of the participating hospitals. Family members received both written and verbal information related to voluntary-based participation, data protection issues, and confidentiality, and nurses or the researcher invited them to participate in the study. In addition, posters with information related to the study were hung in the waiting rooms of the EDs throughout the data collection period in both Estonian and Russian. Both nurses and family members were informed that they could contact the researcher if they needed to.^{28 (p.93),29} Administrative and clinical staff meetings were organized, at which the researcher introduced the study's aim and data collection process. In every department a contact person had agreed to be available and could be contacted if necessary. Anonymity of respondents was guaranteed.

Data analysis

Descriptive statistics were used for synthesis and summary of the data.^{28(p.389)} Some background factors for both family members and nurses were gathered. The age of family members was grouped as follows: 18–29 years, 30–50 years, 51–64 years, 65–74 years; however, the age of older patients was put into two groups of 65–74 years and ≥ 75 years. Marital status was either 'married' (married, cohabiting) or 'single' (not married, divorced, widowed). Education was divided into two groups of university and school. Social status was grouped as 'working' and 'other' (studying, retired). Relationships to the older patients were modified into three groups: 'spouse', 'child'

(son, daughter), and 'other' (brother, sister, friend, friend of the family, relative). Health condition was allocated to one of two groups: poor and rather poor were merged into 'poor', and rather good and good were merged into 'good'. No one answered at a neutral level 'not good/not poor'. The time spent in the ED, defined as time from patient admission to time the patient leaves the ED, was gathered from four into two groups: '<3 hours' and '≥3 hours'.

The day of the week when older patients visited the ED was modified to 'weekday' and 'other'. Transport used by the older person to arrive at the unit was grouped as 'ambulance service' and 'other' (own transport, taxi, with help of relatives, friends). Reasons older patients visited the ED were divided into eight groups through use of content analysis: musculoskeletal, abdominal, cardiovascular, mental health issues, neurological, adverse drug reactions, dermatological, and respiratory.³ Also reported were concrete health problems, why older patients sought help in the ED, no poor health, or unspecified conditions.

The age of the nurses was grouped: <35 years and ≥35 years. Among the nurses the group 'married' consisted of people who lived together (married, cohabiting) and the other group was designated as 'single' (not married, divorced, widowed). The highest professional education was modified to 'registered nurse' (RN) and the rest were counted as 'advanced nursing' (nurse specialist in emergency medicine or intensive care nursing, master of nursing or social sciences). Work experience in healthcare, emergency medicine, and the current ED was grouped: <5 and ≥5 years.

Reasons for ED visits differed for family members and formed seven groups: musculoskeletal, abdominal, cardiovascular, neurological, poor health, respiratory conditions,³ and 'other' (people know that all possible diagnostics can be performed in the ED; do not have transport to go to the family doctor; have difficulties getting an appointment with the family doctor; experience social problems; and/or any disease). The differences were a result of the health conditions presented by the respondents. The day of the week when older patients mostly visited the ED was coded as 'weekday' and 'other' (all weekdays/does not matter what day of the week; every day, on holidays/public holidays). Time spent in the ED fell into two groups: <3 and ≥3 hours. The transport used by older patients for arrival at the unit was: 'ambulance service' and 'other' (own transport, taxi, help of relatives; car of his or her son/daughter; came on own; public transport; other transport).

When analyzing functional status,²⁵ a patient was at risk of ED admission and discharge if the questions elicited four or more positive answers out of seven. The first question involved the FAFHES score and the second the binary variable that indicates, based on the Rowland et al.'s seven questions evaluating functional status,²⁵ whether there is a risk for readmission. The answers were used for all the participants, so a new binary variable (0=no risk, 1=increased risk) from these individual answers was created.

To compare group means Student's *t*-test and one-way analysis of variance (ANOVA) were used for normally distributed variables. For between-group comparisons in post hoc analyses Bonferroni correction was used. As the family-health dimensions of wellbeing and ill-being did not meet the assumption of normality, the Mann-Whitney U-test and the Kruskal-Wallis test were used to discover differences or associations. Spearman's correlation and linear regression were used to find the relationship within explanatory variables. Mean (*M*) and standard deviation (*SD*) were used to present data when answering the research questions. To summarize the relationship between two categorical variables, cross-tabulation was used. To estimate the reliability of the summated variables Cronbach's α was used.^{28(p.326)} The level of statistical significance was set at $p < 0.05$. Statistical analysis was carried out using the Statistical Package for the Social Sciences (SPSS) version 24.

Results

Participants

Of the family members who participated in the study, 73% were women and 68% were married. The age of family members varied from 18 years to 79 years ($M=47.64$); 54% had graduated from high school and 74% reported working at the time of data collection, and 43% identified themselves as 'other' than spouse or child (relative or a friend) for older patients (Table 2). Of the family members, 71% spent up to three hours in the ED, 57% evaluated their health condition as good during their ED stay, and 53% did not need help with daily life; 58% answered the questionnaire in Russian. The age of the older patients ranged from 65 years to 92 years ($M=75.04$); 55% were women, 46% were married, and 81% had graduated from school (Table 2). Of the older patients, 48% needed help from relatives with daily life before the ED visit. In this study, 30% of the older patients had visited an ED over the previous 12 months for the same health problem.

Of the nurses, 92% were women and 73% were married; the age of nurses varied from 21 years to 60 years ($M=35.16$) (Table 3); 84% reported their highest nursing professional education as RN, 62% reported working in healthcare for longer than five years, 53% had worked in emergency medicine for up to five years, and 55% also had work experience in the current ED of up to five years. The mean number of nurses who worked in one ED was 41, ranging from 5 to 100 ($M=41.14$). Nurses noted that, during one shift, there were on average 54 older patients visiting the ED, the number being in the range 9–160. Of the nurses 65% answered the questionnaire in Russian.

