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**YOUNG REGISTERED NURSES' INTENT TO
LEAVE THE PROFESSION IN FINLAND
– A MIXED-METHOD STUDY**

by

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*'It takes a remarkable person to be a nurse.
This is a profession where joy and sadness
come in equal measure.
This is where inspiration is met by frustration
and where courage must outweigh fear.
This is challenging.
This is rewarding.
This is nursing.'
(Royal College of Nurses, 2012)*

Mervi Flinkman

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ABSTRACT

The purpose of this study was to examine and expand understanding concerning young Finnish registered nurses (RN) with an intention to leave the profession and the related variables, specifically when that intention has emerged before the age of 30. The overall goal of the study was to develop a conceptual model in relation to young RNs' intention to leave the profession. Suggestions for policymakers, nurse leaders and nurse managers are presented for how to retain more young RNs in the nursing workforce. Suggestions for future nursing research are also provided.

Phase I consists of two sequential integrative literature reviews of 75 empirical articles concerning nurses' intention to leave the profession. In phase II, data had been collected as part of the Nurses' Early Exit (NEXT) study, using the BQ-12 structured postal questionnaire. A total of 147 young RNs participated in the study. The data were analysed with statistical methods. In phase III, firstly, an in-depth interpretive case study was conducted in order to understand how young RNs explain and make sense of their intention to leave the profession. The data in this study consisted of longitudinal career stories by three young RNs. The data was analysed by using narrative holistic-content and thematic methods. Secondly, a total of 15 young RNs were interviewed in order to explore in-depth their experiences concerning organizational turnover and their intent to leave the profession. The data was analysed using conventional content analysis.

Based on earlier research, empirical research on the young RNs intention to leave the profession is scarce. Nurses' intention to leave the profession has mainly been studied with quantitative descriptive studies, conducted with survey questionnaires. Furthermore, the quality of previous studies varies considerably. Moreover, nurses' intention to leave the profession seems to be driven by a number of variables. According to the survey study, 26% of young RNs had often considered giving up nursing completely and starting a different kind of job during the course of the previous year. Many different variables were associated with an intention to leave the profession (e.g. personal burnout, job dissatisfaction). According to the in-depth inquiries, poor nursing practice environments and a nursing career as a 'second-best' or serendipitous career choice were themes associated with young RNs' intention to leave the profession.

In summary, young RNs intention to leave the profession is a complex phenomenon with multiple associated variables. These findings suggest that policymakers, nurse leaders and nurse managers should enable improvements in nursing practice environments in order to retain more young RNs. These improvements can include, for example, adequate staffing levels, balanced nursing workloads, measures to reduce work-related stress as well as possibilities for advancement and development. Young RNs' requirements to provide high-quality and ethical nursing care must be recognized in society and health-care organizations. Moreover, sufficient mentoring and orientation programmes should be provided for all graduate RNs. Future research is needed into whether the motive for choosing a nursing career affects the length of the tenure in the profession. Both quantitative and in-depth research is needed for the comprehensive development of nursing-turnover research.

Keywords: health manpower; health occupations; intention to leave; Finland; mixed methods design; profession; nurses; registered nurse; personnel turnover

Mervi Flinkman

NUORTEN SAIRAAHOITAJIEN AIKOMUS LÄHTEÄ AMMATISTAAN SUOMESSA – MONIMENETELMÄLLINEN TUTKIMUS

Hoitotieteen laitos, lääketieteellinen tiedekunta, Turun yliopisto, Suomi
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TIIVISTELMÄ

Tutkimuksen tarkoituksena oli selvittää nuorten sairaanhoitajien aikomusta lähteä ammatistaan ja siihen yhteydessä olevia tekijöitä erityisesti silloin, kun lähtöaikomukset olivat alkaneet ennen 30 vuoden ikää. Tutkimuksessa kehitettiin käsitteellinen malli kuvaamaan nuorten sairaanhoitajien ammatista lähtöaikomuksia ja siihen yhteydessä olevia tekijöitä. Lisäksi tulosten perusteella annettiin suosituksia poliitikoille, hoitotyön johtajille ja esimiehille, jotta useampi nuori sairaanhoitaja voitaisiin saada jäämään ammattiinsa. Suosituksia annettiin myös jatkotutkimukselle.

Ensimmäisessä vaiheessa toteutettiin kaksi integroitua kirjallisuuskatsausta. Katsaukset sisälsivät yhteensä 75 empiiristä artikkelia ja ne käsittelivät hoitajien ammatista lähtöaikomuksia. Tutkimuksen toisessa vaiheessa analysoitiin kyselytutkimuksen aineistoa, joka oli kerätty eurooppalaisessa Nurses Early Exit (NEXT) tutkimuksessa. Yhteensä 147 suomalaisen nuoren sairaanhoitajan aineisto oli kerätty BQ 12 lomakkeella. Tämä aineisto analysoitiin tilastollisin menetelmin. Kolmannessa vaiheessa toteutettiin kaksi haastattelututkimusta. Ensin toteutettiin laadullinen tapaustutkimus, jotta voitiin lisätä ymmärrystä kokemuksista ja merkityksistä ammatista lähtöaikomuksiin liittyen. Tämän tutkimuksen aiheisto koostui kolmen sairaanhoitajan uratarinoista. Aineisto analysoitiin narratiivisella holistisella sisällönanalyysillä sekä teemallisella menetelmällä. Toisessa laadullisista tutkimuksista haastateltiin 15 sairaanhoitajaa organisaatiosta lähtemiseen ja ammatista lähtöaikomuksiin liittyen. Tämän teemahaastattelun aineisto analysoitiin sisällönanalyysillä.

Aikaisempi tutkimus on osoittanut että empiirinen tutkimus koskien nuorten sairaanhoitajien ammatista lähtöaikomuksia on erittäin vähäistä. Hoitajien ammatista lähtöaikomuksia on tutkittu pääsääntöisesti määrällisin menetelmin ja kyselytutkimuksin. Lisäksi tutkimusten laatu vaihtelee. Aikaisempien tutkimusten mukaan monet eri tekijät ovat yhteydessä ammatista lähtöaikomuksiin. Kyselytutkimuksen mukaan noin joka neljäs (26%) sairaanhoitajista oli ajatellut ammatistaan lähtemistä vähintään muutaman kerran kuukaudessa kyselyä edeltäneen vuoden aikana. Tässä tutkimuksessa esimerkiksi uupumus ja työtytymättömyys olivat yhteydessä ammatista lähtöaikomuksiin. Haastatteluissa nuoret kuvasivat huonon hoitotyön toimintaympäristön ja ammatinvalinnan toissijaisena tai sattumanvaraisena valintana olevan yhteydessä ammatista lähtöaikomuksiin.

Yhteenvetona voidaan todeta ammatista lähtöaikomusten olevan monimutkainen ilmiö, johon on yhteydessä monia eri tekijöitä. Poliittisten päätöksentekijöiden, hoitotyön johtajien ja esimiesten tulisi kehittää hoitotyön toimintaympäristöä. Riittävä henkilöstömitoitus, tasapainoinen työkuormitus, työstressin vähentäminen sekä mahdollisuudet kehittyä ja edetä uralla ovat hyvän hoitotyön toimintaympäristön ominaispiirteitä ja ne voivat edesauttaa nuorten sairaanhoitajien pysymistä ammatissaan. Nuorten sairaanhoitajien halu toteuttaa korkealaatuista ja eettisesti kestävää hoitotyötä on huomioitava niin yhteiskunnassa kuin terveydenhuollon organisaatioissa. Lisäksi kaikille vastavalmistuneille tulisi tarjota riittävästi perehdytystä ja mentorointia. Jatkotutkimusta tarvitaan, jotta voidaan selvittää, onko ammatinvalinnan motiiveilla vaikutusta ammatissa pysymiseen. Sekä määrällistä että laadullista tutkimusta tarvitaan, jotta sairaanhoitajien lähtöaikomusten tutkimus kehittyy monipuolisesti jatkossa.

Avainsanat: aikomus lähteä ammatista; ammatti; hoitajat; monimenetelmällinen tutkimus; sairaanhoitaja; terveydenhuollon ammatit; terveydenhuollon työvoima; vaihtuvuus

TABLE OF CONTENTS

ABSTRACT.....	4
TIIVISTELMÄ	5
TABLE OF CONTENTS.....	6
LIST OF TABLES.....	8
LIST OF FIGURES	10
LIST OF APPENDICES.....	10
LIST OF ABBREVIATIONS.....	11
LIST OF ORIGINAL PUBLICATIONS	12
1. INTRODUCTION	13
2. DEFINITION OF THE CONCEPTS USED IN THE STUDY.....	17
2.1 Young registered nurse	17
2.2 Intent to leave the profession	20
2.3 Nurse turnover	22
3. THEORETICAL FRAMEWORK	26
3.1 The nursing workforce internationally and the global shortage of RNs	26
3.2 Nursing workforce in Finland and the shortage of RNs	30
3.3 The significance of RNs' intention to leave the profession	32
3.4 Theoretical underpinnings of employee turnover research	36
3.5 Theoretical underpinnings of nurse turnover research	38
3.6 Nurse workforce viewed from a generational perspective	39
3.7 Literature concerning graduate registered nurses	41
3.8 Intention to leave the profession within professions other than RNs	42
4. LITERATURE REVIEW CONCERNING NURSES' INTENTION TO LEAVE THE PROFESSION	45
4.1 Literature search	45
4.2 Description of the included research	46
4.3 Proportion of young RNs and graduate RNs with an intention to leave the profession.....	47
4.4 Proportion of RNs (all ages) intending to leave the profession	49
4.5 Variables associated with young RNs and graduate RNs intention to leave the profession	51
4.6 Variables associated with registered nurses' (of all ages) intention to leave the profession	51
4.7 Summary of the theoretical basis of the study	55
4.7.1 What is already known?	55
4.7.2 What are the gaps in the existing knowledge?	56

5. THE PURPOSE OF THE STUDY	57
6. RESEARCH METHODOLOGIES AND DATA COLLECTION	58
6.1 Methodological approaches	58
6.2 Phases of the study	59
6.3 Study designs, data collection and samples of the part-studies	60
6.4 Data analysis	65
6.5 Ethical considerations	67
7. RESULTS.....	69
7.1 What proportion of young RNs have an intention to leave the profession?	69
7.2 What are the variables associated with a young RNs' intention to leave the profession?	70
7.3 What are the experiences and perceptions of young RNs with an intention to leave the profession in the early years of their career?	72
7.4 Summary of the results	77
7.5 Conceptual model of young RNs' intention to leave the profession	78
8. DISCUSSION	80
8.1 Strengths and limitations of the study	80
8.2 Validity and reliability of the study	81
8.3 Discussion of the main results	86
8.3.1 Young RNs' intent to leave the profession as a long-lasting and complex process	86
8.3.2 Retention of young RNs in the nursing workforce	89
8.4 Suggestions for health-care policy-makers and nurse leaders	91
8.5 Suggestions for nurse managers	92
8.6 Suggestions for further research	93
9. CONCLUSIONS.....	94
ACKNOWLEDGEMENTS	96
REFERENCES.....	98
APPENDICES	118

LIST OF TABLES

Table 1.	Terms related to intention to leave the profession.....	20
Table 2.	Varying conceptual definitions of turnover.	23
Table 3	The main concepts of the study and the definitions used	25
Table 4.	Estimated shortage of nursing workforce in different countries.	27
Table 5.	Research programmes in relation to the health-care workforce 2002–2016.	28
Table 6	Rates of RNs working in another field or out of the nursing workforce	29
Table 7.	Descriptions of the X and Y Generations’ characteristics and values based on the literature.....	40
Table 8.	Intention to leave the profession within professions other than RNs.....	43
Table 9	Filters/limiters used when conducting updated database searches (October 2013)	46
Table 10.	Young and graduate RNs intention to leave the profession (updated integrative review).....	48
Table 11.	Percentage of nurses with the intention to leave the nursing profession in included studies (2008–2013).	49
Table 12	Variables associated with young RNs and graduate RNs intention to leave the profession.....	51
Table 13.	Individual-related variables in relation to intention to leave the profession.	52
Table 14.	Employment-related variables in relation to intention to leave the profession.	53
Table 15.	Nurse practice environment related variables in relation to intention to leave the profession.....	53
Table 16.	Nurse outcome related variables in relation to intention to leave the profession.	54
Table 17.	Response distribution to the question: “How often during the course of the last 12 months have you thought about...”	69
Table 18.	Satisfaction with pay among young RNs.	71

Table 19. Main themes, sub-themes and categories related to turnover and intent to leave the profession	73
Table 20. Thematic interviews; reasons for choosing career, reasons for having an intention to leave the profession and future plans	74
Table 21. How do young RNs perceive the future of the nursing profession in the next 10 years?	76

LIST OF FIGURES

Figure 1. Phases of the study.	59
Figure 2. Summary of the results.....	77
Figure 3. Conceptual model of young RNs' intention to leave the profession.	79

LIST OF APPENDICES

Appendix 1. Empirical studies (n = 24) concerning RNs' professional turnover.	118
Appendix 2 Empirical studies (n = 44) concerning nurses' intention to leave the profession (updating Paper I)	122
Appendix 3 Measures concerning intention to leave the profession (updating Paper I).....	130

LIST OF ABBREVIATIONS

AACN = American Association of Colleges of Nursing
ANA = American Nurses Association
BLS = Bureau of Labor Statistics, United States Department of Labor
BQ 12 questionnaire = 12 month follow up questionnaire (NEXT study)
CfWI = Centre for Workforce Intelligence, United Kingdom
CIHI = Canadian Institute for Health Information
CINAHL = Cumulative Index to Nursing and Allied Health Literature
EC = European Commission
ECTS = European Credit Transfer and Accumulation System
FP5 = Fifth Framework Research Programme of the European Commission
FP7 = Seventh Framework Research Programme of the European Commission
HEALTH PROMeTHEUS = Health Professional Mobility in the European Union Study
HRSA = United States Department of Health and Human Services, Health Resources and Services Administration
HYVÄ = Welfare Service Development Programme 2011–2015, the Ministry of Employment and the Economy, Finland
ICN = International Council of Nurses
ITL = Intent to leave
KASTE = The National Development Programme for Social Welfare and Health Care, The Ministry of Social Affairs and Health, Finland
LANE = The Longitudinal Analysis of Nursing Education study, Sweden
Mesh-TERM = Medical Subject Heading-Term
MDGs = Millennium Development Goals, United Nations
MoHProf = Mobility of Health Professionals Study
NGN = A newly graduate nurse
NLRN = A newly licensed registered nurse
NP = Nurse practitioner
NSSRN = National Sample Survey of Registered Nurses, United States
OECD = Organization for Economic Co-operation and Development
RN = Registered Nurse
RN4CAST = Registered Nurse Forecasting Study
RCN = Royal College of Nursing, United Kingdom
SD = Standard Deviation
SPSS = Statistical Package for the Social Sciences
STTK = The Finnish Confederation of Salaried Employees
TEHY = The Union of Health and Social Care Professionals, Finland
VALVIRA = the National Supervisory Authority for Welfare and Health, Finland
WHO = World Health Organization

LIST OF ORIGINAL PUBLICATIONS

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

- I** Flinkman M., Leino-Kilpi H. & Salanterä S. 2010. Nurses' intention to leave the profession: integrative review. *Journal of Advanced Nursing* 66(7), 1422–1434.
- II** Flinkman M., Laine M., Leino-Kilpi H., Hasselhorn H-M. & Salanterä S. 2008. Explaining young registered Finnish nurses' intention to leave the profession: A questionnaire survey. *International Journal of Nursing Studies* 45(5), 727–739.
- III** Flinkman M., Isopahkala-Bouret U. & Salanterä S. 2013. Young registered nurses' intention to leave the profession and professional turnover in early career: a qualitative case study. *ISRN Nursing*, vol. 2013, Article ID 916061. doi:10.1155/2013/916061
- IV** Flinkman M. & Salanterä S. Early career experiences and perceptions - a qualitative exploration of young registered nurses' turnover and intent to leave the nursing profession in Finland. Resubmitted.