Seventy percent of the family members noted that older patients visited the ED on weekdays, whereas 60% of the nurses reported that there was no preference for any day of the week for these visits, all days being busy. Thirty percent of the family members pointed out that musculoskeletal problems were the reason for seeking help, whereas 39%

Table 2. Characteristics of family members and older patients.

Variable	Family members n = 111		Older patients n = 111	
	n	%	n	%
Age				
18–29	19	17		
30–50	37	33		
51–64	31	28		
65–74	24	22	52	47
≥75			59	53
Gender				
Female	81	73	61	55
Male	30	27	50	45
Marital status				
Married	76	68	51	46
Single	35	32	60	54
Highest education				
School	60	54	90	81
University	51	46	21	19
Social status				
Working	82	74		
Other	29	26		
Relationship to the older patient				
Spouse	18	16		
Child	45	41		
Other	48	43		
Family member living together with the older patient				
Yes	42	38		
No	69	62		
Health condition of family member				
Poor	47	43		
Good	64	57		
Time family members spent in ED (hours)				
<3	78	70		
≥3	33	30		
Main reason why older patient visited ED				
Musculoskeletal	33	30		
Abdominal	20	18		
Cardiovascular	18	16		
Mental health issues	17	15		
Neurological	15	13		
Adverse drug reaction	13	11		
Dermatological	9	8		
Respiratory	2	2		
Day of the week when older patient visited ED				
Weekday	78	70		
Other	33	30		
Arrival at ED by				
Ambulance service	39	35		
Other	73	66		

(continued)

Table 2. Continued

Variable	Family members n = 111		Older patients n = 111	
	n	%	n	%
Previous visits to ED because of same health problem of older patient				
Yes	32	30		
No	78	70		

Table 3. Characteristics of nurses.

Variable	n = 93	%
Age		
<35	48	52
≥35	45	48
Gender		
Female	86	92
Male	7	8
Marital status		
Married	68	73
Single	25	27
Highest professional education		
Registered Nurse (RN)	78	84
Advanced nursing	15	16
Work experience in healthcare (years)		
<5	35	38
≥5	58	62
Work experience in emergency medicine (years)		
<5	44	48
≥5	49	53
Work experience in current ED (years)		
<5	51	55
≥5	42	45
Main reason older patient visited ED		
Cardiovascular	36	39
Musculoskeletal	23	25
Poor health	15	16
Neurological	10	11
Abdominal	4	4
Respiratory	1	1
Other	4	4
Day of the week when older patient visited ED		
Weekday	29	40
Other	64	60
Time family members spent in ED (hours)		
<3	46	49
≥3	47	51
Older patient arrived at the ED by		
Ambulance service	52	56
Other	41	44

Table 4. Family health described by family members and nurses.

	Family members M (SD)	Nurses M (SD)	p-value
Family health	3.75 (0.88)	3.74 (0.74)	0.639
Values	3.90 (1.19)	3.63 (0.96)	0.059
Express oneself freely			
Feeling of safety in family			
Similar sense of humor			
Help of playful attitude			
Close relationships in family			
Wellbeing	3.50 (1.16)	3.44 (0.92)	0.639
Pain experience			
Symptoms experience			
Worries about health condition			
Knowledge	3.84 (1.08)	3.98 (1.01)	0.335
Knowledge of illness			
Knowledge about doing things together despite the illness			
Knowledge about seeking help if symptoms fail to abate			
Ability to help ill family member			
Knowledge about where to seek help if needed			
Activities	3.65 (1.09)	3.86 (1.04)	0.148
Activities related to healthy nutrition			
Family taking care of health			
Health-related discussions			

of the nurses reported that cardiovascular problems were the main presentation in the ED. Forty-one percent of the family members and 27% of nurses found that there was risk of readmission when evaluating functional status at discharge.

Family health described by family members

Family members rated family health in EDs as being at a moderate level ($M = 3.75$, $SD = 0.88$). Living with a family member was related to family health ($p = 0.013$), that is, family health was better when living together. Some differences were identified between family health and education of the older patient, family health and family members' relationship to the older patients (Table 4).

Family members reported their family's health-related values ($M = 3.90$, $SD = 1.19$) as being at a moderate level. Related to this, there was a statistically significant difference between health-related values and family members' need for help in daily life ($p = 0.017$) (Table 5). The wellbeing of the family members ($M = 3.50$, $SD = 1.16$) during an ED stay was experienced at the moderate level. There was a statistically significant difference between

wellbeing of the family member and previous ED visits because of the same health problem of older patient ($p = 0.014$). Family members experienced issues related to ill-being ($M = 3.71$, $SD = 1.00$) at the moderate level. There were some differences among issues related to ill-being and living with family members: the method of arrival at the ED when older patients arrived by ambulance; ill-being and previous visit to the ED for the same health problem; ill-being and the need of older patients to have help from family members and the frequency – noted as frequent.

Health-related knowledge ($M = 3.84$, $SD = 1.08$) was reported at the moderate level. There were statistically significant differences between health-related knowledge and living together with the family member ($p = 0.007$); health-related knowledge and the family member's need for help in daily life ($p = 0.008$); health-related knowledge and education of the older patient ($p = 0.004$) (Table 5).

Health-related activities were at the moderate level ($M = 3.65$, $SD = 1.09$). It was found that the time spent by family members in the ED was related to activities within the family. The more time the family members spent in the ED the worse the health-related activities were ($p = 0.05$). There were differences in health-related activities with regards to living with a family member, poor health condition of a family member, need of a family member for help with daily life, family spending up to three hours in the ED, previous visits to the ED for the same health problem, and frequent need of older patients for help from family members. The variations appear to differ significantly (Table 5).

Family health described by nurses

Nurses reported that family health in EDs was supported at a moderate level ($M = 3.74$, $SD = 0.74$). No differences were identified between family health and any background factors. According to the nurses, family values ($M = 3.63$, $SD = 0.96$) were supported at a moderate level in EDs. Cardiovascular problems were found to be associated with family values ($p = 0.009$), which were disrupted when older patients visited an ED with such problems. There were differences between family values and arrival by ambulance of older patients at the ED ($p = 0.045$).

Wellbeing ($M = 3.44$, $SD = 0.92$) was supported by the nurses at a moderate level. The ill-being of the family ($M = 3.70$, $SD = 0.98$), health-related knowledge ($M = 3.98$, $SD = 1.01$), and activities supported during the ED visit were found to be at a moderate level. Ill-being differed from the need of family members for help with daily life from other family members ($p = 0.035$), and this difference appeared to be highly significant. No other associations or differences were identified.

According to the opinions of the family members ($M = 3.74$, $SD = 0.74$), family health was experienced at the same moderate level as nurses reported. There were no significant differences between the family members' and the nurses' ratings (Table 4).

Table 5. Background factors of family members and family health.

Variable	Family health Md (Q1; Q3)	p	Values M (SD)	p	Wellbeing Md (Q1; Q3)	p	Ill-being Md (Q1; Q3)	p	Knowledge M (SD)	p	Activities M (SD)	p
Relationship to the												
older patient:												
spouse	4.07 (2.86; 4.44)	0.118	3.82 (0.98)	0.032	3.83 (2.67; 4.42)	0.295	4.10 (2.40; 4.80)	0.259	3.99 (1.07)	0.622	3.83 (0.88)	0.645
child	4.05 (3.36; 4.52)		4.25 (1.26)		4.00 (2.83; 4.67)		4.00 (3.20; 4.40)		3.89 (1.08)		3.67 (1.04)	
other	3.52 (2.96; 4.29)		3.61 (1.12)		3.33 (2.33; 4.25)		3.50 (3.00; 4.40)		3.73 (1.08)		3.56 (1.21)	
Living together with older patient who visited ED:												
yes	4.05 (3.50; 4.48)	0.030	3.96 (1.08)	0.709	3.83 (2.67; 4.42)	0.728	4.10 (3.55; 4.80)	0.007	4.22 (0.95)	0.003	4.08 (0.90)	0.001
no	3.57 (3.00; 4.38)		3.87 (1.25)		3.67 (2.67; 4.33)		3.60 (2.80; 4.20)		3.60 (1.08)		3.39 (1.11)	
Family members own health condition at the moment:												
poor	4.00 (3.19; 4.48)	0.193	4.00 (1.17)	0.483	3.67 (2.67; 4.33)	0.827	4.00 (3.20; 4.80)	0.081	4.00 (1.05)	0.175	3.90 (1.03)	0.036
good	3.69 (3.05; 4.43)		3.83 (1.20)		3.50 (2.67; 4.33)		3.60 (2.85; 4.35)		3.72 (1.08)		3.46 (1.10)	
Family member need for help in daily life from:												
family members	4.21 (3.50; 4.58)	0.053	4.38 (1.09)	0.017	3.33 (2.58; 4.67)	0.08	4.10 (3.35; 4.80)	0.265	4.27 (1.08)	0.008	4.06 (1.18)	0.026
social services	2.90 (1.93; 4.14)		3.12 (1.36)		2.00 (1.00; 3.17)		2.40 (2.00; 4.60)		3.32 (1.13)		3.07 (1.11)	
home-care nursing	3.33 (2.52; 4.48)		3.38 (1.26)		3.00 (2.67; 4.33)		4.00 (2.40; 5.00)		3.53 (1.01)		3.61 (0.89)	
Hours family members spent in ED:												
<3	3.08 (0.00; 3.76)	0.656	3.87 (1.18)	0.702	2.67 (0.00; 3.67)	0.123	3.00 (0.00; 3.60)	0.395	3.81 (1.05)	0.652	3.48 (1.03)	0.011
≥3	4.05 (3.00; 4.48)		3.97 (1.21)		3.00 (2.33; 4.00)		4.00 (3.00; 4.50)		3.91 (1.15)		4.05 (1.12)	
Highest education of older patient:												
school	3.74 (3.00; 4.43)	0.026	3.80 (1.16)	0.054	3.33 (2.67; 4.33)	0.475	3.60 (3.00; 4.40)	0.110	3.72 (1.10)	0.004	3.57 (1.06)	0.102
university	4.33 (3.60; 4.74)		4.35 (1.21)		4.00 (2.33; 4.67)		4.20 (3.30; 4.80)		4.34 (0.76)		4.00 (1.15)	
Older patient arrived by:												
ambulance service	4.00 (3.33; 4.43)	0.473	3.90 (1.08)	0.973	3.67 (2.33; 4.33)	0.882	4.00 (3.60; 4.80)	0.033	3.93 (0.99)	0.518	3.77 (1.04)	0.394
other	3.83 (3.00; 4.43)		3.91 (1.25)		3.67 (2.67; 4.33)		3.60 (3.00; 4.35)		3.79 (1.12)		3.58 (1.11)	
Previous visits because of same health problem of older patient:												
yes	4.00 (3.33; 4.33)	0.540	3.87 (1.13)	0.906	3.00 (2.00; 4.00)	0.014	4.20 (3.60; 4.80)	0.025	4.08 (0.95)	0.099	3.96 (1.02)	0.038
no	3.76 (3.00; 4.45)		3.90 (1.21)		4.00 (3.00; 4.67)		3.60 (3.00; 4.40)		3.71 (1.10)		3.49 (1.08)	

(continued)