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1. INTRODUCTION

In a time when the aging population needs more nursing care (Sherman et al. 2013) and older registered nurses (RNs) are retiring from the profession (Graham & Duffield 2010, HRSA 2010, Juraschek et al. 2012, HRSA 2013), considerable pressure has been placed on young RNs to fill the workforce gap (European Commission 2012). Retention of young RNs is a common concern for nurse leaders and policymakers in a time when many countries have reported future shortages of qualified nurses (Buchan & Calman 2004, Johnson et al. 2006, Oulton 2006, Aiken & Cheung 2008, Allan & Aldebron 2008, Buchan & Aiken 2008, Buerhaus 2008, Duvall & Andrews 2010, Sermeus & Bruyneel 2010, AACN 2012, Currie & Carr Hill 2012, Health Workforce Australia 2012, CfWI 2013, Ministry of Employment and the Economy 2014, Van den Heede & Aiken 2013).

The number of young RNs (under the age of 30) has undeniably increased and they now constitute 10–15% of the nursing workforce (Australian Bureau of Statistics 2013, HRSA 2013, Nursing Council of New Zealand 2013). For example, in the United States it has been projected that the nursing workforce will grow rapidly until 2030 (Buerhaus et al. 2013). This unexpected increase in the number of nurses is due to the fact that between 2002 and 2009, the number of young RNs (aged 23–26) increased dramatically, by 62% (Auerbach et al. 2011).

According to the recent Nurse Forecasting in Europe study (RN4CAST, $n = 23,159$), approximately one in ten nurses (9%) in Europe have reported an intent to leave their profession (Heinen et al. 2013). In many studies, younger RNs have reported a stronger intention to leave the profession than older nurses (Krausz et al. 1995, Kuokkanen et al. 2003, Barron & West 2005, Nogueras 2006, Estryng-Behar et al. 2008, Widerszal-Bazyl et al. 2008, Simon et al. 2010, Tsai et al. 2010, Rudman et al. 2010, van der Heijden et al. 2010, Cortese 2012, Salminen 2012, Wang et al. 2012b, Guroková et al. 2013, Mohamed & Mohamed 2013). According to the Nurses' Early Exit (NEXT) Study, in many European countries, this intention to leave the profession was highest in the age groups between 25 and 35 years of age (Hasselhorn et al. 2005b). Young employees also tend to be more mobile in their career than older employees (Lehto & Sutela 2008, Aho & Mäkiäho 2012, North et al. 2013a). In international studies, between 1–26% of new graduates left the profession during the first five years of their nursing career (Kovner & Djukic 2009, Rudman et al. 2010, Brewer et al. 2012, North et al. 2013a).

An RN's intention to leave their profession has been found to predict their actual decision to leave (Krausz et al., 1995, Lane et al., 1998, Hasselhorn et al., 2005b, Laine et al. 2009). Therefore, it is alarming that many young RNs have an intention to leave their profession early in their career (Rudman & Gustavsson 2012, Clendon & Walker 2012, Salminen 2012). Moreover, the intention of young RNs for frequent professional turnover can have negative consequences on how health-care systems and organizations function. Frequent intentions to leave might be indicative that RNs are not committed

to their profession (Parry 2008). The young RNs who frequently consider leaving their profession might not be motivated to develop their professional skills or their working organizations in the long term (Tham 2006, Vuorensyrjä 2008). Moreover, high levels of professional turnover intent among RNs may also discourage potential students from joining the profession (Jourdain & Chenevert 2010).

In a time when many countries have predicted a future nurse shortage (Buchan & Aiken 2008, WHO 2009, Barnett et al. 2010, Sermeus & Bruyneel 2010, Yun et al. 2010, Jurachek et al. 2012, Koponen et al. 2012), health-care systems, policymakers, nurse leaders and nurse managers require evidence-based research to guide policy decisions concerning the nursing workforce (Barlow & Zangaro 2010). Therefore, there is also a growing need for investigations concerning young RNs' intention to leave the profession and the reasons behind this intention. It has been recommended that turnover intention among RNs should be investigated from a generational perspective, because "factors that influence nurses to consider leaving their jobs appear to differ according to generation" (Hayes et al. 2012 p. 892). Based on evidence-based knowledge, it could be possible to develop new solutions on the society- and health-system level for the retention of the youngest generation in the nursing workforce.

An adequate supply of highly-educated and skilled RNs is necessary to provide safe, high-quality, patient-centred, accessible and affordable care (Aiken et al. 2001, Aiken et al. 2002, Needleman et al. 2002, Aiken et al. 2003, Lang et al. 2004, Lankshear et al. 2005, Tourangeau et al. 2006, Kane et al. 2007, Aiken et al. 2008, Aiken et al. 2011a, Duffield et al. 2011, Needleman et al. 2011, Salin et al. 2011, Berry & Curry 2012, Zhu et al. 2012, You et al. 2013, Aiken et al. 2014). RNs have a critical role in health-care delivery by determining the quality of patient care (Van Bogaert 2010, Aiken et al. 2012, Van den Heede et al. 2013), patient safety (Zhu et al. 2012, Aiken et al. 2014) and the costs of health-care services (Li & Jones 2013). According to the RN4CAST study, an increase in a nurse's workload by one patient increased inpatient hospital mortality by 7% in nine European countries (Aiken et al. 2014).

Moreover, a sufficient number of nurses are needed to ensure nurses' satisfaction and wellbeing at work (Adams & Bond 2000, Lang et al. 2004, Salin et al. 2011). Nurses have reported greater job satisfaction and lower burnout in hospitals with better nurse-to-patient ratios (Aiken et al. 2002, Kanai-Pak et al. 2008, Rafferty et al. 2007, Cimiotti et al. 2012). Adequate staffing levels help to attract young persons to seek out nursing education (Pitkäaho et al. 2011), and could have a positive impact on nurse workforce retention (Tervo-Heikkinen et al. 2008). Conversely, inadequate nurse staffing is associated with a higher number of RNs with the intention to leave their current unit, organization and even the profession (Hinno et al. 2012). However, more research concerning staff-related outcomes is needed as current evidence is still limited and the quality of existing studies varies (Butler et al. 2011). For example, high quality processes of care (Sochalski et al. 2008) and nursing unit environments (Kane et al. 2007) can also have an effect on patients' outcomes.

There is growing political interest concerning the retention of an adequate nursing workforce (WHO 2011, European Commission 2012, Heinen et al. 2013). WHO (2011) have released 'Strategic Directions for Strengthening Nursing and Midwifery Services 2011–2015'. According to this policy document, nursing and midwifery services hold a central role for achieving the Millennium Development Goals (MDGs). Accordingly, the European Commission (EC) has taken many policy initiatives to emphasize the importance of the health workforce, including the release of a Green Paper on the European Workforce for Health (Commission of the European Communities 2008) and the Action Plan for the EU Health Workforce (European Commission 2012). The focus in these policy initiatives is on attracting and recruiting young people into health professions as well as retaining qualified, experienced staff in the global labour market (European Commission 2012).

Similarly, in Finland the attractiveness of workplaces, the success of recruiting staff and retention of the nursing workforce are the key challenges that are facing health-care organizations (Meretoja & Koponen 2008, Meretoja et al. 2008, Määttä et al. 2009, Koponen et al. 2012). Wellbeing and the adequacy of the health-care workforce has been an integral part of policy programmes in our country. In the programme of Prime Minister Katainen's government, well-being at work and the achievement of a longer working career are part of the key objectives (Prime Minister's Office 2011). Moreover, according to the National Development Programme for Social Welfare and Health Care (KASTE 2012–2015), the availability and stability of a motivated and satisfied workforce plays a key role in providing well-functioning and high-quality health care (Ministry of Social Affairs and Health 2012). The nursing action plan for the years 2009–2011 – *'Increasing the effectiveness and attraction of nursing care by means of management'* – was developed to increase the effectiveness and attractiveness of nursing care by means of management (Ministry of Social Affairs and Health 2009). Accordingly, in the 'Welfare Service Development Programme 2011–2015 (HYVÄ-programme)', implemented by the Ministry of Employment and the Economy, the adequacy of the health and social-care workforce is one of the main priorities (Ministry of Employment and the Economy 2013).

Young RNs are now entering the nursing workforce. This young generation needs to be successfully integrated and retained in the nursing workforce in order to ensure an adequate supply of nurses in the future (Lavoie-Tremblay et al. 2010). RNs who belong to generation Y (born 1980–2000) are described as ambitious, competent with technology, and who value a balance between their personal and professional lives (Duchscher & Cowin 2004). Generation Y nurses also appreciate flexible work schedules and shifts, professional development and adequate supervision (Lavoie-Tremblay et al. 2010). They are described to be the most educated and technologically knowledgeable generation (Lower 2008) and want to be consulted and acknowledged for their contributions to their workplace (Ahonen et al. 2010, Clendon & Walker 2012, Noponen 2013). However, more research is needed on the motivations, expectations and needs of these generation

Y nurses (Lavoie-Tremblay et al. 2010, Lavoie-Tremblay et al. 2011) in order to develop effective strategies to reduce nursing turnover in this youngest generation of the nursing workforce (Currie & Carr Hill 2012).

This is first dissertation of its type to explore young RNs' intention to leave the profession in Finland. The aim of this explorative, three-phase study was to enhance the knowledge of why some young RNs, under the age of 30, have an intention to leave the profession and what the reasons for this are. Furthermore, the aim was to adopt in-depth approaches to provide interpretations of nurses' lived experiences of having an intention to leave the profession early in their careers. This compilation dissertation consists of a summary and four original papers submitted to scientific peer-reviewed nursing journals. This summary provides the theoretical background, updated integrative literature review, research questions, results, discussion and conclusions of the study. The overall goal of the study was to develop a conceptual model concerning young RNs' intention to leave the profession. Furthermore, recommendations for health-care policymakers, nurse leaders and nurse managers concerning the retention of young RNs in the nursing workforce are presented.

2. DEFINITION OF THE CONCEPTS USED IN THE STUDY

This summary starts with the definitions of the main concepts used in the study. The definitions of these main concepts are defined by referring to dictionary definitions, current legislation, empirical research and existing literature. Related concepts are also defined.

The main concepts used in this study are as follows:

1. Young registered nurse (RN)
2. Intent to leave the profession
3. Nurse turnover

2.1 Young registered nurse

In this dissertation, the main aim was to investigate young RNs' intention to leave the profession. Licenced practical nurses were excluded from the samples in this study. According to Juraschek et al. (2012, p. 242); "RNs have a significantly expanded scope of practice, education and clinical training compared to that of licensed practical nurses".

A registered nurse is defined in the Finnish language as '*sairaanhoitaja*' and a nurse is defined as '*hoitaja*' (MOT Englanti; englant-suomi 2013). The term 'registered nurse' (RN) is used when referring to a "fully trained nurse with an official state certificate of competence" (Oxford Dictionary of English 2010). There are also other definitions of an RN, for example: "a professional person who is licensed to practice as a nurse, after formal education and practical training in nursing care and passing a licensure examination" (Dictionary of Public Health 2012). In Finland, however, there are no such licensures examinations that RNs need to accomplish after their formal education (Ministry of Education 2006).

The terms 'registered nurse' and 'nurse' are both used in the research and literature when referring to nurses and the nursing workforce (Currie & Carr Hill 2013). According to Buchan and Aiken (2008), there is no single universal definition of the term 'nurse'. Moreover, Currie and Carr Hill (2013, p. 67) concludes in their literature review the complexity of the term 'nurse' as follows; "the International Council for Nurses (ICN), the World Health Organization and the Organisation for Economic Cooperation and Development (OECD) all have different ways of defining a nurse."

In the dictionary, a 'nurse' is defined as "a person who has been trained to provide personal care of the sick, especially those who are confined to bed in a hospital" (Dictionary of Public Health 2012). According to this dictionary definition, nurses do not need an official state certificate or license to practice as a nurse. However, alternative definitions also exist, and term 'nurses' have also been defined as: "professionals qualified by education

at an accredited school of nursing and licensed by state law to practice nursing” (Pubmed 2013a). According to this definition, nurses need a license from the state in order to practice nursing.

The use of the related terms ‘registered nurse’ and ‘nurse’ varies in the existing research. In the NEXT Study, the researchers chose the term ‘nurse’ to be used in the study. In this longitudinal study, all caring staff was included in the data collection from ten European countries (except temporary staff such as conscientious objectors or voluntary unpaid workers) (Hasselhorn et al. 2003b, p. 21). In the published scientific reports of the NEXT study (Hasselhorn et al. 2003b, Hasselhorn et al. 2005a), the term ‘nurse’ is used throughout. In many of the studies that are reporting findings based on the NEXT data, part-samples of registered nurses are reported (e.g. Hasselhorn et al. 2008, Laine et al. 2009, Simon et al. 2010, van der Heijden et al. 2009, van der Heijden et al. 2010, Li et al. 2010, Li et al. 2011); in these articles, the term registered nurse (RN) is used. In the RN4CAST study, the term ‘nurse’ is used. In this study, the sample from 12 European countries consisted of professional nurses, “fully qualified by the standards of their own country” (Aiken et al. 2012, p. 2).

Registered nurses in Finland hold a Bachelor of Health Care Degree, are licensed by the National Supervisory Authority for Welfare and Health (Valvira) and are registered with the Central Register of Health Care Professionals (National Supervisory Authority for Welfare and Health 2013). Their nursing education is based on EU directives (Directive 2013/55/EU, Directive 2001/19/EC) and consists of 210 European Credit Transfer and Accumulation System (ECTS) study points (Lahtinen et al. 2013). Nursing education in Finland is arranged within polytechnics (also called Universities of Applied Sciences). Nursing education lasts approximately 3.5 years (Lahtinen et al. 2013) with an emphasis on clinical nursing. (Ministry of Education 2006.) This education also includes 90 ECTS of practical training. A full academic pathway to a Bachelor’s degree, Master’s degree and a Doctoral degree is available in Finland. (Lahtinen et al. 2013.)

The RN profession in Finland is currently regulated by the Act on Health Care Professionals (559/1994) and the Decree on Health Care Professionals (564/1994). RNs are licensed for their entire active careers, as there is no system of periodic relicensing in use (Vuorenkoski et al. 2008). RNs work both autonomously and in collaboration with other health care providers (CIHI 2013); they provide and coordinate patient care (Bureau of Labor Statistics, U.S. Department of Labor 2012) and act as members and coordinators of interprofessional teams (WHO 2011). RNs are equipped, through their training and expertise, to take responsibility for many aspects of patient care (Dictionary of Public Health 2012) and they contribute to the health-care system through their work in practice, education, administration, research and policy (CNA 2007).

‘*Young*’ in this study refers to an RN who is under 30 years old. ‘Young’ is a term with many possible definitions; indeed, the Oxford English Dictionary (2012) had a total of 2,111 definitions of the term ‘young’ in August 2013. Previous research has used

different criteria for the ages of the nurses who are considered young. Nurses under 25 years (Mrayyan 2009, Shimizu et al. 2005, Rudman & Gustavsson 2011), under 30 years (Erickson & Grove 2007, Kanai-Pak et al. 2008, Clendon & Walker 2012), or under 35 years (Tschannen et al. 2010, Salminen 2012) have all been defined as young. In the annual Youth Barometer, conducted in Finland, young people are defined as between 15 and 29 years (Myllyniemi 2012). Workers under 30 years of age are also considered young in Finland (Airila et al. 2007, Vaahtio 2003), and the Youth Act (72/2006) in our country defines ‘young’ to be “a youth under 29 years of age”. Moreover, the European Agency for Safety and Health at Work (2006) defines young workers as follows (p. 18): “Usually the years between 12 and 24 are considered to be ‘young’. But sometimes the second and third decades of human life are considered as youth, and adult life is deemed to start at the age of 30 years”.

A related term for ‘young registered nurse’ is a ‘graduate nurse’. Other related terms used in the research and literature are: ‘new nurses’ (Brewer et al. 2012a) ‘novice nurses’ (Suzuki et al. 2006), ‘newly licenced nurses’ (Weathers & Raleigh 2013), ‘newly licensed registered nurses’ (Brewer et al. 2012b) and ‘beginning nurses’ (Daehlen 2008). The use of these terms seems to be unsystematic and varied. The CINAHL Thesaurus (2013) defines graduates as those “who have been out of school for less than one year”. Tei-Tominaga and Miki (2010, p. 306) define newly graduated nurses (NGNs) as: “registered nurses who had been in their current job for less than twelve months and had no prior nursing work experience since graduating from a nursing education institution”. Moreover, Salt et al. (2008, p. 288) defined a newly graduate nurse (NGN) as: “a nurse who completed a minimum basic nursing programme and who had not previously practiced nursing”. Another definition of newly licensed registered nurses (NLRNs) is presented by Brewer et al. (2012b, p. 522) as: “RNs who are within 2 years of graduation”.