Table 5. Continued

Variable	Family health		p	Values		p	Wellbeing		p	Ill-being		p	Knowledge		p	Activities	
	Md (Q1; Q3)	M (SD)		Md (Q1; Q3)	Md (Q1; Q3)		M (SD)	M (SD)		M (SD)	M (SD)						
Older patient needs help in daily life from:																	
family members	3.98 (3.33; 4.57)	4.04 (1.27)	0.197	3.00 (2.33; 4.42)	4.00 (3.35; 4.80)	0.217	4.00 (3.35; 4.80)	0.039	4.26 (1.00)	0.134	3.87 (1.19)	0.153					
social services	2.26 (2.00; 0.00)	2.30 (0.42)		2.17 (2.00; 0.00)	2.40 (2.00; 0.00)		2.40 (2.00; 0.00)		2.30 (0.42)		2.00 (0.00)						
home-care nursing	3.42 (0.00; 4.33)	4.02 (1.20)		3.17 (0.00; 4.17)	3.55 (0.00; 4.40)		3.55 (0.00; 4.40)		4.20 (0.98)		4.00 (0.66)						
Frequency of help from family members:																	
often	3.62 (3.00; 4.43)	4.00 (1.24)	0.365	3.67 (3.00; 4.33)	3.60 (3.00; 4.40)	0.113	3.60 (3.00; 4.40)	0.010	4.38 (1.00)	0.467	4.40 (0.95)	0.004					
sometimes	4.00 (3.52; 4.57)	4.07 (1.33)		3.00 (2.00; 4.00)	4.40 (4.00; 5.00)		4.40 (4.00; 5.00)		4.14 (1.03)		3.33 (1.19)						

Note. $p = p$ -value. $p < 0.05$ are shown in bold font.

Discussion

This study describes family health evaluated by family members of older patients and rated by nurses in EDs. Of the family members, 58% completed the questionnaire in Russian while only 30% of the Estonian population speak Russian as their mother tongue.^{26,27} The researcher delivered the questionnaires with no language preference. According to the family members, older patients presented in EDs mostly on weekends or at the start of the week. These findings seem logical because family doctors are unavailable at weekends. It could be problematic to get an appointment with a physician or nurse on the day after the weekend, and older patients tend to have multiple diseases that occasionally get worse for varied reasons.³⁰ The availability of a family physician and his or her team at weekends and later in the evening on weekdays should be considered when planning primary healthcare.

Families stated that older patients visited EDs because of adverse drug reactions. This may be due to patients not understanding the information given to them by medical staff on discharge or by specialists whom they had visited on the last occasion. Nurses should be convinced that the information shared at discharge is clear enough and acceptable to both the patient and the family.³ More attention should be paid by nurses to the discharge process, to avoid cyclical readmissions and to prevent the burden of older patients on EDs.

In the present study, 30% of the older patients had visited an ED over the previous 12 months for the same health problem. A literature review shows that unresolved problems in EDs were identified as factors affecting discharge, as well as the social and health problems associated with repeat ED visits.³ Education at discharge must be improved.³¹

Furthermore, family members described family health during an ED stay as being at a moderate level. For older patients who lived with the family, better family health was described. The results confirm statements by sociological scientists, who claim that the family is a group of people living together who depend on each other on the emotional, physical, and economic level.^{11(p.12)} There is evidence that any stressful situation may worsen family health. Close relationships were important for the family.¹⁴

It was found that 84% of the investigated nurses reported their highest education as registered nurse. Only a few had specialized in emergency medicine or critical-care nursing, not to mention master's studies or an even higher educational level. Educated and trained nursing staff are a valuable resource for quality service in EDs.³² Callander and Schofield looked at ED workforce models and concluded that senior staffing, matching peak staffing levels with peak patient demand, having appropriately skilled staff mixes, and designing the staff profiles based on individual hospital needs, produce the most effective outcomes.³³

There are about 9000 RNs but only 8% of them are being registered as emergency and critical-care nurses in Estonia.³⁴ This clearly shows the need for nurses in this area. The admission requirements for specialized training

in nursing should be reviewed, allowing more nurses to acquire the necessary competencies.

It appears that both family members and nurses in general described family health as being at the same moderate level. From one perspective it was good that family health was not reported as poor, and families could continue to care for older patients at home. But, from another perspective, to ensure quality of care, a higher level of responses was expected. The FAFHES instrument enabled responses at a higher level. Thus, there is a need for further development of nursing care provided in EDs, to a level where family-health-related issues have more and better support.

It has not been possible to evaluate whether the opinions of family members and nurses matched. Family members who accompanied older patients to EDs, and who are likely to care for the patients after discharge, were involved in the study. Their opinions are important when planning after-care and assessing the readiness of the family to be responsible for older patients.

Methodological considerations

The present study had several strengths. The valid instrument earlier developed was modified for use in ED settings. To the best of our knowledge, the current topic has not been investigated before in the ED context. In the present study we received viewpoints of both family members and ED nurses. However, some limitations were identified. First, data were collected from family members and later from nurses, with no matching of the families. Family members answered from their own points of view, and nurses were asked to think about the most recent older patient and family whom they cared for. Second, data collection in a country where nursing research is not so common is demanding. The researcher involved participants in the study and placed informative posters in the EDs so that all visitors knew about the study being conducted. A larger sample size had been expected. The lowest response rates were found within settings where the researcher was not present when the data were collected.^{28(p.276),35} In addition to this, the FAFHES instrument had not been used before in ED settings, so further development of the family health scale, especially when used for family members, is needed. There are lower Cronbach's α values when describing family-related activities of family members; this calls for a modification of the instrument to be more ED specific. Based on the descriptions from the nurses, the family health scale was acceptable at this stage, possibly resulting from the fact that nurses tend to think more largely than family members. In addition, the current findings may result from the fact that most of the nurses who worked in the ED at the moment of data collection were Russian speakers, and for them it was more convenient to communicate with patients and families in their mother tongue when involving families in the study.

It is up to future research to determine whether the questionnaire should undergo additional development

to suit ED settings relative to concerned study groups. In addition, more EDs can be involved in the study, not only from regional and central hospitals. There is a lack of literature evaluating family health in EDs and its subareas (values, wellbeing, ill-being, knowledge, activities) related to the present study. Literature from different nursing areas was used in the literature review and possible comparisons, because there are limited numbers of papers describing family health. This complicated the comparison of results.