In this study, however, the term ‘graduate’ was not chosen as a main concept. The aim was to investigate the intention to leave the profession of RNs within a specific age group: under 30 years of age. Studies investigating graduate nurses have often included mature-age graduates in their samples (example Enberg et al. 2007, DiMattio et al. 2010, Lavoie-Tremblay et al. 2011, Rudman et al. 2010, Rudman & Gustafsson 2011, Rudman & Gustafsson 2012, North et al. 2013a, Rudman et al. 2013). It could be also mentioned that in Canada, for example, regulated nurses are often aged over 30 when they graduate (CIHI 2011) and in the United States, the average age of graduated nurse with a Bachelor’s degree is 28 years (HRSA 2010). In Finland, the statistical information of the age of newly graduated RNs was not found. However, a study by Lakanmaa et al. (2013), which investigated graduating nursing students (n = 139) in Finland, reported that the mean age of the participants was 28 years (range 21–52 years).

Young RNs belong to the youngest generation in the nursing workforce. ‘Generation’ refers to groups of people of a similar age who are involved in a particular activity or profession at a given time, considered collectively (Oxford English Dictionary 2012). ‘Generation’ is defined in the Finnish language as ‘*sukupolvi*’ or ‘*ikäluokka*’ (MOT

Englanti; englanti-suomi). According to Kopperschmidt (2000, p. 66): “a generation is defined as an identifiable group that shares birth years, age location, and significant life events at critical developmental stages”. The grouping of persons into generations is motivated by the idea that generations share common experiences (e.g. war, economic depression, developments in technology) that create similarities (e.g., values, attitudes) among those in the cohort (Costanza et al. 2012, Parry & Urwin 2011). Thus, the values of people could be seen to be more significantly influenced by generational experiences than by age or maturation (Smola & Sutton 2002).

2.2 Intent to leave the profession

The term ‘*intent to leave the profession*’ in this study refers to a cognitive consideration process in which a registered nurse has a voluntary intention to leave the profession in order to work in another profession or in another occupation. Earlier definitions of the term ‘intent to leave the profession’ were not found from the literature or the research, only the operationalized item(s) used to measure leaving intention was located. However, some terms related to ‘intent to leave the profession’ were found from the research and the literature. There related terms are presented in Table 1.

Table 1. Terms related to intention to leave the profession.

Term	Definition	Author(s)
Intentions to leave nursing	“an intention to move voluntarily from the health care in which a nurse was working primarily (public or private) to a field outside health care”	Kankaanranta & Rissanen 2008, p. 334
Career change	“movement across occupational boundaries” “to movement to a new occupation that is not part of a typical career progression”	Hess et al. 2012, p. 280 Rhodes & Doering 1983, p. 631
Voluntary job mobility	“employees changing jobs voluntarily”	Reineholm et al. 2012, p. 1
Nurse who have been leaving profession	“a nurse who voluntarily discontinues nursing profession after working a certain time after graduation the school of nursing”	Gök & Kocaman 2011, p. 67
Nurse intent to stay	“the nurses’ decision to remain in their nursing profession before retirement”	Wang et al. 2012a, p. 548

There are also different definitions for the term ‘*intent*’. ‘Intention’ has been defined as: “what a person has in mind to do or bring about” by PubMed (2013b); “the act or fact of intending or purposing” by the Oxford English Dictionary (2012); and “a course of action that one intends to follow” by the Medical Dictionary (2013). According to Lum et al. (1998, p. 307), “intentions are statements about specific behaviors of interest”. For example Stone et al. (2007), Steward et al. (2011) and Cortese (2012) have been

used abbreviation ITL (intent to leave) in their studies concerning nurse turnover. Intent is defined in the Finnish language as '*aikomus*', '*aie*', or '*tarkoitus*' (MOT Englanti; englanti-suomi 2013).

In previous research, two different types of leaving intention among employees have been described: (1) employer-change intention, and (2) career-change intention (Hess et al. 2012). Moreover, three different types of leaving intention among RNs have been distinguished: intent to leave the ward/unit, intent to leave the hospital/organization and intent to leave the profession (Krautz et al. 1995, Morrell 2005, Cortese 2012, Hinno et al. 2012).

Employees' intention to leave the job or organization has been found to be a determinant of actual behaviour (Mobley 1978, Presthold 1987, Parasuraman 1989, Griffeth et al. 2000, Holtom et al. 2008). According to social psychology research, intention-behaviour correlations are usually substantial (Ajzen 2005). According to the 'Theory of Reasoned Action', a person's self-reported behavioural intention to perform a specific behaviour is the best predictor of actual behaviour (Ajzen & Fishbein 1980, p. 41). Moreover, a person's intention to perform behaviour is determined by their attitude toward the behaviour and by their subjective norm (Ajzen & Fishbein 1980, p. 59).

'Profession' has been defined as: "An occupation in which a professed knowledge of some subject, field, or science is applied; a vocation or career, especially one that involves prolonged training and a formal qualification" (Oxford English Dictionary 2012). The Dictionary of Public Health (2012) defines a profession as: "An occupation that requires specialized education and/or training that is often available only in a college or university and is usually assessed by a sequence of examinations". In contrast, Gök and Kocaman (2011, p. 67) defined the term '*a non-nursing profession*' as "one that does not require a nursing education". 'Profession' is defined in the Finnish language as '*ammatti*' or '*ammattikunta*' (MOT Englanti; englanti-suomi 2013).

A profession is characterized by the mastery of a complex body of knowledge and skills (Cruss et al. 2004) as well as autonomy and self-regulation (Miller et al. 1993). Educational preparation and depth of knowledge distinguish professions, such as that of a registered nurse, from other occupational groups (Celik et al. 2011). Professions can be understood as social agreements, both in relation to the work and the division of the labour (Henriksson & Wrede 2004).

A term related to 'profession' is '*occupation*'. An occupation is defined in the Finnish language as '*ammatti*' or '*elinkeino*' (MOT Englanti; englanti-suomi 2013). By Lee et al. (2000, p. 800) define an occupation as: "an identifiable and specific line of work that an individual engages in to earn a living at a given point of time (e.g., nurse, banker, clerk)". Another definition of the term occupation is: "The work that people do; the activity that fills most waking hours, and, for those who work for a financial or equivalent reward, a description of the nature of this activity" (Dictionary of Public Health 2012). Another term

related to ‘profession’ is *‘career’*, which refers to: “The series of jobs that a person has throughout his or her working life” (Dictionary of Human Resource Management 2012).

2.3 Nurse turnover

Term **‘nurse turnover’** in this study refers to the actual occurrence of a registered nurse voluntarily leaving their unit, organization or the nursing profession. Turnover has also been defined as a decision-making process for RNs, which happens on an individual level (Brewer et al. 2013). Turnover is defined in the Finnish language as *‘vaihtuvuus’* (MOT Englanti; englanti-suomi, Matela 2011) or *‘liikkuvuus’* (Ruoranen et al. 2007).

An RN’s turnover can occur in three different levels (Simon et al. 2010, Cortese 2012, Hinno et al. 2012):

- I The RN is leaving the unit to work in another unit within the organization,
- II The RN is leaving the organization to work for another organization of the same type,
- III The RN is leaving the profession in order to work in another profession or occupation, or is leaving the RN workforce (for example, due to retirement).

Blau (2007) describes voluntary organizational turnover as a different type of interrole transition compared to occupational turnover: “in a voluntary organizational work transition employees leave their organization, while for voluntary occupational turnover an individual changes their occupation” (p. 136). Moreover, according to Kirschenbaum and Weisberg (2002, p. 110): “Employees’ movements from their current job or position could be within the same organization or crossing boundaries to another organization, or even withdrawing totally from the labor market”.

Both terms ‘organizational turnover’ and ‘professional turnover’ are used in this study. These terms can be defined, based on previous research, as follows:

- **Organizational turnover:** “RNs leave one organization and go to another organization or leave the RN workforce” (Brewer et al. 2013, p. 1)
- **Professional turnover:** “nurses who leave nursing to work in other professions or occupations” (Parry 2008, p. 158)

RNs can have turnover intent regarding their unit, organization or profession. However, turnover intention is conceptually different from actual turnover (Haybatollahi 2009). In contrast to actual turnover, turnover intentions are not definite. Thus, “turnover intention reflects the (subjective) probability that an individual will change his or her job within a certain time period” (Sousa-Poza & Henneberger 2004, p. 113).

There is great variability in the definitions and conceptualization of ‘nurse turnover’ across employee and nurse-turnover literature and research (Table 2). A clear definition of the term ‘turnover’ is lacking. According to the literature review conducted by Hayes

et al. (2006a, p. 238-239): “Some studies define turnover as any job move, while others consider nurse turnover as leaving the organization or even the nursing profession”.

Table 2. Varying conceptual definitions of turnover.

Concept	Definition	Author(s)
Turnover	“Turnover is movement of members across the boundary of an organization”	Price 2001, p. 600
	“turnover is an individual choice behavior”	Mobley 1979, p. 493
Nurse turnover	“the process whereby nursing staff voluntarily leave or transfer from their primary employment position”	O’Brien-Pallas et al. 2006, p. 172
	“the process by which nurses leave or transfer from their primary employment position in health services”	North et al. 2013b, 421
Staff or workforce turnover	“the rate at which an organization gains and loses employees; it may also be determined in terms of how long employees stay in their employment position”	Currie & Carr Hill 2012, p. 1181
Personnel turnover	“A change or shift in personnel due to reorganization, resignation, or discharge”	PubMed 2012c
Turnover intention	“the expressed inclination and deliberate willingness to quit one’s job or one’s profession”	Pomaki et al. 2010, p. 1340
	“employees’ willingness or attempts to leave the current workplace voluntarily”	Takase, 2010, p. 4
	“a multi-stage process involving employees’ voluntary departure from their current position”	Takase 2010, p. 9
	“a conscious and deliberate willfulness to leave the organization”	Tett & Meayr, 1993 p. 262
	“the (subjective) probability that an individual will change his or her job within a certain time period”	Sousa-Poza & Henneberger 2004, p. 113
Organizational turnover	“Organizational turnover refers to a transition where an employee leaves one workplace for another”	Rothrauff et al. 2011, p. 67
Occupational turnover	“Occupational turnover is defined as leaving a profession”	Salminen 2012, p. 2
External turnover	“Usually a numerical value attached to the number of people who leave an organization for various reasons”	Baumann 2010, p. 8
Internal turnover	“Refers to job changes within an organization”	Baumann 2010, p. 8

The term turnover has been weakly operationalized in earlier studies, which limits the possibility to compare and synthesize the results of these studies (Hayes et al. 2006a). The operationalization of this term ranges from cognitional leaving intentions to actual leaving (Simon et al. 2010).

There are many related terms concerning ‘turnover’. These terms are often used interchangeably and non-systematically in the literature and in research. Examples of these terms are: ‘*voluntary occupational turnover*’ (Blau 2007), ‘*nurse attrition*’ (Nooney et al. 2010), ‘*employee withdrawal*’ (Mobley et al. 1978) and ‘*intent to stay*’ (Price & Mueller 1981). Furthermore, ‘*withdrawal intention*’ (Krausz et al. 1995), ‘*quit intentions*’ (Griffeth et al. 2000) ‘*occupational turnover intention*’ (Rothrauff et al. 2011), ‘*intention for occupational turnover*’ (Salminen 2012) and ‘*turnover intention*’ (Takase 2010) are terms used in the literature to describe the intention of employees, or nurses in particular, to leave the organization or even the profession.

Turnover can also be defined as ‘*voluntary*’ or ‘*avoidable*’. The reasons for voluntary or avoidable turnover include: better pay elsewhere, better working conditions elsewhere or a mid-career change (Abelson 1987). In voluntary turnover, nurses leave through personal choice (Li & Jones 2013) and organizations have many opportunities to influence this kind of turnover (Abelson 1987). The reasons for ‘*involuntary*’ or ‘*unavoidable*’ turnover, however, include retirement or severe illnesses; that is, nurses leave for reasons beyond their own control (Abelson 1987, Li & Jones 2013). Thus, organizations do not have many opportunities to influence this kind of turnover. Another classification is between ‘*functional*’ and ‘*dysfunctional*’ turnover (Dalton et al. 1981, Holtom et al. 2005). Turnover is considered to be dysfunctional when it involves the unavoidable separation of staff that the organization would prefer to retain. Accordingly, when turnover is functional, the organization has a negative evaluation of the employee who is leaving, and thus their departure is beneficial for the organization. (Dalton et al. 1981, Holtom et al. 2005, O’Brien-Pallas et al. 2006.)

In this study, the term ‘*nurse manager*’, which is used synonymously with the term ‘*charge nurse*’, is defined as “nurses who complete administrative tasks and supervise nursing staff in a hospital or nursing home unit” (CINAHL Headings 2014). A nurse manager can be defined in the Finnish language as ‘*osastonhoitaja*’ (Narinen 2000, Roos 2014). ‘*Nurse leaders*’ are defined in this study as “those who influence direction and policy in the nursing profession; not for leaders of specific health care facilities” (CINAHL Headings 2014). Nurse leaders can be defined in the Finnish language as ‘*hoitotyön johtaja*’ (MOT Englanti; englant-suomi 2013). In this study, ‘*nurse preceptors*’ are defined as: “one or more experienced RNs who provided one-to-one guidance during the defined period of orientation” (Salt 2008, p. 290).

As seen in this chapter, there are many related term used unsystematically when investigating the RN workforce, turnover and intent to leave organizations as well as the profession. The main concepts and the definitions of those used in this study are summarized in Table 3.

Table 3. The main concepts of the study and the definitions used.

Main concept	Definition
Young registered nurse	A fully trained nurse with an official state certificate of competence (Oxford Dictionary of English 2012) and who is less than 30 years old.
Intent to leave the profession	Cognitive consideration process where a registered nurse has a voluntary intention to leave the profession in order to work in another profession or in another occupation. (The definition developed for this study)
Nurse turnover	A transition when a registered nurse voluntarily leaves the unit, organization or the nursing profession. (The definition developed for this study)

3. THEORETICAL FRAMEWORK

This theoretical framework review consists of six main areas. Firstly, the literature and research concerning the RN workforce and the current workforce shortage is reviewed, both internationally and within Finland. Secondly, the significance of RNs' intention to leave the profession is discussed. Thirdly, a literature review of employee and RN turnover research is presented. Fourthly, an overview of the RN workforce viewed from a generational perspective is provided. Fifthly, the literature concerning graduate RNs is briefly reviewed. Lastly, the literature concerning intention to leave the profession within profession other than RNs' is discussed.

3.1 The nursing workforce internationally and the global shortage of RNs

Nursing is a profession dominated by women. Women constitute more than 90% of the RN workforce across different countries (HRSA 2010, Ailasmaa 2013, Australian Bureau of Statistics 2013). The average age of an RN is predominantly rising in developing countries and is now, on average, 45.5–47 years (Graham & Duffield 2010, HRSA 2010, CIHI 2011, Australian Bureau of Statistics 2013).

Internationally, there is a high number of RNs. RNs represent one of the largest professions in health care (Buchan & Black 2011) with a total of 19.3 million nursing and midwifery personnel in the world (WHO 2011). The nurse workforce size varies in different countries: there are 2.8 million RNs in the United States (HRSA 2013), 1.65 million nurses in China (Yun et al. 2010, Wang et al. 2012b), half a million RNs in England (CfWI 2013), a quarter of a million RNs in Canada (CNA 2009), 205,760 RNs in Australia (Australian Bureau of Statistics 2013) and 130,000 RNs in Sweden (Rudman et al. 2010). However, although the number of nurses is high internationally, the supply and demand of the nursing workforce is imbalanced in many countries (Simoens et al. 2005, Buchan & Aiken 2008, Baumann 2010).

During the cyclical history of nursing workforce shortages, the supply and demand of qualified nurses has been imbalanced many times (Goodin 2003, Oulton 2006, West et al. 2007). In the United Kingdom and the United States, the first nurse shortages were reported at the end of World War II (Oswald et al. 1951, Frijters et al. 2003). However, the present shortage of the nursing workforce has been described as being more severe than the previous recurring shortages (Oulton 2006). At the same time, globally there is: (1) a decreased supply of nurses (e.g. an aging nursing workforce, a shrinking applicant pool); (2) an increased demand (e.g. shorter hospital stays, an aging population, increased acuity of care); and (3) a shortage of other health professions and auxiliary staff (Buchan & Calman 2004, Rechel et al. 2006, Oulton 2006, Buchan & Aiken 2008, WHO 2009, Juraschek et al. 2011, Bureau of Labor Statistics 2012, HRSA 2013). Especially in the United States, nurse educator shortages and nursing faculty shortages limit student enrolments and decrease the

number of nursing graduates (Allan & Aldebron 2001, Potempa et al. 2009). Moreover, employers outside the health industry are also interested in highly qualified young RNs with skills and expertise that can be utilized in other industries (Duffield et al. 2006).