Knowledge related to family health and support by nurses could improve the quality of nursing care provided in EDs and the discharge process from EDs. It may positively affect further after-care or the environment for coping at home, improve patients' health outcomes, and reduce costs by preventing unexpected readmissions. Knowledge of family health during an ED stay from the perspective of family members allows more collaboration and exchange of experience across different healthcare teams, which would contribute to ensuring the quality of treatment.

Conclusions

The family members of older patients and ED nurses generally spoke at the same level with regard to family health. The nursing care provided for older patients and their families should be more supportive, by providing all required information to families to enable them to take care of older patients at home. Families have a huge role in continuing the care of older patients after they have been discharged. Emergency department nurses should recognize the level of family health, in order to ensure that the family will cope at home. In addition, attention should be paid to those older patients discharged from the ED after having received medical help, who live alone and need continuing care at home. After-care service providers and the primary healthcare sector should be integrated in this way, to treat this group to a greater extent. It can be assumed that continuity of care and older patients' health outcomes when they live alone are worse than when living with the family. This may produce readmissions to EDs, overload of ambulance services, and increases in healthcare costs.

Family health and support in EDs need to be reviewed over time. A longitudinal study should be considered to describe the situation in EDs and allow comparison of results over time.

Acknowledgments

We thank the family members and the ED nurses who participated in the present study for their valuable contributions to the research.

Funding

The authors have declared receipt of funding from the following source: University of Tampere, School of Health Sciences.

Conflict of interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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ORIGINAL ARTICLE

Social support received by the family of older patients in emergency department: A cross-sectional study

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Received: October 17, 2017

Accepted: November 23, 2017

Online Published: December 5, 2017

DOI: 10.5430/cns.v6n2p1

URL: <https://doi.org/10.5430/cns.v6n2p1>

ABSTRACT

Poor social support provided within health care settings may reduce patients' ability to manage disease. The presence of family members in emergency department (ED) may reduce the patient's need for health care and social services utilization. The aim of the study was to describe the social support received by family in the ED. A cross-sectional empirical study design was used. Convenience sample of 111 family members of home discharged older patients and of 93 nurses were recruited. The study was conducted at four Estonian hospitals. Data were collected by using social support scale of the Family Functioning, Health and Social Support (FAFHES). Family members and nurses both considered the social support available in EDs to be moderate. Nurses believed they provided higher levels of social support than the family members stated the family received. The differences were statistically significant. The older a nurse was, the less reinforcement, feedback, and affecting others for finding solutions was offered. A greater number of nurses working in the ED resulted in less social support. This study found differences of views between family members of older patients and nurses regarding the level of social support of the family. Nursing care provided in ED should be developed to be more supportive. To ensure more family-centred approach when providing nursing care, the administrative staff needs to consider whether an adequate number of nurses are working in the ED. The social support scale used was found to be applicable in ED environments.

Key Words: Emergency department, Family members, Nursing care, Older patients, Social support

1. INTRODUCTION

Social support refers to physical and psychosocial assistance provided to an individual by people close to him or her.^[1] According to Kahn,^[2] social support is understood as purposeful interaction between people that may involve one or more of the following components: affirmation, a process of reinforcing feedback and guiding others in finding appropriate solutions; concrete aid, including materials, money or time spent taking care of others; and emotional support, which may be understood as a feeling of safety, esteem, value, and

respect. Social support within the nursing field is understood as an influential relationship between health care provider as nurse and health care user as family, where family is seen as identical member in a free and agreed climate.^[3]

Poor health, the presence of chronic disease, and frequent use of health care services often prompt older patients to apply for social support.^[4-6] For these patients, social support networks often consist of health care professionals, family members, and partners.^[7]

Higher scores in perceived social support, higher levels of

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cognitive functioning, and increased daily living activities by older patients predict depression.^[8,9] Kaur et al.^[10] found that poor self-care in older patients was significantly related to the need for social support. However, married older patients needed less social support offered by health care professionals than those without a partner.^[11] According to urban Taiwanese older patients found that age, marital status, and education were generally related to the received social support.^[6] In a study conducted across seven European countries it was revealed that low levels of social support were associated with older patients' age and their psychological abuse.^[4] One cross-sectional study examined older patients and social support in relation to quality of life and found that older patients received social support mostly from family, friends, and other people close to them.^[12] Ha et al.^[13] investigated the relationship between health among older patients and social support provided by their family members. It was made clear that older patients' poor health was related to insufficient contact and interaction with friends and family members.^[13] Risk factors related to harmful outcomes among older patients discharged home from hospital care were lack of social support, low functional status, and needing to take a number of different medications.^[14]

A recent study conducted within oncological settings revealed that poor social support provided by healthcare professionals may reduce patients' ability to manage disease.^[15] Older patients who arrived at the emergency department (ED) in an ambulance had received less social support than those who used their own transport.^[16]

Older patients who used social care services were found to be greater hospital care utilizers compared to those who did not.^[17] Older people who received care at nursing homes had lower proportions of emergency service utilization than older patients who received care at home.^[17] Parsons et al.^[18] and Naughton et al.^[19] suggested that complex geriatric assessments, including identifying social needs and evaluating physical function, may improve health outcomes of older patients. Appropriate guidelines aimed to regulate best practices may result in better care of older patients in EDs.^[20] Accessibility of support in an ED worsened when the amount of patients increased and the duties of nurses expanded.^[21]

Social support has been investigated in relation to several clinical conditions like mental disorders,^[22] cancer,^[15] and heart disease,^[3] and was found to be sufficient, but ED settings not been researched. Earlier study has shown associations between background factors such as marital status and education to social support. Those patients who were single reported greater need for social support from health care professionals than those who were married.^[23] Those with lower education experienced more social support from

family, colleagues, or people close to them than people with higher education.^[24] The current study is centered on three subareas of social support, affirmation, concrete aid, and affect,^[3] that were found to be crucial in maintaining cognitive behavior of older patients.^[25]

1.1 Background

Affirmation, one of the subareas of social support, is a process of reinforcing feedback and guiding others in finding appropriate solutions.^[3] Swedish ED nurses acknowledged the need to show empathy and to be aware of older patients' social environments in order to provide appropriate nursing care in the ED.^[26] In one Finnish study, patients with previous hospital experience demonstrated greater motivation for self-care, which provided them with a better ability to cope with their condition.^[27] A study by Flynn et al.^[28] showed that decision support and related interventions were associated with an increase in patient knowledge, decision-making, desire for participation, and satisfaction with care received.