Although nursing workforce shortages have been partly moderated by the global economic recession (Aiken et al. 2012, Wray 2013), a nursing shortage is still a challenge faced by many developed countries, including Canada, Australia and Japan (see Table 4). In Europe, problems ensuring a sufficient number of well-qualified nurses and midwives have also been reported (Simoens et al. 2005, WHO 2009), although within Europe, this shortage is unevenly distributed geographically and by specialty area (Sermeus & Bruyneel, 2010). In some countries, the shortage of nurses has actually diminished. For example, the United States was experiencing a nursing shortage during 2002–2008 (Brewer & Kovner 2013), yet their nursing workforce is currently growing faster than expected. This growth is occurring because nursing is again becoming an attractive career choice and the number of young RNs (aged 23–26) in the workforce has risen dramatically since 2002 (by 62%) (Auerbach et al. 2011).

Table 4. Estimated shortage of nursing workforce in different countries.

Country	Estimated shortage of nurses	Source
Australia	By 2025 projected shortfall of more than 109,000 nurses.	Health Workforce Australia (2012)
Canada	A shortage of 60,000 registered nurses by 2022.	CNA (2009)
China	There were 1.4 million vacancies for registered nurses (RN) that were not filled in year 2008.	Yun et al. (2010)
United Kingdom	Different workforce scenarios are presented. Estimated shortage of 47,545 registered nurses by 2016 in National Health Service (NHS).	CfWI (2013)
European Union	Shortage of 590,000 nurses by 2020 (total shortage 1 million healthcare workers).	Sermeus & Bruyneel, (2010)
Finland	A shortage of 20,000 social and healthcare sector employees by 2025.	Koponen (2012)
Japan	The Ministry of Health, Labour and Welfare estimates that there will be a shortage of 15,900 nurses by 2010.	Tei-Tominaga & Miki (2010)
Malaysia	Total of 174,000 nurses will be required by the year 2020 to reach a targeted 1:200 nurse population ratio.	Barnet et al. (2010)
USA	Estimated national shortfall will be nearly one million (918,232) RN jobs by the year 2030.	Juraschek et al. (2011)
	RNs are the top occupation in the United States in terms of job growth.	Bureau of Labor Statistics U.S. Department of Labor (BLS) (2012)
New Zealand	Estimated shortage of Registered Nurses: 15,000 nurses by 2035.	Nursing Council of New Zealand (2013)

In developing countries, a critical shortage of RNs jeopardizes health-care systems and the health of citizens (WHO 2010). The World Health Organization (WHO) has estimated that there was a shortage of 4.3 million health personnel worldwide in the year 2006 (WHO 2006). This international nursing shortage has also led to increased nurse migration between countries (OECD 2010) and has been the subject of growing media attention and national debate during the past years (Buchan & Black 2011).

The international nursing shortage, high organizational turnover rates, a high level of intention to leave the profession and increasing migration of the nursing workforce has been a concern for policymakers in the European Union and in the United States over the last ten years. Therefore, many research programmes during the past years concerning the health care workforce have been funded through the Fifth (1998–2002) and the Seventh Framework Research Programme (2007–2013) of the European Commission (FP5, FP7). The largest of these research projects have been the Nurses' Early Exit Study (NEXT, 2002–2005), Registered Nurse Forecasting study (RN4CAST, 2009–2011), Health Professional Mobility in the European Union Study (HEALTH PROMeTHEUS, 2009–2011) and the Mobility of Health Professionals (MoHProf, 2010–2011). Moreover, in the United States (RN Work Project 2006–2016) and in Sweden (LANE 2002–2006), longitudinal studies in relation to the graduate RN workforce have been implemented (Table 5).

Table 5. Research programmes in relation to the health-care workforce 2002–2016.

Research project	The aim of the research	References
Nurses' Early Exit Study (NEXT 2002–2005, N = 39 689, ten European countries)	To investigate the reasons, circumstances and consequences surrounding premature departure from the nursing profession.	Hasselhorn et al. (2003a/2005a) www.next.uni-wuppertal.de
Registered Nurse Forecasting Study (RN4CAST 2009–2011, total of 16 countries)	To determine how hospital nurse staffing, skill mix, educational composition, and quality of the nurse work environment impact hospital mortality, failure to rescue, quality of care, and patient satisfaction.	Bruyneel et al. (2009), Sermeus et al. (2011) www.rn4cast.eu
Health Professional Mobility in the European Union Study (HEALTH PROMeTHEUS 2009–2011, 17 European countries)	To investigate movement of health professionals in the European Union.	Wismar et al. (2011) www.ehma.org
Mobility of Health Professionals (MoHProf 2010–2011, 26 countries)	To investigate trends of mobility of health professionals to, from and within the EU.	Tjadens et al. (2012) www.mohprof.eu
Longitudinal Analysis of Nursing Education study (LANE 2002–2006, Sweden, N = 4316)	To investigate the health status as well as retention, turnover rates and professional development of newly qualified nurses.	Rudman et al. (2010)
RN Work Project 2006–2016, United States	To investigate new nurses' turnover rates, their intentions, and attitudes such as intent, satisfaction, organizational commitment, and preferences about work.	Kovner et al. (2007) www.rnworkproject.org

RNs' high organizational turnover has been identified as an ongoing problem (Currie & Carr Hill 2012). In the United States, it has been estimated that the annual organizational turnover rate for RNs working in hospitals is on average 14% of the national level (AACN 2012). Organizational turnover rates have varied from 10% to 55% between different countries (McCarthy et al. 2002, McCarthy et al. 2003, Castle & Engberg 2005, O'Brien-Pallas et al. 2010, Toren et al. 2012). Higher turnover rates in units have been associated with an increase in the likelihood of patients experiencing medical errors (O'Brien-Pallas et al. 2010) and with an increased number of patient falls (Bae et al. 2010).

Statistical information about RNs' annual professional turnover rates was not located from the literature or from previous research. Statistical information, and also empirical research evidence, however, was found relating to the proportion of RNs not employed in the nursing workforce or working in another field (Table 6).

Table 6. Rates of RNs working in another field or out of the nursing workforce.

Author, year, country	Sample	Nurses and other professionals who had left their primary profession
Ailasmaa (2013), Finland	RNs, midwives and public health nurses	7% of RNs, midwives and public health nurses (n = 5290) were working in a field other than social and health care in the year 2010.
North et al. (2013), New Zealand	Graduate RNs	26% of graduate RNs were no longer working in the New Zealand RN workforce in a five-year follow-up study.
Brewer et al. (2012b), United States	Newly licenced RNs	1% of newly licenced RNs were no longer working as an RN in a one-year follow-up study.
HRSA (2010), United States	RNs	15% of RNs (n = 466,564) were not employed in the nursing workforce in 2008.
Rudman et al. (2010), Sweden	Graduate RNs	2% of the graduate RNs had left the nursing profession five years after graduating.
Socialstyrelsen (2009), Sweden	RNs	12% of RNs were not employed within the health-care system in the year 2006.
Kovner & Djukic (2009), United States	Graduate RNs	2.1% of RN graduates who passed the National Council Licensure Examination left the nursing profession within two years.
Black et al. (2008), United States	RNs	4.2% of RNs who were licensed to practice in the United States in 2004 (N = 2,906,615) worked in non-nursing employment.
Smith et al. (2007), United States	Nurses	7% of nurses (n = 1438) were employed in jobs not related to nursing.
Engberg et al. (2007), Sweden	New graduates (occupational therapists and physiotherapists)	3% (n = 840) had completely left their professions for other careers 3 years after graduation.
CIHI (2010), Canada	RNs	5% of RNs were not employed in nursing in the year 2009.

Studies concerning former RNs have mainly been implemented in the United States, the United Kingdom and Australia (Appendix 1). Studies concerning actual leavers from the profession are scarce (Black et al. 2008, Black et al. 2010, Nooney et al. 2010, Seston et al. 2009). Obtaining data related to employees who have actually changed their profession has also proved to be very difficult (Chapman et al. 2009). Multiple variables have been provided as the reasons behind former RNs having left their profession. These variables included: better pay in another field (Spratley et al. 2000, Smith et al. 2007, Black et al. 2008), stress/burnout (Cartledge 2001, Cheung 2004, Black et al. 2008) and unsatisfactory working conditions in nursing (Hasselhorn et al. 2005b, Black et al. 2008, Gök & Kocaman 2011). In a study by Black et al. (2008), almost all RNs (91%) under the age of 30 reported workplace concerns as the primary reason for not working in nursing. Nurses have reported working in many types of employment after leaving nursing, including health-related service provision, administration or management, and retail sales or services (Black et al. 2008).

Many challenges have been identified globally in relation to RNs' job satisfaction and nursing practice environments (Coomber & Barriball 2007, Zangaro & Soeken 2007, Tervo-Heikkinen et al. 2009, Utriainen & Kyngäs 2009, Poghosyan et al. 2010, Liu et al. 2012a, Liu et al. 2012b, Lu et al. 2012, Kutney-Lee et al. 2013, You et al. 2013). Nursing shortage has been associated with RNs' job dissatisfaction, stress and burnout (Toh et al. 2012). Even a decade ago, 17–40% of RNs were already reporting dissatisfaction with their jobs across five countries (United States, Canada, England, Scotland, and Germany) (Aiken et al. 2001). In a more recent study by Aiken et al. (2011b), the level of RNs dissatisfied with their job ranged from 22–60% and the rate of burnout ranged from 15–60 % across nine countries (United States, China, South Korea, Thailand, Japan, New Zealand, United Kingdom, Canada, Germany). According to the RN4CAST Study, in Europe between 11% (in the Netherlands) and 56% (in Greece) of nurses reported dissatisfaction with their job. In this study, RNs reported dissatisfaction with wages, educational opportunities and opportunities for advancement (Aiken et al. 2013). RNs in China have also reported high levels of job dissatisfaction (45–54%) and burnout (17–37%) (Liu et al. 2012a, Zhang et al. 2013).

3.2 Nursing workforce in Finland and the shortage of RNs

There are 75,000 RNs, public health nurses and midwives in the labour force (Ailasmaa 2013). RNs are among the youngest major occupational groups in social and health care, with the mean age of an RN being 42.8 years (Ailasmaa 2013). The RN occupation is still female dominated; a total of 94% of RNs are female (Official Statistic of Finland 2012). There are 9.6 practicing nurses per 1,000 of the population, which is slightly more than the European average (the mean for EU-27 countries is 7.9). The nurse to doctor ratio is also the second highest in Europe, with 4.3 nurses per physician (the mean for EU-27 countries is 2.5). (OECD 2012.)

In Finland, the majority of RNs work in public funded and municipally operated health services (health centres and hospital districts) (Vuorenkoski et al. 2008). Moreover, RNs play an important role in the Finnish health care system (Teperi et al. 2009), and may carry out tasks that in other countries would be carried out by physicians (Vuorenkoski et al. 2008). The total expenditure for health as a percentage of the gross domestic product (GDP) was 9.1% in 2012 (WHO 2013). One of the explanations provided for the low total health-care expenditure in Finland is the low salary level for health-care professionals, especially the salaries for nurses (Vuorenkoski et al. 2008). The average total earnings of RNs working in the municipality was 3,034 euros per month in the year 2011 (Tehy 2013).

The nursing shortage has also been a cyclical phenomenon in Finland and cyclical nursing shortages have been noted in our country since the 1920s (Santamäki 2004). Four decades ago, the first studies concerning RNs' professional turnover were already being conducted (Siivola 1963, Artman & Penttilä 1972). RN unemployment during the economic depression of the 1990s has now turned into a present-day workforce shortage (Santamäki 2004, Pitkänen et al. 2009, Kokko 2009, Tuomaala 2010, Koponen et al. 2012, Alatalo et al. 2013); although the current shortage has in some extent diminished (Ministry of Employment and the Economy 2014) mainly because of the downturn in Finnish economy. According to the Occupational Barometer, which was published in February 2014, physicians and registered nurses are the two main occupations for which there is the greatest shortage of job seekers (Ministry of Employment and the Economy 2014). Moreover, in January 2014, there were 3 420 vacancies open for RNs; although at the same time 2 215 RNs were unemployed (Harju et al. 2014). Furthermore, it was estimated that in the autumn of 2012, there were 948 registered nurses or specialist nurse vacancies unfilled in the municipalities (a shortage of 2.8%) (Local government employers 2013). RN unemployment is currently at a very low level. In 2012, only 1,490 RNs and public-health nurses received earnings-related unemployment benefits paid by the Union of Health and Social Care Professionals (Tehy) unemployment fund (Tehy 2013).

In Finland, this nursing shortage is expected to worsen over the coming decades (Pitkänen et al. 2009, Tuomaala 2010, Koponen et al. 2012). Two main reasons have been identified as the main antecedents for the RNs shortage in our country: (1) a significant proportion of health-care professionals will retire in the near future, and (2) the demand for health services will continue to increase with the ageing population and the growing expectations on medical care (Vuorenkoski et al. 2008, Kokko 2009, Koponen et al. 2012). The European Commission (2012) has projected a total of 235,450 additional vacancies in the health-care and social sector between 2008–2025 in Finland. Almost half (49.7 %) of the RNs working in municipalities will retire between 2010 and 2030, (Halmeenmäki, 2009) and there will be 66,660 new workplaces opening in the social and health-care sector (Ministry of Social Affairs and Health 2009, The Ministry of Education and Culture 2011). The retirement attrition rate is highest for nurse managers;

four out of five (79.8%) will retire by the year 2030 (Halmeenmäki 2009). The total workforce gap in the social and health-care sector is estimated to be 20,000 employees, or perhaps even higher (Koponen et al. 2012).

Finnish RNs have reported high levels of affective commitment to their organizations and the profession (Laine 2005), and have indicated high levels of work engagement (Haybatollahi 2009) and high job satisfaction (Kuokkanen et al. 2003, Kuokkanen et al. 2010). The main reasons for entering the nursing profession in Finland include: the desire to help, feeling that it was the right profession personally, secure job possibilities, diversity of working opportunities, nursing as a calling and an appreciation for the profession (Santamäki et al. 2009).

Working in social and health-care in Finland has been experienced rewarding in many ways (Laine 2005, Laine et al. 2009, Kvist et al. 2013). According to the RN4CAST Study, patients to nurse ratio was 7.6 in Finnish hospitals, which is slightly less than the average in Europe (mean patients to nurse ratio was 8.3 among nine European countries) (Aiken et al. 2014). However, challenges concerning the nurse workforce in Finland have also been identified (Suonsivu 2003, Hintsala 2005, Kuokkanen et al. 2010, Aiken et al. 2012). RNs have reported that the number of RNs per patient is low (Partanen 2002, Tervo-Heikkinen et al. 2008). In elderly care, the main request made by nurses is increasing the number of nurses working (Kröger et al. 2009). According to the RN4CAST Study, approximately one in four Finnish RNs (27%) reported dissatisfaction with their job (Aiken et al. 2013) and one in five (22%) regarded themselves to be burnt out (Aiken et al. 2012). This study also reported that 15% of nurses were dissatisfied with their career choice and 49% had intent to leave their current job within the year (Aiken et al. 2013).

Many young RNs work in fixed-term employment during their early career in Finland. Over 40% of RNs under the age of 35 were working in fixed-term employment in the municipality sector in the year 2011 (Tehy 2013). Young RNs have reported experiencing employment insecurity in Finland (Laine et al. 2009), and RNs with an insecure work contract have reported lower work ability and lower job involvement than those with permanent employment (Elovainio et al. 2010). In a study by Heponiemi et al. (2010), RNs who were employed in fixed-term contracts also experienced low levels of justice in their organization and its management, and were more likely to feel that their work interfered with their family life.