Another subarea of social support is concrete aid, including materials, money, or time spent taking care of others.^[3] Support for hospital patients and associated factors were examined by Mattila et al.,^[21] who found that patients were most dissatisfied with information provided regarding significance of lifestyles to health and access to written information. A Finnish study that investigated the experiences of family members of older patients in EDs revealed that family members wanted to be involved in the care process.^[29]

After discharge, older patients often continue care at home. Health care professionals may help families and older patients by creating activity plans related to older patients' ability to cope with health problems at home, which reinforces social support.^[30] The findings of Leikkola et al.^[27] highlight the importance of patient education and meeting families' information needs regarding providing in-home support. Older patients stated that adequate information received upon discharge helped support their coping at home.^[27] However, Themessel-Huber et al.^[31] found that older patients are often unlikely to trust available services, and instead rely on their family members. They described older patients waiting throughout the day for family members to return from work to help them.^[31]

Affect, the third subarea of social support, is understood as a feeling of safety, esteem, value, or respect.^[3] In a study conducted within ED settings, older patients felt uncared for and that their needs were not taken into account by nurses.^[32] According to Finnish patients' experiences, nurses were too occupied to be involved in patients' care planning.^[21]

Themessel-Huber and colleagues^[31] noted that social sup-

port is important to both patients and their families, and is an essential factor of quality nursing care. Older patients tend to be higher users of both health care and social services.^[31] In European countries, hospital stays have been reduced, and the focus of treatment is at-home care. Some older patients avoid hospitals, and only seek help after their condition has seriously deteriorated. This has created the need to provide more comprehensive care for older patients in an ED before they are discharged home.^[31] The current study provides information on social support provided by nurses to families in EDs. This cross-sectional study evaluates the current situation in four Estonian EDs in order to indicate the need for intervention and improve nursing care for older patients and their family.

1.2 Aim of the study

The aim of this study was to describe the social support received by older patients' families and to present the differences between the social support received by families and provided by nurses in EDs. The following questions were set out:

- How do family members describe the social support received by family from nurses in the EDs?
- How do nurses describe the social support received by family in the EDs?
- How does the social support described by family members differ from that described by the nurses?

2. METHOD

2.1 Research design and sample

This cross-sectional study was conducted at four Estonian EDs. Data were collected from two regional and two central hospitals over five months in 2014. In Estonia, regional hospitals are the larger health care providers, as compared to central or general hospitals. On an average, there were amount of 220 patients treated in one regional hospital per day in 2014, as compared to general hospital where number of 229 patients were treated per month.^[33]

2.2 Sample and data collection

A convenience sample of family members aged ≥ 18 ($n = 111$) and ED nurses ($n = 93$) was taken. The first stage concentrated on family members' perceptions of social support received in the ED. A total of 367 questionnaires were distributed by the researcher and ED nurses to family members of older patients that were discharged home. The questionnaire was available in both Estonian and Russian. Respondents were asked to describe their view of the social support received by family during a recent ED stay, and how the family responded to that support. Family members of

home discharged older patients were asked to mail completed questionnaires to the researcher within two weeks after the date of discharge. Eight meetings were conducted with ED nurses and administrative staff to improve the data collection process, and informative posters were placed in the EDs. As a result, 111 (30%) questionnaires were returned to the researcher.

At the second stage, all nurses at the four participating EDs were asked to participate, thus, 144 questionnaires were distributed. The nurses answered questions regarding the social support offered to family of older patient during an ED visit, and how the family responded. Nurses received reminders to complete the questionnaire. At each ED, there were closed boxes for completed questionnaires. Ultimately 93 (65%) completed questionnaires were returned.

2.3 Instrument

To measure social support, this study used adapted version of the Family Functioning, Health and Social Support (FAFHES) instrument with 20 items.^[31] The original Finnish version was previously validated by Åstedt-Kurki et al.,^[31] but not in an ED setting. Therefore, the FAFHES was modified for this new environment. The final scale consisted of 20 items, as describing affirmation (6), concrete aid (6), and affect (8). One item describing affirmation in the original version was reassigned to the subarea describing concrete aid. Both questionnaires for family members and nurses were based on the original scale. Due to the high percentage of Russians living in Estonia (30%), the questionnaire was translated from English into both Estonian and Russian.^[34]

Internal consistency was measured by Cronbach alphas.^[35] The reliabilities of the FAFHES are presented in Table 1. For the entire scale of social support, Cronbach α was 0.90 for family members, and for nurses 0.95.

A six-point Likert scale was used for expressing respondent agreement with statements describing social support (from 1 = definitely disagree to 6 = definitely agree). Social support was considered to be poor if the mean was 1.00–2.75; moderate if it was 2.76–4.50; and good if it was 4.51–6.00.

The instrument was piloted in family members of discharged older patients ($n = 7$) and ED nurses ($n = 18$) in the EDs of three general hospitals. No questions were excluded.

2.4 Demographic variables

The demographic characteristics of family members included gender, age, marital status, social status, highest education, relationship to the older patient, and whether the family member lived with the patient. Family members were asked to assess their own health condition at the moment of the data

collection, their own need for help in daily life, and length of the time spent in the ED. They were also asked to provide information on the older patients, including gender, age, marital status, highest education, health problems, the amount of help they needed in daily life before the ED visit, the day of the week on which the ED was visited, the mode of transport used to reach the ED, and number of previous visits to the ED due to the same health problem during one year. The functional status of older patients at discharge was evaluated using seven questions of published instrument of Rowland et al.^[36] Four or more positive answers indicated an older patient considered to be at risk for readmission.^[36]

The demographic characteristics of nurses included gender, age, marital status, highest professional education, length of time spent working in health care, emergency medicine and the current ED, the number of nurses working in the ED, the number of older patients visiting the ED during one shift, the primary reason for the patient’s ED visit, the day of the week older patients most often visit the ED, older patients’ need of help in daily life before the ED visit, how many hours family members spend in the ED with older patients, the type of transport older patients use to arrive at the ED, and the functional status of older patients at discharge.

Table 1. The reliabilities of the FAFHES

Content of the items	Family members α	Nurses α
Social support (number of items)	0.90	0.95
Affirmation (6)	0.92	0.86
<ul style="list-style-type: none"> • Explanation related to involvement in care planning • Explanation related to care • Counselling related to matters of care • Discussions related to course of illness • Discussions related to older patients’ condition during ED stay • Discussions related to progress of care 		
Concrete aid (6)	0.61	0.91
<ul style="list-style-type: none"> • Discussions related to treatment options • Explanation about older patient’s diet • Explanation related to type of exercises older patient can take • Information regarding older patient’s mental exertion • Information regarding risks of bathing • Information regarding how illness affects sexual life 		
Affect (8)	0.88	0.93
<ul style="list-style-type: none"> • Family involvement in the patient’s care • Space for expressing feelings • Showing compassion for family • Feedback related to family involvement in care • Showing interest in family affairs • Showing appreciation for family involvement in the patient’s care • Showing consideration for the well-being of family • Showing interest in family coping with aftercare 		

2.5 Data analysis

The data were analyzed using Statistical Package for the Social Sciences (SPSS) 23.0. Descriptive statistics were used to describe basic features of the data. A *t*-test was used to compare group means. The Wilcoxon signed-rank test was used to assess differences between paired measurements. The Spearman rank correlation was used to measure the degree of association between two variables. A *p*-value of < .05 was considered statistically significant.

2.6 Ethical considerations

Ethical approval (NR 193) for the current study was obtained from the Tallinn Medical Research Ethics Committee. Informed consent was considered when family members and nurses after received research related information returned the questionnaires. Permission to use and modify FAFHES was gathered from all copyright holders. Study permissions were obtained from the managers of the EDs or appropriate clinics. Anonymity of the respondents was guaranteed.^[35]

Returning the questionnaires by post was free for the respondents. The respondents were able to contact the researcher if needed.^[37]

3. RESULTS

A total of 111 family members enrolled in the study. The majority were female (73%, $n = 81$), the age range was 19–79 years ($M = 47.64$), and 73% ($n = 81$) were married. Most (54%, $n = 60$) reported school as their highest education, and 74% ($n = 82$) had a job. When the relationship to the older patient was examined, it was found that 41% ($n = 45$) were children and 43% ($n = 48$) had a relationship to the patient other than that of a spouse or a child. Total of 62% ($n = 69$) did not live with the patient. Finally, 54% ($n = 64$) rated their own health as “good”.^c

According to family members, the older patients visited the ED due to musculoskeletal (30%, $n = 33$), abdominal (18%, $n = 20$), or cardiovascular (16%, $n = 18$) problems. Adverse drug reactions accounted for 11% ($n = 13$) of the visits. Most family members presented with older patients on weekdays (70%, $n = 78$). Over half (66%, $n = 73$) of the patients used a method of transport other than an ambulance service. For 70% ($n = 78$) of family members, the time spent in the ED was up to three hours. The majority of respondents (70%, $n = 78$) stated that the older patient had not been admitted to the ED for the same health problem in the past year.

Over half (55%, $n = 61$) the older patients were female, with an age range of 65–92 ($M = 75.04$); more than half (54%, $n = 60$) were single, and 81% ($n = 90$) had graduated from secondary school. A risk of readmission was found in 41% ($n = 45$) of the older patients, while four or more positive answers indicated that older patient was at risk for readmission.

A total of 93 nurses participated in the study. The majority (92%, $n = 86$) were female and married (73%, $n = 68$); their age range was 21–60 ($M = 35.16$). Most (84%, $n = 78$) reported registered nurse as their highest professional education. Over half (62%, $n = 58$) had over five years work experience in health care, slightly more than half (53%, $n = 49$) in emergency medicine. However, only 53% ($n = 49$) had worked at current ED for over five years. Nurses stated that older patients visited the ED due to cardiovascular problems (39%, $n = 36$), musculoskeletal problems (25%, $n = 23$), or poor health (16%, $n = 15$). More than half (60%, $n = 64$) stated that older patients did not prefer to visit the ED on a certain day of the week. Many nurses (56%, $n = 52$) claimed that older patients arrived by ambulance service. According to the nurses (51%, $n = 47$), family mem-

bers spent over three hours in the ED. Only 27% ($n = 25$) of ED nurses believed that older patients were at risk for readmission.

3.1 Social support evaluated by family members

The family members perceived the level of social support family received during the older patient’s ED stay as moderate ($M = 3.58$; $SD = 0.97$).

Affirmation, the subarea of social support that involves reinforcing, feedback and affecting others for finding solutions, was found to be at moderate level in the ED ($M = 3.68$; $SD = 1.11$). There was a statistically significant difference between affirmation of the family member and living together with older patient who visited ED ($p = .027$). Concrete aid, the subarea of social support understood as resources used for taking care of others, was evaluated at moderate level in the ED ($M = 3.44$; $SD = 1.09$). There was a statistically significant difference between concrete aid and age of older patient ($p = .013$). Affect, the subarea of social support affecting feelings of safety, esteem, value, and respect, was also evaluated at moderate level in the ED ($M = 3.62$; $SD = 1.13$).