3.3 The significance of RNs' intention to leave the profession

Leaving a profession has been considered to be a more significant work transition than leaving a job but staying in the same profession (Carson et al. 1995). When RNs leave their organization in order to work in another nursing organization, it produces costs and leads to a temporary reduction in the organization's productivity (Li & Jones 2012). In Canada, it has been estimated that the average cost of one nurse leaving an organization is up to 25,000 Canadian dollars (CNA 2008). In New Zealand, it was estimated that the

cost of RN turnover was half an average salary (\$23,800, comprising \$3,878 per new employee and \$19,922 per leaver) (North et al. 2012). Therefore, the reasons why RNs are leaving their organizations are of interest to all health-care organizations that are seeking to retain their qualified staff (Simon et al. 2010). From the perspective of health-care systems and workforce, however, this kind of organizational turnover is not a major problem because these RNs still continue within the nursing workforce.

However, professional turnover has more serious effects on the society, health-care systems and the nursing workforce. When RNs leave the profession, their human capital (knowledge, experience, expertise) will be lost from the nursing workforce (Parry 2008, Barak et al. 2001). The number of RNs in the job market will also decrease (Widerszal-Bazyl et al. 2008), which will exacerbate the global nursing shortage (Buchan & Aiken 2008) and lead to a permanent loss of productivity in the health-care field (Takase 2010). The financial investments in the nurse's professional education, orientation and continuing education are also lost. For example, in Finland one RN's education in a University of Applied Sciences currently costs the society approximately 29,000 euros (Finnish National Board of Education 2013). Therefore, in a time of a global nursing shortage, the retention of the RN workforce is a priority for health-care policymakers (European Commission 2012).

Most of the previous literature has viewed turnover from an organizational or workforce perspective, in terms of it as a preventable or a negative result (e.g. high cost, loss of productivity) (Hayes et al. 2012). However, many positive consequences of nursing turnover have also been recognized (Gray et al. 1996, Tai et al. 1998, Holtom et al. 2005). According to Simon et al. (2010), low turnover in an organization can signify its inability to hire talented or highly-skilled, experienced nurses. Turnover can also produce positive effects such as the infusion of new ideas and the introduction of new practices into organizations (Cavanagh 1989, O'Brien-Pallas et al. 2006), and can also contribute to an organization's productivity (Hayes et al. 2006).

Moreover, leaving the profession might also produce benefits for the individual RN. Leaving the job allows RNs to move to the job where the wages and employment packages are the best (Gray et al. 1996). According to McHugh et al. (2011), nurses working in other jobs or settings, such as the pharmaceutical industry, were more satisfied and experienced less burnout than nurses directly caring for patients in hospitals and nursing homes. Moreover, leaving the profession might be advantageous for certain groups of RNs, for example those with severe health problems or those wishing to further their careers in other directions (Laine et al. 2009). According to the results of the NEXT study, some nurses were resigning because of poor health, low work ability or because of burnout (Hasselhorn et al. 2005b). It is possible that these RNs would not have been retained in the organizations or the profession by any means.

Organizational turnover and professional turnover are phenomena that are strongly connected to each other. Leaving a profession to work in another profession usually

necessitates a departure from the employment in the organization the RN was working within (Parry 2008). On the other hand, an RN's intention to remain within an organization might result from identification with his or her occupation (Chang et al. 2007). Turnover can also initiate a withdrawal process; RNs may first seek internal withdrawal inside the organization prior to forming intentions to leave the hospital and the profession (Krausz 1995). For example, according to the study by Parry (2008), RNs' intention to change employer was associated with their intention to change profession. If nurse managers were able to stop this process, more nurses might be retained in the profession (Cortese 2012). A meta-analytic review by Cooper-Hakim and Viswesvaran (2005) suggests that there is a common psychological construct underlying both organizational and professional commitment. Therefore, according to Gilmartin (2013), newly graduated RNs may leave the profession entirely because they had an unsatisfactory job experience in one nursing unit, in one organization.

Even though intentions to leave an organization and the profession are highly connected, different variables have been associated with employees' intention to leave their employer and their intention to leave the career (Hess et al. 2012). Moreover, different variables have also been associated with RNs' intention to leave a ward or organization and the profession (Lavoie-Tremblay et al. 2011, Cortese 2012, Hinno et al. 2012, Lee et al. 2013). Therefore, a growing amount of research has been conducted in order to compare which variables are associated with organizational turnover intent and which variables are associated with professional turnover intent.

One such example is the RN4CAST study, in which workload and perceived quality of care were reported to be indicators of a nurse's intention to leave the current hospital (Aiken et al. 2012); nevertheless, these same factors were not indicators of an intention to leave the profession (Heinen et al. 2013). In a study by Cortese (2012), Italian critical-care nurses' intention to leave their hospital was most strongly influenced by the characteristics of their work duties and by organizational policies, whilst the nurses' intention to leave the profession was associated with professional status and pay, as well as organizational policies. Moreover, Simon et al. (2010) reported that RNs' intention to leave an organization was related to organizational leadership and the local context. Their intention to leave the profession was, in turn, associated with variables related to their personal backgrounds and their work/home interface. Parry (2008) found that job satisfaction, organizational commitment and intention to change professions were related to the intention to change employer. However, in this study affective professional commitment and organizational commitment were related to an intention to change professions. Furthermore, Chang et al. (2007) reported that organizational commitment was associated with RNs' organizational turnover intention, whereas occupational commitment was associated with occupational turnover intention. Correspondingly, in Blau's (2007) study concerning medical technologists, job insecurity was correlated with job organizational turnover and work exhaustion was correlated with occupational turnover.

Contradictory findings, however, do exist. In a study by Hinno et al. (2012), there was no difference between the variables associated with a RNs intention to leave their current unit, hospital or the profession. However, positive ratings by RNs concerning certain work environment characteristics – such as support for professional development, adequate staffing, assuring nursing competence, and supportive management – decreased their intention to leave their current unit, hospital or the profession.

RNs have more often reported an intention to leave their organization than their profession (Hasselhorn et al. 2005b, Cortese 2012, Heinen et al. 2013, Aiken et al. 2013). However, in many of the earlier turnover studies it is not clear whether RNs have been reporting only organizational turnover intent or if they have also been reporting professional turnover intent. For example, Price and Mueller (1981, p. 546) used the following item to measure turnover intention: “Which of the following statements most clearly reflects your feelings about your future in the hospital? (a) Definitely will not leave, (b) Probably will not leave, (c) Uncertain, (d) Probably will leave, (e) Definitely will leave”. Another example is from the study by Beecroft et al. (2008), where the following measure was used alone to gauge RNs turnover intention: “Do you plan to leave this facility within the next year?” Results from these kinds of turnover studies do not provide answers for whether these RNs intended to leave only their organization or if they intended to leave the profession.

Many of the earlier turnover studies have also failed to distinguish between voluntary and involuntary turnover intent (Mobley et al. 1979, O’Brien-Pallas et al. 2006, Parry 2008, Simon et al. 2010, Currie & Carr Hill 2012). Examples of involuntary departures are those due to: retirement, layoffs, dismissals, serious illnesses (Price & Mueller 1981) and leaving due to medical, educational or maternity reasons (O’Brien-Pallas et al. 2006, Duffield et al. 2009). This lack of distinction in the results is due to the fact that voluntary and involuntary turnover intent is not always separated in the research questionnaires (Tai et al. 1998, Coomber & Barriball 2007), which is mainly because the costs for the organizations are the same regardless of whether (or why) RNs resign themselves or if they are asked to leave (Hayes et al. 2006). In a study by Ingersoll et al. (2002), for example, planned five-year professional turnover was highest among the most satisfied and committed RNs. However, the turnover of these RNs was mainly related to their plans for retirement, and for that reason was involuntary. Also, in a study by Eley and Rogers-Clark (2010), one of the main reasons that RNs gave for their intention to leave nursing was their plan for retirement.

It has been recommended that research into RN turnover should include both the intention to leave an organization as well as the intention to leave the profession in order to obtain a complete overview of the turnover phenomenon (Parry 2008, Simon et al. 2010, Cortese 2012). Researchers have also been encouraged to compare voluntary organizational versus occupational turnover processes (Blau 2007); this kind of research might deepen the understanding of why some RNs make the decision to leave their organization and other RNs also make the decision to leave the profession.

3.4 Theoretical underpinnings of employee turnover research

Employee turnover has been one of the most researched subjects in social sciences and in organizational research. According to the literature review by Holtom et al. (2008), over 1,500 articles concerning voluntary employee turnover have been published. Personnel researchers, behavioural scientists and management practitioners have in fact already been investigating the turnover phenomenon for decades (Mobley et al. 1979). In the following two chapters, a literature review concerning employee and nurse turnover research is presented. More comprehensive literature reviews of employee turnover, however, have been produced by Holtom et al. (2008) and nurse turnover by Gilmartin (2013).

Why employees are leaving their jobs or organizations has been the subject of investigation since the beginning of the 1910s, with research interests concerning professional turnover emerging a few decades later. Research investigating why physicians were leaving their practice was instigated in the 1950s (Misra-Hebert et al. 2005). However, research concerning nurses' organizational turnover started later, in the early 1970s (Price & Mueller 1981, Irvine & Evans 1995, Tai et al. 1998, Lu et al. 2005, Hayes et al. 2006a, Chan et al. 2013, Gilmartin 2013). Moreover, the volume of research into nurses' professional turnover began to increase two decades later, in the 1990s (for example Barriball & While 1996, Robinson et al. 1997, Shindul-Rothschild et al. 1996, Lane et al. 1998). Teachers' turnover has been investigated since the 1980s, after which a considerable amount of research has been conducted on determining which kinds of teachers are more prone to leave teaching and for what reasons (Ingersoll 2001).

The turnover research tradition began by identifying turnover as a dependent variable to be explained. Accordingly, there were studies investigating turnover as a component of some more general phenomena (e.g. job withdrawal). (Price & Mueller 1981.) In the earliest research and theoretical models of employee turnover, the basic assumption was that accumulated job dissatisfaction caused turnover (Mobley et al. 1979, Holtom et al. 2005, Holtom et al. 2008). Over time, turnover research and models have become more versatile as the predictors (e.g. organizational commitment) and consequences of turnover were included (Holtom et al. 2008). Also, perceived alternatives (e.g. availability of alternative job opportunities) have become a central construct in many of the turnover studies and models (Griffeth & Hom 1988).

During the past four decades, three main models of voluntary employee turnover have been proposed (Price 2004). These three models are (1) the 'Price-Mueller model' (Price & Mueller 1981) and turnover models proposed by (2) Mowday et al. (1982) and (3) Mobley et al. (1979). These three models have focused on explaining and predicting employees' turnover from an organization; however, these models do not clearly take into account the employee's destination choice (leaving the organization or also the profession) (Kirschenbaum & Weisberg 2002).

Price and his colleagues began to develop their ‘Causal Model of Turnover’ as early as 1972 and it has been considered as a major theoretical advance in understanding why people leave their jobs (Gilmartin 2013). This model has been developed and tested over three decades using many different employee groups (nurses, teachers, managers and clericals) (Price 2001, Price 2004). In this model, job satisfaction and intent to leave operate as the main antecedents of turnover, and organizational commitment operates as a mediating factor between these two variables (Holtom et al. 2008). This model has also been utilized in nursing turnover research more recently (Gilmartin 2013). However, for example in Chens et al.’s (2008) longitudinal study, the model’s anticipated capability to predict a nurse’s actual decision to leave their hospital was not confirmed.

During the past four decades, many different theoretical models for career change have been introduced. Examples of these models include the ‘Theory of Careers’ (Holland & Gottfredson 1976) and the ‘Integrated Model of Career Change’ (Rhodes & Doering 1983, Rhodes & Doering 1993). Holland’s & Gottfredson (1976) model was developed in order to explain vocational behaviours and it has mainly been used for career counselling purposes. According to this theoretical model, individuals leave their career if their personality does not fit with the work environment. For example, a person who has a pragmatic personality will not ‘fit’ well in an artistic job. (Holland & Gottfredson 1976.) According to the model by Rhodes and Doering (1983), the motivation for changing career is induced by job dissatisfaction or career dissatisfaction. Moreover, their model demonstrates the withdrawal process through which an employee considering job and career change will pass.

More recently, metaphors like ‘*boundaryless careers*’ or ‘*protean career*’ have been used in order to challenge traditional viewpoints of stable employment and associated organizational careers (Arthur 1994, Sullivan 1999, Inkson 2005, Hess et al. 2012). New understanding about careers includes the idea that employees move between jobs, organizations and countries, and even professions (Hess et al. 2012). Moreover, this movement includes transitions through a career in two continua: one psychological, one physical (Arthur & Sullivan 2006). However, these abovementioned three theoretical models of careers and the new career metaphors have not been used in the research concerning RNs’ intention to leave the profession.

According to Holtom et al.’s (2008) comprehensive literature review, the theory and research of employee turnover has been cumulative. It has been recognized that there are multiple decision paths leading to employee turnover (Dickter et al. 1996) and several different push factors (e.g. job dissatisfaction) and pull factors (e.g. alternative job opportunities) are found that impact an employee’s decision to leave their job (Allen 2004). Push factors produce willingness to stop working in a current job (e.g. conflicts at work or ill health) and pull factors attract the employee in another direction (e.g. further studies or favourable conditions for early retirement) (Laine et al. 2009). Different forms of commitment (e.g. organizational, professional) have also been associated with employee turnover intent and actual turnover (Cooper-Hakim & Viswesvaran 2005).

However, despite the fact that there is already a century of cumulative research concerning employee turnover, the understanding of the causal mechanisms explaining why employees voluntarily leave their jobs is still limited (Holtom et al. 2008). Moreover, although there are many voluntary employee turnover models available, according to Mobley et al. (1979) it is not possible to create a single common turnover model that would be suitable for all occupations. Therefore, more research is needed in the field of employee turnover and the development of theoretical models for various professional groups needs to be continued (Holtom et al. 2008).

3.5 Theoretical underpinnings of nurse turnover research

Due to workforce shortages and high turnover rates, nurses' organizational turnover has gained considerable attention in nursing research during the past four decades (Hayes et al. 2012, Gilmartin 2013). This research includes a variety of topics ranging from cognitional leaving intentions to actual leaving occurrence (Simon et al. 2010). Nurse turnover behaviour appears to be a multistage process including attitudinal, decisional and behavioural components (Lum et al. 1998). Job satisfaction and intent to leave have been the most common factors associated with nurse turnover (Hayes et al. 2006, Currie & Carr Hill 2012, Hayes et al. 2012, Lu et al. 2012).

Over the past decades, many literature reviews (Cavanagh 1989, Irvine & Evans, 1995, Tai et al. 1998, Lu et al. 2005, Hayes et al., 2006, Hayes et al. 2012, Gilmartin 2013) and meta-analyses (Griffeth et al. 2000) have been published concerning nurse turnover. Many different models of nurse turnover have also been developed. Often-cited models explaining voluntary nurse turnover include: Price and Mueller's 'Causal Turnover Model' (Price and Mueller 1981), 'Cusp Catastrophe Model of Employee Turnover' (Sheridan & Abelson 1983, Sheridan 1985) and 'Integrated Model of Turnover' (Parasuraman 1998). These researches and models have, however, mainly focused on explaining why nurses are leaving their jobs or organizations (Gilmartin 2013).

Although there is a large amount of turnover research and literature available, research explicitly focusing on nurses' professional turnover is still scarce (Parry 2008, Hasselhorn et al. 2008, Simon et al. 2010, Salminen 2012). Therefore, research concerning nurse turnover from the profession has not produced the same degree of empirical knowledge and understanding as the research on nurse turnover from their job or organization (Lane et al. 1998). The majority of the earlier studies have examined intention to leave the profession from a fixed point of time and used dichotomous items (intent or no intent to leave) as a dependent variable (Laine 2005).

Three models explaining nurses' professional turnover and the underlying variables were found from previous research (Hasselhorn et al. 2003c, Hasselhorn et al. 2005b, Jourdain & Chenevert 2010). The '*NEXT model of departure from health care work*' (Hasselhorn et al. 2003c, p. 12) was formed as a theoretical framework, on the basis of which the longitudinal NEXT study was designed. According to this model, the decision to leave the nursing

profession is likely to be a process, were numerous underlying causes simultaneously affect the decision to leave the profession. Based on the results of the NEXT study, a modified theoretical model was formed (Hasselhorn et al. 2005b, p. 18). In this model, four different demands (work content, work organization, social work environment, private conditions) affect the individual nurse's health and individual factors (burnout, general health, physical diseases, work ability, age), which in turn cause the intention to leave the profession. Jourdain and Chenevert (2010, p. 717) have also developed theoretical model of the variables associated with nurses' intention to leave the profession. In their model, demand and resources are determinants of depersonalization and emotional exhaustion. These two variables affect professional commitment and psychosomatic complains, which are also associated with the intention to leave the profession.

Longitudinal research evaluating temporal components and causality issues concerning nurse turnover is rare (Brewer & Kovner 2013). According to Gaither (2009), rather than continuing to research additional variables and constructs that differ or are associated with the intention to leave the profession, mechanisms underlying these factors should be explored. Moreover, stronger theoretical models to explain nurse turnover need to be developed because the understanding of why nurses leave their job and the consequences of nurses' turnover is not yet sufficient (Gilmartin 2013). Stronger integration of the theoretical approaches between nursing research and the general management field has also been proposed in order to gain a deeper understand about the causes and consequences of voluntary nurse turnover (Gilmartin 2013).

Overall, nurse turnover studies have reported conflicting findings and a clear understanding of nursing turnover has not emerged despite the numerous studies conducted in this field (Cavanagh 1989, Gilmartin 2013). Conflicting results have been obtained from simple bivariate analyses of nurse turnover, showing that turnover behaviour is a very complex process and not easily captured (Tai et al. 1998). Empirical evidence concerning nurse turnover focuses on the determinants, whereas the consequences of nurse turnover have been studied less during the past decades (O'Brien-Pallas et al. 2006, Hayes et al. 2012). According to De Gieter et al. (2011, p. 1563): "Although many studies have examined the antecedents of nurse turnover and turnover intention, developing a single broadly accepted, comprehensive nurse turnover model remains a challenge".

3.6 Nurse workforce viewed from a generational perspective

Nursing generations have different values and different kinds of orientations to the world (Stanley 2010). There are currently four generational cohorts in today's nursing workforce (Keepnews et al. 2010): the Veterans (born 1922–1946), Baby Boomers (1947–1964), Generation X (1965–1978), and Generation Y (also called Millennials, Net Generation, Nexters, Nintendo Generation and Digital Natives) (1978–2000) (LeVasseur et al. 2009, Hutchinson et al. 2012). However, in the literature different time attributes concerning the start and end year of each generations are presented. Accordingly, in some cases in the literature the two youngest age groups are combined as a single generational group.

For example, LaVasseur et al. (2009) use the term ‘*GenXMs*’ (Generation Xers and Millennials combined) to describe the youngest generation in the workforce.

These two youngest generations, generations X and Y, share many similarities; both generations are competent with technology, both value a balance between personal and professional life, and both are ambitious (Kupperschmidt 2001). However, even though these two generations share many similarities (Lavoie-Tremblay et al. (2011), they also have their own distinguishing characteristics, some of which are described in Table 7.

Table 7. Descriptions of the X and Y Generations’ characteristics and values based on the literature.

Generation X (born 1965–1978)	Generation Y (born 1978–2000)
Entered job market in the economic decline and learnt that higher education is the only way to get a proper job (Cordeniz 2002, Kupperschmidt 1998).	“were raised in a period of prosperity, pluralism, interactive media, increased federal spending on children, and societal focus on family values and child safety devices” (Kupperschmidt 2001, p. 570).
Pragmatism, independence and resourceful, but also self-absorbed, cynical, materialistic, and lacking of a work ethic (Kupperschmidt 1998).	The most educated and technologically knowledgeable generation (Lower 2008).
Value autonomy, recognition and intellectual stimulation (Takase et al. 2009).	“combine the work ethic of baby boomers with the can-do attitude of veterans and the technological savvy of generation Xers” (Lavoie-Tremblay et al. 2008, 726).
Less loyal to the employer than earlier generations (Smola & Sutton 2002).	Appreciate flexible work schedules and shifts, professional development, and adequate supervision (Lavoie-Tremblay et al. 2010).
Career mobility as a fact of life. Can choose nursing just as a stepping stone for other job or other countries (Duffied et al 2004b).	Recognition (monetary and peer recognition) are the key motivators in career (Lavoie-Tremblay et al. 2010).
The idea of a lifetime career is undesirable for the generation Xers (Duffield et al. 2006).	Want to be consulted and acknowledged for their contributions in the workplace (Clendon & Walker 2012).

The younger generations of nurses differ in many ways from the older generations; for example, age has been related to nurses’ perceptions of their work and work environment (Currie & Carr Hill 2012). In a study by Blythe et al. (2008), the youngest nurses (20–29) reported higher levels of stress, were more emotionally exhausted, and experienced greater depersonalisation, but they found their work fulfilling. The youngest cohort of nurses has been reported to be less satisfied with their job (Wilson et al. 2008, Wieck et al. 2010, Gurková et al. 2013) and more worried about their employment security (Laine et al. 2009) than older nurses. Younger generations value economic returns and job security more highly than do older generations (Takase et al. 2009). In units where a higher proportion of young RNs (under 35 years of age) are working, higher turnover intention has also been reported (Tschannen et al. 2010).

Generation X nurses have reported more negative experiences and a greater intention to leave the job than baby boomers (Leiter et al. 2010). Moreover, the level of burnout is reported to be higher among the youngest employees (Maslach et al. 2001), and generation X nurses have reported more symptoms of job burnout and are more inclined to change their jobs than nurses of the baby boomer generation (Leiter et al. 2009). Contradictory findings also exist, however; Stordeur et al. (2003) found a U-shaped relationship between age and job satisfaction. The youngest nurses were the most satisfied; however, job satisfaction began to decline from the age of 30. In Klaus et al.'s (2012) study, the youngest cohort (20–29) also reported higher job satisfaction scores than any other. Furthermore, in a study by Keepnews et al. (2010) generation Y nurses reported greater organizational commitment than generation X and baby boomers.

It has been recommended that more research should be conducted on the motivations, expectations and needs of generation Y nurses (Lavoie-Tremblay et al. 2010). Moreover, it has been noted that a limited amount of research has been conducted on what first attracted generation Y to nursing or what might retain them in the nursing workforce (Hutchinson et al. 2012). However, although the amount of research investigating nurse turnover from a generational perspective is increasing (Takase et al. 2009, Hayes et al. 2012), growing criticism has been directed at this generational literature. These critiques have been presented because in the literature there is considerable variance in exactly when each generation begins and ends (Costanza et al. 2012) and there is little agreement on the composition of each generation (Parry & Urwin 2011). Also, national culture and different historical, political and technological events pose challenges to generation theories; research on the experiences of generations in the United States, for example, cannot be directly mapped onto experiences in other countries (Parry & Urwin 2011). The empirical literature also assumes that within a generation, both genders have similar experiences (Parry & Urwin 2011). It can be concluded that empirical evidence on generational differences in work values is mixed (Parry & Urwin 2011) and fraught with methodological limitations (Costanza et al. 2012).

3.7 Literature concerning graduate registered nurses

All young RNs can be defined as graduates in the early stage of their career. The experiences of nursing graduates have been widely examined in the nursing literature (Newton & McKenna 2007). Newly qualified nurses have reported experiences of stress and difficulties in transition from being a student to the role of a registered nurse in a different countries; for example in Ireland (Suresh et al. 2013), Norway (Bjerknes & Bjørk 2012), Canada (Duchscher 2008, Duchscher 2009), Japan (Tominaga & Miki 2011), United Kingdom (Higgins et al. 2010) and the United States (Zinsmeister & Schafer 2009, Pellico et al. 2009, Unruh & Nooney 2011).

As far back as five decades ago, in the late 1960s, Margaret Kramer developed the concept of '*Reality Shock*', a concept she still uses to describe the experiences of newly graduated

nurses when they are transitioning from the nursing schools to their first workplaces in hospitals. These graduate nurses experience reality shocks because their expectations and the ideas learned in the nursing school did not meet the realities they face in the workplace. (Kramer 1974, Kramer et al. 2013.) The Canadian researcher Duchscher developed Kramer's concept of a reality shock further in her longitudinal, evolving programme of qualitative research (Duchscher 2008, Duchscher 2009). Duchscher uses the concept of '*Transition Shock*' to describe the reaction by new nurses when they enter nursing practice environments as newly qualified nurses. In her transition theory, a staged experience of transition that occurs during the initial 12 months of the graduate's introduction to professional practice environments is described (Duchscher 2008, Duchscher 2009). According to this theory, if the transition process fails it could drive graduate nurses towards leaving the profession (Duchscher 2009).

The transition from the protected environment of a nursing school to the unfamiliar context of professional practice has been described as a difficult journey (Duchscher 2009). This transition period is: "a time when nurses need to consolidate their knowledge and skills, and adjust to their new role" (Edwards et al. 2011, p. 1). During this transition period, many graduate nurses report the intention to leave their job (Kovner et al. 2007, Yeh & Yu 2009) and their organizational turnover rates are high (Bowles & Candela 2005). Graduate RNs have also reported concerns about whether their level of knowledge is adequate for the workplace (Andersson & Edberg 2010). Moreover, they have reported that their job satisfaction is reduced by role overload and role ambiguity (Chang & Hancock 2003).

Newly graduated RNs have reported experiences of burnout (Laschinger et al. 2009), bullying (Laschinger et al. 2012a, Laschinger et al. 2012b), emotional exhaustion (Lanchinger 2012) and dissatisfaction with their pay (Casey et al. 2004, Murrells et al. 2008). Graduates have been dissatisfied with their schedules and career opportunities (Casey et al. 2004). Moreover, graduates of a younger age have been defined as especially vulnerable to early-career burnout; in a study by Rudman and Gustavsson (2011) almost a fifth of graduate nurses reported extremely high levels of burnout during their first three years after graduation. In this study, burnout was also associated with the intention to leave the profession. Hallin and Danielson (2008) found that RNs six years after their graduation described nursing as offering them broad horizons and the potential for advancement. However, they also felt that their expertise was undervalued and under used. Moreover, novice nurses have cited unfriendliness and unsupportiveness in the workplace as reasons for them to leave the profession (MacKusick & Minick 2012).

3.8 Intention to leave the profession within professions other than RNs

A strong intention to leave the profession are observed in Finland within other professions, such as social workers (Matela 2011), physicians (Lindfors et al. 2009) and teachers (Jokinen 2013) (Table 8). In international studies, professional leaving intentions have been at a moderate level among physicians (McComb 2008), teachers (Hancock &

Scherff 2010, Pomaki et al. 2010, Ciftcioglu 2013), social workers (Whitaker et al. 2006), substance abuse counsellors (Rothrauff et al. 2011) and certified athletic trainers (Terranova & Henning 2011). However, it is difficult to compare the professional leaving intentions of different professionals, because many different kinds of items with different timeframes have been used to measure intentions to leave the profession.

Table 8. Intention to leave the profession within professions other than RNs.

Author, year, country	Sample	Item used to measure leaving intention	Intention to leave the profession	Key Findings
Lindfors et al. (2009), Finland	328 physicians (anaesthetists)	“If possible, would you change your job to one in another profession with the same salary?”	43% of the physicians were willing to consider changing their job to a profession other than medicine (with the same salary).	Conflicts with co-workers and superiors showed the strongest association with career change intentions.
McComb (2008), New Zealand	566 physicians (general practitioners)	“I intend to leave general practice within 6 month.” “I intend to leave general practice within five years.”	12% of physicians indicated an intention to leave general practice within 6 months, and nearly a third (29%) indicated an intention to leave within five years.	Intention to leave was highest amongst physicians aged 60 and over.
Jokinen (2013), Finland	1,938 teachers	Not available	17% of teachers were seriously considering changing the profession.	Personal relationships and the atmosphere are important for the retention of teachers.
Ciftcioglu, (2013), Turkey	146 teachers working in high school	The three-item scale was used to measure leaving intention.	Mean rate for occupational turnover intention was 2.05.	Teachers with a positive prestige perception of teaching had high affective commitment to their occupation, and low occupational turnover intention.
Hancock & Scherff (2010), United States	4,520 full-time English teachers	“How long do you plan to remain in teaching?”	71% of the teachers planned to teach as long as they were able or until eligible for retirement.	Many factors were associated with teachers’ attrition, e.g. being a minority teacher, years of teaching experience and teacher apathy.
Pomaki et al. (2010), Canada	71 teachers	“If the opportunity would arise, I would quit the teaching profession”	Median for turnover intention was 1.95 (SD .52, scale 1-4)	Colleague support was associated with teachers’ turnover intention.

Author, year, country	Sample	Item used to measure leaving intention	Intention to leave the profession	Key Findings
Whitaker et al. (2006), United States	4,900 social workers	Career plans for the next two years were questioned.	4.7% of social workers indicate they will leave social work, but continue working, within two years.	Those who had intention to leave the profession were more likely to be aged 26 to 34.
Matela (2011), Finland	157 social workers employed in child welfare	“I’m considering a change of occupation”, “I am actively looking for another job in another field”	55% of the respondents had considered a change of occupation frequently during the previous year.	Organizational culture and management affected the retention and leaving intention among social workers.
Rothrauff et al. (2011), United States	929 substance abuse counsellors working in private substance abuse treatment (SAT) programmes.	“I frequently think about leaving the SAT field” “I am exploring career opportunities outside the SAT field”	5% of counsellors were definitely thinking about leaving the field, 7% were exploring options outside the field and 4% were intending to leave the field within the next year.	Younger and noncertified counsellors had stronger intention to leave the field than older and certified substance abuse counsellors.
Terranova & Henning (2011), United States	191 Certified Athletic Trainers (ATs)	“What is the probability you will be working in the athletic training profession one year from today” “Within the past 6 months how often have you considered leaving the athletic training profession?”	Mean score for the item measuring consideration to leave the profession within the past 6 months was 1.36 (scale 1–4).	There was a strong negative correlation between various facets of job satisfaction and intent to leave the profession.

When comparing RNs to other professionals (e.g. physicians or teachers) common variables can be found concerning the intention to leave the profession. Younger persons also tend to have higher levels of intention to leave the profession than older persons in other professions. For example, in Heponiemi et al.’s (2009) study, younger physicians (n = 2,650) in Finland had a stronger intention to change their profession than did older physicians. In the study by Whitaker et al. (2006), social workers who had an intention to leave the profession were more likely to be between the ages of 26 and 34. Moreover, younger certified substance abuse counsellors have reported a stronger intention to leave than their older colleagues (Rothrauff et al. 2011). Affective commitment has been associated with RNs’ (Laine 2005) as well as teachers’ (Ciftcioglu 2013) intent to leave their profession.

4. LITERATURE REVIEW CONCERNING NURSES' INTENTION TO LEAVE THE PROFESSION

The literature review for this dissertation was constructed of two parts. Firstly, an integrative literature review concerning nurses' intention to leave the profession with the time frame from 1985 to July 2009 was conducted (Paper I). Secondly, in this summary the literature review was updated to cover the research published during the last five years (2008–2013) (Appendix 2).

Although the first integrative literature review searches for Paper I were conducted under the guidance of a library information specialist, the initial literature search was more restricted than the updated literature review (conducted for this summary). This could be the reason why in the subsequent updated search two studies was located from the year 2007 (Chang et al. 2007, Enberg et al. 2007) and five studies from the year 2008 (Estryn-Behar et al. 2008, Hasselhorn et al. 2008, Kankaanranta & Rissanen 2008, Lavoie-Tremblay et al. 2008, Scott et al. 2008, Widerszal-Bazyl et al. 2008) that were not found in the original search. Therefore, when the literature review was updated, the year 2008 was added to the search. The studies that were not located for the integrative literature review (Paper I) were added to this summary.

Integrative reviews (Paper I, Summary) were performed in order to identify, evaluate and synthesize the published peer-reviewed research literature concerning nurses' intention to leave the profession, both in Finland and internationally.

4.1 Literature search

The search strategy used in the updated literature review to obtain relevant articles contained three databases: PubMed (2008–October 2013), CINAHL (Cumulative Index to Nursing & Allied Health Literature) (2008–October 2013), and Social Sciences Citation Index (2008–October 2013).

Both MeSH terms (medical subject heading) searches and free text searches were employed.

The following MeSH terms searches were conducted: "*Personnel Turnover*" and "*Nurses*". Moreover, a combination of the following search words was used: "*nurse**", "*nursing*", "*leaving intention*", "*personnel turnover*", "*intention to leave*", "*turnover of workforce*", "*staff turnover*", "*turnover of workers*", "*intent to stay*", "*intention to stay*", "*career mobility*", "*leav**", "*profession*", "*nursing*". In Table 9, the filters/limiters used when conducting the updated database searches are described.

Table 9. Filters/limiters used when conducting updated database searches (October 2013).