3.2 Social support evaluated by nurses

Nurses rated the social support provided for families of patients in the ED at moderate level ($M = 3.93$; $SD = 0.83$). The number of nurses working in the ED and level of social support ($p = .049$) were negatively correlated: the more nurses working in the ED, the less social support they provided.

Affirmation was evaluated at moderate level ($M = 4.02$; $SD = 0.94$). There was weak negative correlation identified between a nurse’s age and affirmation ($p = .047$). The older the nurse, the less he or she offered reinforcement, feedback, and influenced others. Concrete aid was evaluated at moderate level ($M = 3.79$; $SD = 0.94$), as was affect ($M = 3.97$; $SD = 0.97$).

3.3 The differences between descriptions of social support received by family and offered by nurses

Nurses reported that they had offered social support to families of older patients at a higher level than family members reported the family had received ($p = .006$) in the ED. The differences between the social support received by families and provided by nurses in EDs are presented in Table 2. Within all subareas of social support, the nurses believed they had provided more social support than family members reported the family received.

Table 2. The differences between the social support received by families and provided by nurses in EDs

	Family members M (SD)	Nurses M (SD)	p-value
Social support (number of items)	3.58 (0.97)	3.93 (0.83)	.006
Affirmation (6)	3.68 (1.11)	4.02 (0.94)	.016
Concrete aid (6)	3.44 (1.09)	3.79 (0.94)	.013
Affect (8)	3.62 (1.13)	3.97 (0.97)	.016

4. DISCUSSION

In this study, social support perceived by family from nurses was found to be moderate. The results show that nurses believed they provided more social support than family members described family received. The potential consequences of these results are supported by the following findings. Ha et al.^[13] stated that insufficient social support is related to the poor health of the older patient. Poor social support provided by healthcare professionals may reduce patients' ability to cope with illness.^[15] A lack of social support is considered a risk factor of for harmful outcomes among older patients discharged home.^[14] This may lead to an increase in health care utilization and related costs. Frequent use of health care services is one reason older patients apply for social support,^[4-6] and should be considered when providing ED care for this population.

It was found that one subarea of social support was associated with older patients' age. This finding is supported by Dai et al.,^[6] who identified that few demographic characteristics as age, marital status, and education were generally related to the received social support. In addition, living together with older patient who visited ED was associated with another subarea of social support. This result is confirmed by Ha et al.,^[13] who presented that older patients' poor health was related to insufficient contact and interaction with friends and family members. This may be suggested, that if the older patient lives with a family member the better social support may be perceived.

According to 41% of family members, older patients were at risk for readmission at discharge. Readmissions may be reduced by providing a comprehensive geriatric assessment that evaluates both physical function and the need for social care.^[18,19,31] In cases where older patients are at risk for readmission, related crucial information should be described in a medical report or referrals directed to the primary care level regarding after-care issues. This idea is supported by Naughton et al.,^[19] who highlighted the need for complete referrals containing sufficient information. It was found that older patients were discharged from the ED with inadequate information on their referral sheets.^[19]

In addition, over half the nurses claimed that older patients

were transported to the ED by an ambulance service. It would seem that patients arrived by ambulance might lead to more social support. This can lead to the findings revealed from the study by Moonesar et al.,^[16] in which older people who arrived at the ED via ambulance were found to have significantly lower social support than those who used their own transport. The results specific to the use of transport lead us to the fact that social support in ED would have to be more assessed and assured.

Older patients who live alone are more likely to visit the ED and may have a greater need for social services than those who live with their family.^[23] In the current study, more than half the family members reported that they did not live with the older patient. According to Banbury et al.^[7] family members are crucial parts of older patients' social networks.

We were surprised to find that the more nurses worked in an ED, the less social support was provided. Even though the number of nurses increased, the number of patients increased even more. It would seem that an increased number of nurses would lessen the workload and allow them to focus more time on patients. Results of our study are supported by Finnish researcher Mattila et al.,^[21] who found that accessibility of support worsened when the number of emergency patients increased and duties of nurses expanded. However, we could consider that there may be some other confounding factors. Here, it is clear that the hospital administration must pay special attention to human resource planning and management in order to ensure there are a sufficient number of nurses providing family-centered nursing care. Efficiency increases when resources are utilized in the best way.

The older the nurse was, the less affirmation was provided. It may be assumed that older, more experienced nurses might provide better care, and share knowledge with others – that has been disproved. This result may be due to the nurse having too many duties. There is not enough time to identify the social needs of the entire family, and which is why patient-centered approach has been neglected.

5. CONCLUSIONS

Nurses reported that they offered greater social support than family members stated the family had received. Despite

this, social support for family was found to be moderate by both family members and nurses. In order to ensure disease management and promote the patient's ability to cope at home, nurses must ask the family presenting in the ED for knowledge about the patient's social network. To guarantee a patient-centered approach when providing nursing care, the administrative staff needs to consider whether an adequate number of nurses are working in the ED.

Further studies are needed to advance our understanding of social support in EDs. Additional studies regarding the type of social support or services a family presenting in the ED requires would be beneficial. It is essential to investigate whether the role of ED nurses is clearly defined, as a lack of definition may explain why this study found social support to be at moderate level. Social support scale of the FAFHES used in this study was found to be applicable in ED environments. Further usage of the instrument in EDs should be considered.

Limitations

Some limitations of our study may have affected the results. The study was designed to collect data from at least 367

family members, but was completed and analyzed with 111 family members due to challenging data collection and fixed period. A larger sample size and higher response rate would allow better comparison of the results.^[35] In addition, family members involved in the study participated once. A control group was not used aimed to investigate whether the situation has been improved over the time. We did not check whether the same older patients were readmitted later. Finally, there is lack of literature describing the experiences of both family members of older patients and nurses regarding social support in EDs, which made comparing results with previously conducted studies challenging.

ACKNOWLEDGEMENTS

The authors would like to thank family members of discharged home older patients and ED nurses who participated in the study.

CONFLICTS OF INTEREST DISCLOSURE

The authors declare they have no conflicts of interest.

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