Databases	Filters, limiters
PubMed	Abstract available; Publication date from 2008/01/01; English; Adult: 19–44 years; Middle Aged: 45–64 years; Young Adult: 19–24 years
CINAHL	Abstract Available; Published Date: 2008/01/01–2013/12/31; English Language; Peer Reviewed; Exclude MEDLINE records; Age Groups: Adult: 19–44 years, Middle Aged: 45–64 years
Social Sciences Citation Index	Refined by: Web of Science Categories = (NURSING OR HEALTH CARE SCIENCES SERVICES OR HEALTH POLICY SERVICES OR ECONOMICS OR MANAGEMENT OR SOCIAL ISSUES OR PSYCHOLOGY MULTIDISCIPLINARY OR BEHAVIORAL SCIENCES) AND Document Types = (ARTICLE OR REVIEW) AND Research Areas = (NURSING OR SOCIAL ISSUES OR HEALTH CARE SCIENCES SERVICES OR EDUCATION EDUCATIONAL RESEARCH OR PSYCHOLOGY OR BEHAVIORAL SCIENCES) AND Languages = (ENGLISH) AND Publication Years = (2012 OR 2011 OR 2009 OR 2010 OR 2013 OR 2008) Timespan = All years. Databases = SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH

The following inclusion criteria were used when updating the literature review: (1) the study had to include analysis of empirical data concerning RNs' intention to leave the profession; (2) the sample had to include RNs – other nurses (for example nursing aids, licensed practical nurses) might be included in the samples; (3) the language had to be English, Swedish or Finnish; (4) the studies were published from 2008 onwards; (5) the studies were published in a journal. Articles concerning organizational turnover and nursing students were excluded. Moreover, books, dissertations, reports, editorials, opinions, discussions or grey literature were also excluded.

The initial search strategy identified a total of 677 articles, once duplicates were removed. Firstly, the title and abstract (if available) were inspected. If the abovementioned criteria were met, the full article was read. If the article met the criteria, it was included in the review. Using the preliminary inclusion criteria, the article screening yielded 44 research studies published in peer-reviewed journals. The following data were extracted from these 44 studies: author(s), year, country of origin, design, aim of the study, sample, setting, the main results, proportion of nurses with an intention to leave the profession, measurement instrument/scales used in the study and the item(s) used to measure leaving intention.

4.2 Description of the included research

All reviewed studies were either quantitative ($n = 43$) or had a mixed method design ($n = 1$). Self-administered survey questionnaires were the most common method of data collection in these studies. Most of the studies reported cross-sectional data. Studies based on the NEXT study data (Hasselhorn et al. 2008, Estryn-Behar et al. 2008, van der Heijden et al. 2009, Derycke et al. 2010, Estryn-Behar et al. 2010, Li et al. 2010, van

der Heijden et al. 2010, Li et al. 2011, Derycke et al. 2012) and LANE study data were reporting longitudinal data (Rudman et al. 2010, Rudman & Gustavsson 2011, Rudman & Gustavsson 2012, Rudman & Gustavsson 2013).

Providing a comprehensive review of the existing research concerning RNs professional turnover intent was difficult, because a clear definition of concept 'intent to leave the profession' was lacking in the reviewed studies. There were many different approaches to how professional turnover intention was operationalized in the questionnaires, and therefore a comparison between the studies concerning the rate of leaving intention was difficult. Moreover, many of these instruments, scales and items to measure leaving intention had been developed for the particular study and were not previously validated. The timeframe in these items related to leaving intention also varied from 'next year' (Heinen et al. 2013) to 'within the next 3–5 years' (DiMattio et al. 2010).

4.3 Proportion of young RNs and graduate RNs with an intention to leave the profession

Research concerning young RNs' intent to leave the profession is scarce. Only two studies were located in which the experiences of particularly young nurses (under 30 years old) were investigated (Lavoie-Tremblay et al. 2008, Glendon & Walker 2012). Three more studies were identified where the mean age of the participants was less than 30 years (Scott et al. 2008, Laschinger 2012, Lee et al. 2013). Moreover, in Salminen's (2012) study, approximately one-quarter (27%, $n = 94$) of the participants were under 35 years of age. In five of the studies, the sample was comprised of graduate nurses; however, the mean age in these studies was over 30 years (Enberg et al. 2007, DiMattio et al. 2010, Lavoie-Tremblay et al. 2011) or was not presented (Rudman & Gustavsson 2010, Rudman & Gustafsson 2011).

Young nurses' and graduate RNs intention to leave the profession varied across studies from 6% (Scott et al. 2008) up to 59% (Lee et al. 2012). In most of these studies, the percentage rates of RNs with an intention to leave the profession were reported. In some studies, however, only the mean for the scale or the item measuring leaving intention was presented (example Chang et al. 2008, Laschinger 2012) which makes the comparison of leaving intention difficult (Table 10).

Table 10. Young and graduate RNs intention to leave the profession (updated integrative review).

Author, year	Country	Sample size	Consider leaving nursing %
Lee et al. (2013)	Taiwan	1,283 nurses working in acute-care hospitals (mean age 29.2, SD = 4.94).	59% were reporting intent to leave the profession.
Rudman & Gustavsson (2013)	Sweden	1,417 new graduates (mean age in the first year of nursing education was 28.4).	9.1% to 18.1% of graduates strongly intended to leave the profession across the first five years of employment.
Clendon & Walker (2012)	New Zealand	647 nurses, aged under 30 years.	Over 10% of these young nurses were considering leaving the nursing profession.
Laschinger (2012)	Canada	342 new graduate nurses, mean age of 28.22 (SD 6.79).	Mean for the career chance was 1.53 (range 1–5)
Rudman & Gustavsson (2012)	Sweden	1,702 students/new graduate. Average age of nursing student was 28 (SD 7) (ranging from 20 to 52 years) at the first data collection.	Mean for occupational turnover intentions scale was 1.36 (SD 0.68, range 1–5)
Salminen (2012)	Finland	343 RNs, of those 94 RNs were under 35 years.	Nurses age of under 35 years, 37% had frequent intention to leave the profession.
Rudman & Gustavsson (2011)	Sweden	1,153 new graduate nurses, of those 279 were under 25 years of age (defined as young in this study).	10–20% of graduate nurses had intention to leave the profession.
Lavoie-Tremblay et al. (2011)	Canada	145 nurses, of those 86 nurses were 24 years or younger (58.3%). Total of 59 nurses were between 25 and 44 years old (40.7%).	9.7% of nurses expressed intent to quit their profession.
DiMattio et al. (2010)	United States	390 graduate nurses, mean age 33.65 years (SD 7.30).	26.9% of graduate nurses intended to leave hospital nursing within the next 3–5 years.
Rudman et al. (2010)	Sweden	4,306 graduate nurses completed the baseline questionnaire. Total of 24.5 % of the 2006 cohort were under 29 years old.	10.1% of the cohort who graduated in year 2002 intended to leave the profession one year after graduating. 19.0 % of nurses who graduated in year 2006 were having intention to leave the profession.
Lavoie-Tremblay et al. (2008)	Canada	309 RNs, mean age 22.6 years (range from 20 to 25 years).	12.6% of RNs intended to leave the nursing profession.
Scott et al. (2008)	United States	329 new graduate nurses, mean age 29 years.	6% of the new graduates intended to leave within 3 years.
Chang et al. (2008)	Taiwan	177 nurses, mean age 29.88.	Median for occupational turnover intention was 3.65 (SD 1.50, range 1–7).
Enberg et al. (2007)	Sweden	840 graduate nurses (80%), occupational therapists (11%) and physiotherapists (9%), mean age 32 years (range 23–55 years).	One fifth of the new graduates had thoughts of leaving the profession 3 years after graduation.

4.4 Proportion of RNs (all ages) intending to leave the profession

The operationalization of RNs' intention to leave the profession has wide-ranging variation in the research concerning nurses' intention to leave the profession. Many different instruments, scales and items have been used to measure nurses' intention to leave the profession, and the intention to leave the profession varies considerably across the studies, from 3% (Eley et al. 2010, HRSA 2010) up to 25% (Salminen 2012) (Table 11).

Table 11. Percentage of nurses with the intention to leave the nursing profession in included studies (2008–2013).

Author	Country	Sample size	Consider leaving nursing %
Gurková et al. (2013)	Czech and Slovak Republics	1,055 RNs	Information was not available.
Heinen et al. (2013)	12 European countries	23,159 nurses	9% of nurses had an intention to leave the profession.
Mohamed & Mohamed (2013)	Egypt	83 nurses	Mean score for profession retention was 72.6 (SD 30.7, scale was not available).
Unruh & Zhang (2013)	United States	414 RNs	8.6% of RNs were strongly agreeing or agreeing with the item concerning thinking about leaving the nursing profession. Mean of intent to leave nursing composite was 1.9 (SD = 0.76, scale 1–5).
Cortese (2012)	Italy	512 nurses	14.6 % of nurses reported intention to leave the profession altogether.
Derycke et al. (2012)	Belgium	1531 healthcare workers	8% were having high intention to leave the profession.
Hinno et al. (2012)	Finland	334 RNs	10% of nurses had often thought about changing their profession during the year prior to the survey.
Salminen (2012)	Finland	343 RNs	25% of the nurses had frequently thought about leaving the profession.
Mariani (2012)	United States	173 RNs	Mean score for intention to stay the nursing profession was 18.51 (range 0-40 years)
Wang et al. (2012b)	China	560 nurses	The mean score for intent to stay was 3.56 (SD = 0.65).
Lavoie-Tremblay et al. (2011)	Canada	145 nurses	9.7% of nurses expressed intent to quit their profession.
Li et al. (2011)	Seven European countries	6,469 RNs	8.24% expressed intention to leave the profession in the follow-up examination.
De Milt et al. (2011)	United States	254 nurse practitioners	5.5% (n = 14) had intention to leave the profession.
Zeytinoglu et al. (2011)	Canada	1396 nurses	16% of the nurses indicated an intention to leave the nursing profession
Derycke et al. (2010)	Belgium	1,531 nurses	20.5% had strong intention to leave the profession

Author	Country	Sample size	Consider leaving nursing %
Estryn-Behar et al. (2010)	Ten European countries	23,517 nurses/1,526 nurses	26.4-7.9% of nurses were having intention to leave the profession.
Jourdain & Chenevert (2010)	Canada	1,636 nurses	Median for the intent to leave the profession was 2.04 (scale 1–5).
HRSA (2010)	United States	466,564 RNs	3% of RNs had intention to leave the profession.
Eley et al. (2010)	Australia	272 nursing students/259 RNs and enrolled nurses	2.9% of nurses reported having 1–2 years anticipated future time in nursing.
Fitzpatrick et al. (2010)	United States	6,589 nurses	7% critical care nurses intended to leave profession.
Kuokkanen et al. (2010)	Finland	551 RN	34% of RNs had considered changing their career.
Li et al. (2010)	China	1,521 RNs	16.26% had intention to leave nursing.
Simon et al. (2010)	Germany	2,119 nurses	18% considered leaving the profession.
Van Bogaerd et al. (2010)	Belgium	546 nurses	9.2% of staff nurses had intention to leave nursing.
van der Heijden et al. (2010)	Eight European countries	17,524 RNs	Mean for intention to leave the profession varied from 1.56 (SD 0.94, scale 1–5) to 1.87 (SD 1.17, scale 1–5) among eight countries.
El-Jardali et al. (2009)	Lebanon	1,793 RNs	29.4% of RNs with intent to leave the hospital were also planning to leave the profession.
Laine et al. (2009)	Ten European countries	39,893 nurses	15% were thinking of giving up nursing every month or more often.
van der Heijden et al. (2009)	The Netherlands	1,187 RNs	Mean for occupational turnover intention was 1.51 (SD 0.68, scale 1–5)
Chang et al. (2008)	Taiwan	177 nurses	Median for occupational turnover intention was 3.65 (SD 1.50, scale 1–7).
Estryn-Behar et al. (2008)	Ten European countries	13,537 nurses	Not reported.
Hasselhorn et al. (2008)	Eight European countries	23,523 RNs	13.9% of RNs reported intent to leave the nursing profession frequently.
Kankaanranta & Rissanen (2008)	Finland	2,866 RNs	5.3% of RNs had plans to change to a job outside the health-care sector in the next 5 years.
Widerszal-Bazyl et al. (2008)	Six European countries	16,052 nurses	Median for the intent to leave the nursing was 1.8 (scale 1–5).

Moreover, nurses' intention to leave their profession has been shown to vary between different countries. According to an RN4CAST study ($n = 33,659$ nurses/Europe; 27,509 nurses/United States), the proportion of nurses intending to leave the profession ranged from 5% (in the Netherlands) to 17% (in Germany) (Heinen et al., 2013). In the NEXT study, the strongest intention to leave the profession was measured from RNs in Italy

(20%) and the lowest (7.5%) in the Netherlands (Hasselhorn et al. 2008). In the United States, the reported intention to leave the profession has been lower than in Europe; it has been reported that the percentage of RNs intending to leave nursing within 3 years is approximately 3% (U.S. Department of Health and Human Services [HRSA], 2010).

4.5 Variables associated with young RNs and graduate RNs intention to leave the profession

Little is known about the variables associated with young RNs' intention to leave the profession. For example Clendon and Walker (2012) investigated, in their mixed-method study, young nurses' (aged less than 30 years) experiences in their early career. Lavoie-Tremblay et al. (2008) conducted a cross-sectional survey study with newly-registered nurses (mean age 22.6) in Canada. In Scott et al.'s (2008) study, the transition of new graduate nurses into working life (mean age 29) was investigated. In Laschinger's (2012) study, the turnover intention of newly graduated nurses (mean age 28) was investigated. In Table 12, the variables associated with young RNs' intention to leave the profession are presented.

Table 12. Variables associated with young RNs and graduate RNs intention to leave the profession.

Variable	Author(s)
Burnout	Rudman & Gustavsson 2013, Laschinger 2012, DiMattio et al. 2010
Burnout during education	Rudman & Gustavsson 2012
Low work engagement	Laschinger 2012
Dissatisfaction with the initial orientation	Laschinger 2012
The emotional challenge of nursing	Clendon & Walker 2012
Being younger	Rudman et al. 2010
Challenges of nursing	Lavoie-Tremblay et al. 2008
Effort/reward imbalance	Lavoie-Tremblay et al. 2008
Elevated job strain	Lavoie-Tremblay et al. 2008
High psychological demands	Lavoie-Tremblay et al. 2008
Career dissatisfaction	Scott et al. 2008

4.6 Variables associated with registered nurses' (of all ages) intention to leave the profession

According to the updated literature review, RNs' intention to leave the profession continues to be driven by a number of variables, including individual related, employment related, practice environment related and nursing outcomes related variables.

There are common *individual related variables* among RNs with a stronger intention to leave the profession (Table 13). Being younger (Estryn-Behar et al. 2008, Widerszal-Bazyl et al. 2008, Simon et al. 2010, Tsai et al. 2010, van der Heijden et al. 2010, Cortese 2012, Salminen 2012, Wang et al. 2012b, Gurková et al. 2013, Mohamed & Mohamed 2013) has been associated with a stronger intention to leave the profession in several studies. However, conflicting findings also exist. According to the RN4CAST study, older nurses also have a higher intention to leave the profession (Heinen et al. 2013). Male gender (Estryn-Behar 2008, Heinen et al. 2013) as well as poor health (Jourdain & Chenevert 2010, Unruh & Zhang 2013) are among the variables that have received support from more than one study. Other individual-related variables associated with an intention to leave the profession include having fewer children (Widerszal-Bazyl et al. 2008), a higher level of education (Widerszal-Bazyl et al. 2008), being a specialist nurse (Estryn-Behar 2008), low work ability (Salminen 2012) and concerns about being unable to work (Laine et al. 2009).

Table 13. Individual-related variables in relation to intention to leave the profession.

Individual-related variables	Author(s)
Being younger	Estryn-Behar et al. 2008, Widerszal-Bazyl et al. 2008, Simon et al. 2010, Tsai et al. 2010, van der Heijden et al. 2010, Cortese 2012, Salminen 2012, Wang et al. 2012b, Gurková et al. 2013, Mohamed & Mohamed 2013
Being older	Heinen et al. 2013
Male gender	Estryn-Behar 2008, Heinen et al. 2013
Poor health	Jourdain & Chenevert 2010, Unruh & Zhang 2013
Fewer children	Widerszal-Bazyl et al. 2008
Higher level of education	Widerszal-Bazyl et al. 2008
Being a specialist nurse	Estryn-Behar 2008
Low work ability	Salminen 2012
Concern about being unable to work	Laine et al. 2009
A substantial change in work ability	Derycke et al. 2012

Employment-related variables (Table 14) have also been associated with a higher intention to leave the profession; for example, shift work (Eley et al. 2010, Unruh & Zhang 2013) and working part-time (Cortese 2012, Heinen et al. 2013). Other variables include having a temporary employment contract (Widerszal-Bazyl et al. 2008) and skills in balance with or above the present work's demands (Salminen 2012). Some conflicting findings also exist. In a study by Unruh and Zhang (2013), a longer tenure in nursing was associated with a stronger leaving intention. However, in the study by Gurková et al. (2013), nurses with a shorter length of practise (less than 5 years) had a higher intention to leave the profession.

Table 14. Employment-related variables in relation to intention to leave the profession.

Employment related variables	Author(s)
Working in shift work	Eley et al. 2010, Unruh & Zhang 2013
Working part-time	Cortese et al. 2012, Heinen et al. 2013
Having a temporary employment contract	Widerszal-Bazyl et al. 2008
Having a low position	Wang et al. 2012b
Skills in balance with or above present work demands	Salminen 2012
Longer tenure in nursing	Unruh & Zhang 2013
Shorter length of practise (less than 5 years)	Gurková et al. 2013

Many different variables that can be defined as *nurse practice environment related variables* have been associated with an intention to leave the profession (Table 15). Difficult working conditions (Lavoie-Tremblay et al. 2008), a demanding job (Widerszal-Bazyl et al. 2008, Unruh & Zhang 2013), monotonous work (Kankaanranta & Rissanen 2008) and excessive duties (Kankaanranta & Rissanen 2008) have all been associated with such an intention.

Table 15. Nurse practice environment related variables in relation to intention to leave the profession.

Nurse practice environment related variables	Author(s)
Demanding job	Widerszal-Bazyl et al. 2008, Unruh & Zhang 2013
Monotonous work	Kankaanranta & Rissanen 2008
Excessive duties	Kankaanranta & Rissanen 2008
High emotional demands	Li et al. 2010
Ethical problems in work	Kuokkanen et al. 2010
Difficult working conditions	Lavoie-Tremblay et al. 2008
Violence from patients/relatives	Estry-Behar 2008
Low quality of teamwork	Estry-Behar 2008
Low predictability	Li et al. 2010
Perceived employment opportunities outside nursing	Widerszal-Bazyl et al. 2008
Effort-reward imbalance	Derycke et al. 2010
Inadequate staffing	Hinno et al. 2012
Low participation in hospital affairs	Heinen et al. 2013
Low assurance for nursing competence	Hinno et al. 2012
Low possibilities for specialization	Kankaanranta & Rissanen 2008
Low support for professional development	Hinno et al. 2012
Low possibilities for development	Li et al. 2010
Low level of social support from one's direct superior and from close colleagues	van der Heijden et al. 2010
Perceptions of job difficulties	Unruh & Zhang 2013

Nurse outcome related variables have also been associated with RNs' intention to leave the profession (Table 16). Burnout is the associated variable that has received the most support in the empirical literature (Jourdain & Chenevert 2010, Simon et al. 2010, Laschinger 2012, Heinen et al. 2013, Rudman & Gustavsson 2013). Moreover, burnout during nursing education (Rudman & Gustavsson 2012), job strain (Hasselhorn et al. 2008), and emotional exhaustion (Jourdain and Chenevert 2010) have all been related to a stronger intention to leave the profession. According to the RN4CAST -study, burnout was associated with a higher intention to leave the profession across ten European countries (Heinen et al. 2013).

Many different forms of low commitment have been associated with an intention to leave the profession. Low commitment to the workplace (Li et al. 2010), low organizational commitment (Salminen 2012), low professional commitment (Jourdain and Chenevert 2010), low occupational commitment (Wang et al. 2012b), low affective occupational commitment (Chang et al. 2007) have all been associated with the intention to leave. Low job satisfaction has also received empirical support in relation to the intention to leave (Kankaanranta & Rissanen 2008, Li et al. 2010, van der Heijden et al. 2010, Salminen 2012, Wang et al. 2012b, Gurková et al. 2013), as well as dissatisfaction with pay/wages (Cortese 2012, Kankaanranta & Rissanen 2008).

Table 16. Nurse outcome related variables in relation to intention to leave the profession.

Nurse outcome related variables	Author(s)
Low commitment to the workplace, low organizational commitment, low professional commitment, low occupational commitment, low affective occupational commitment	Li et al. 2010, Salminen 2012, Jourdain and Chenevert 2010, Wang et al. 2012b, Chang et al. 2007
Burnout, emotional exhaustion	DiMattio et al. 2010, Jourdain et al. 2010, Jourdain & Chenevert 2010, Simon et al. 2010, Laschinger 2012, Heinen et al. 2013
Job dissatisfaction	Kankaanranta & Rissanen 2008, Li et al. 2010, van der Heijden et al. 2010, Salminen 2012, Wang et al. 2012b, Gurková et al. 2013
Career dissatisfaction	Scott et al. 2008
Dissatisfaction with pay/wage	Kankaanranta & Rissanen 2008, Cortese 2012
Low work engagement	Laschinger 2012
Reward frustration at work	Li et al. 2011
Dissatisfaction with the leadership/management	Heinen et al. 2013, Hinno et al. 2012
Dissatisfaction for professional status	Cortese 2012
Dissatisfaction with nurse-physician relationship	Heinen et al. 2013
High qualitative job insecurity	Laine et al. 2009
Dissatisfaction with the initial orientation	Laschinger 2012
Disillusionment with nursing	Eley et al. 2010
Low meaning of work	Li et al. 2010
Low level of empowerment	Fitzpatrick et al. 2010
Low job control	Unruh & Zhang 2013
Low control of work	Mohamed & Mohamed 2013
Dissatisfaction with work organizational policies	Cortese et al. 2012

4.7 Summary of the theoretical basis of the study

In conclusion, during the past four decades a considerable amount of research and a number of theoretical models have been implemented in order to understand and explain why RNs have the intention to leave their organization. Less research has been implemented in order to understand why RNs have the intention to leave the profession and theoretical models related to this phenomenon are rare. Although the current research suggests that young RNs have a stronger intention to leave the profession than older RNs, only a few studies have been implemented in order to understand why this may be so. Moreover, the voices of young RNs who have an intention to leave the profession have rarely been studied from their own perspective.

Previously, RNs' intention to leave their profession has mainly been studied using quantitative studies and with survey questionnaires – qualitative research on this topic is very limited. RNs have reported a greater intention to leave their organization than the profession. The rates of intention to leave the profession vary considerably among the earlier studies, reflecting the wide-ranging variation of the items used to measure leaving intention. RNs' intention to leave the profession has been found to predict their actual decision to do so.

In earlier research, many different variables have been associated with RNs' intention to leave the profession. A clear picture of this phenomenon has not emerged. The current knowledge indicates that individual, employment, practice-environment and nurse-outcome related variables have all been associated with the intention to leave the profession. However, some of these variables have only surfaced in a single study, and therefore do not constitute a cumulative knowledge base.

In summary, it can be concluded that there is a clear lack of empirical evidence for why young RNs in particular have the intention to leave their profession. According to the RN4CAST authors, it might be that a valid European model for nurses' intention to leave the profession cannot be presented; therefore, national-level investigations are important alongside multinational studies (Heinen et al. 2013). Young RNs' professional turnover intent should thus also be investigated in the Finnish health-care context.

4.7.1 What is already known?

- There is a dearth of research explicitly investigating young RNs' intention to leave the profession.
- Younger RNs have reported a higher intention to leave the profession than older RNs. However, conflicting findings also exist.
- Young RNs' intention to leave the profession has mainly been studied using descriptive studies, completed with survey questionnaires. Only one previous in-

depth research was identified where young RNs' intention to leave the profession was investigated (Clendon & Walker 2012).

- Current research indicates that burnout, low work engagement, dissatisfaction with the initial orientation, the emotional challenge of nursing, challenges of nursing, an effort/reward imbalance, elevated job strain, high psychological demands and career dissatisfaction are likely to affect young RNs' intention to leave their profession.
- There is no clear definition of the term 'intent to leave the profession' used in research concerning young RNs' professional turnover intent, and therefore a variety of items have been used to measure leaving intention.
- Based on the current knowledge, it is not clear why some young RNs make the final decision to leave the profession and why some do not, even though both express a strong leaving intention in survey questionnaires.

4.7.2 What are the gaps in the existing knowledge?

- Because young RNs have reported fairly high levels of intention to leave the profession, more research is needed in order to better understand why this generational group has this intention early in their careers.
- The amount of research investigating RNs' turnover intent from a generational perspective has been growing over the past few years; however, more research is still needed.
- More longitudinal studies should be conducted, including in-depth methods, where young RNs are actually followed through the transition processes from having an intention to leave the profession to making a final decision to do so.
- There is a need to investigate young RNs' intention to leave the profession by using qualitative methods and to produce studies with more in-depth understanding because professional turnover intent appears to be a highly complex psychological process.
- Research should include both destinations – the intention to leave the organization as well as intention to leave the profession – in order to gain a richer understanding in relation to young RNs' turnover intention.

5. THE PURPOSE OF THE STUDY

The purpose of this explorative descriptive study was to examine and expand understanding concerning the intention of young Finnish registered nurses (RNs) to leave the profession, specifically when that intention had begun before the age of 30. Furthermore, the aim of this exploratory study was to obtain a greater understanding of the perceptions and experiences of having an intention to leave the profession early in a nursing career. The overall goal of the study was to develop a conceptual model related to young RNs' intention to leave the profession. Recommendations for policymakers, nurse educators, nurse managers and research for the retention of young RNs in the nursing workforce are also presented.

More specifically, the research tasks of this study were as follows:

- 1) To describe and critique the published empirical research concerning nurses' intention to leave the profession (Paper I, Summary).
- 2) To discover what proportion of young RNs intend to leave the profession in Finland and what the reasons for this are (Paper II).
- 3) To explore in-depth and to gain a better understanding of why young RNs have the intention to leave the profession and how they have experienced this intention (Papers III, IV).

6. RESEARCH METHODOLOGIES AND DATA COLLECTION

6.1 Methodological approaches

This is a descriptive, sequential mixed-methods study. Different research designs, data collection methods and data analysis methodologies have been used in order to gain a better understanding of the variables and individual consideration processes in relation to young RNs' intention to leave the profession. According to Connelly (2009, p. 31) "the goal of mixed-methods research is to draw on the strengths and minimize the weaknesses of both types of research." By using a mixed-method approach, it was possible to quantify and explore young RNs' experiences in the same study (Hall & Howard 2008, Ihantola & Kihn 2011).

Mixed-methods research has been defined as one of the three major research paradigms alongside quantitative and qualitative research (Johnson et al. 2007). Quantitative and qualitative research traditions differ in relation to their epistemological, theoretical and methodological underpinnings (Polit & Beck 2004, Ihantola & Kihn 2011, Yilmaz 2013). Quantitative research refers to a research: "that explains phenomena according to numerical data which are analysed by means of mathematically based methods, especially statistics" (Yilmaz 2013, p. 311).

In social sciences, when quantitative methods are perceived as too restrictive, qualitative methods can be added to explore the complexity of the issues (Hall & Howard 2008). Qualitative methods are useful for the study of human experiences, thoughts, expectations and attitudes (Malterud 2001). Qualitative research has been defined as: "a form of social inquiry that tends to adopt a flexible and data-driven research design, to use relatively unstructured data, to emphasize the essential role of subjectivity in the research process, to study a small number of naturally occurring cases in detail, and to use verbal rather than statistical forms of analysis" (Hammersley 2013, p. 12).

6.2 Phases of the study

The research was carried out in three successive phases between 2005 and 2013 with young RNs in Finland (Figure 1).

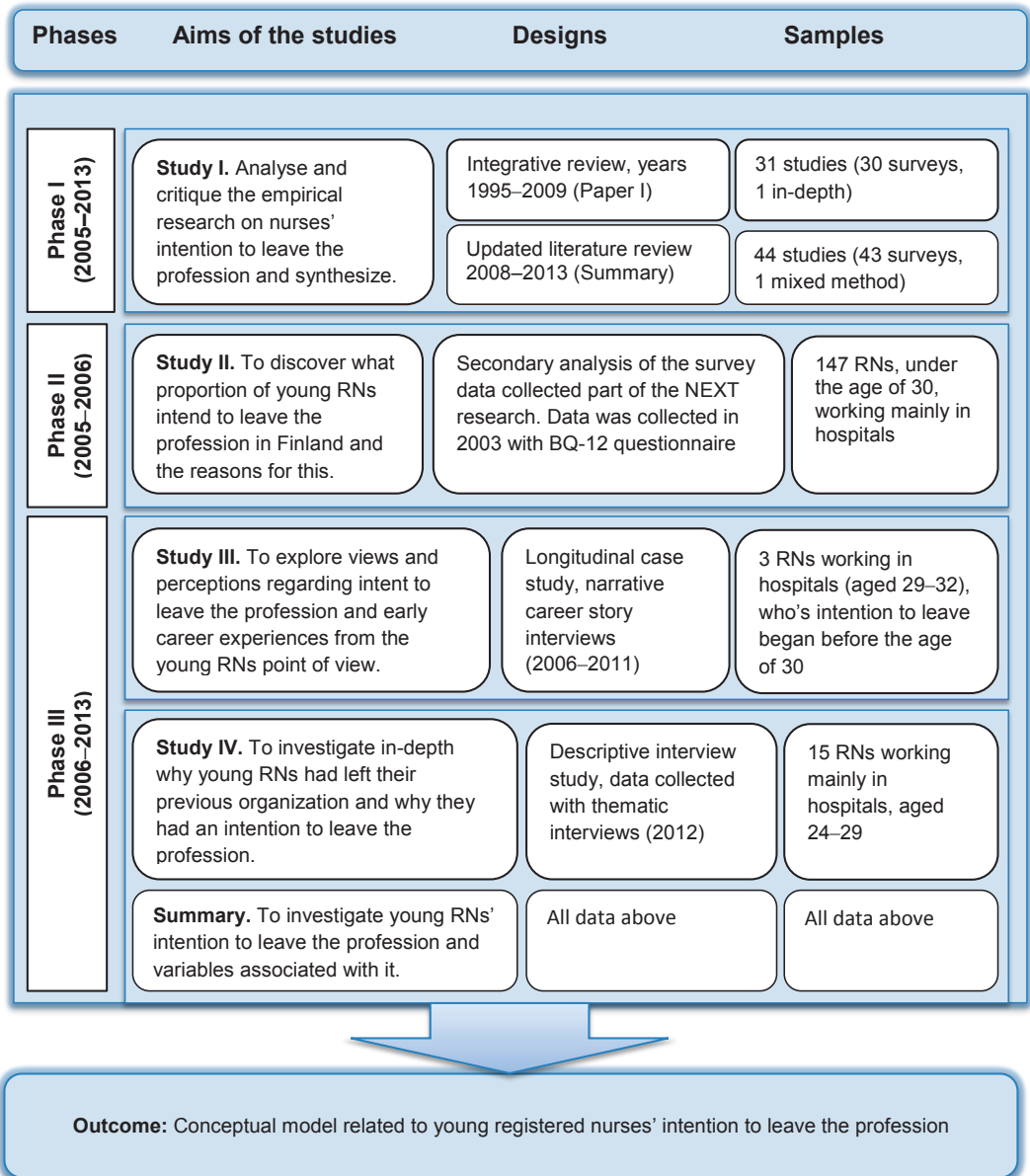


Figure 1. Phases of the study.

6.3 Study designs, data collection and samples of the part-studies

Phase I

The literature review for this dissertation was comprised of two sequential parts. Firstly, the review of the literature concerning nurses' intention to leave the profession was conducted, covering the period from 1990 to July 2009 (Paper I, Appendix 1). Secondly, the review was updated to cover the period 2009–2013. Electronic databases such as CINAHL, MEDLINE® and Social Sciences Citation Index were searched.

In Phase I, an integrative literature review was undertaken to examine the current state of knowledge about nurses' intention to leave the nursing profession. At the time when the literature search for this review was conducted, literature focusing particularly on young RNs' intention to leave the profession was almost non-existent. Therefore, the literature review was extended to cover nurses of all ages in order to obtain a full understanding of the phenomenon of interest.

An integrative literature review approach by Cooper (1989) was chosen because it allows for the inclusion of studies with diverse methodologies in the same review. Electronic databases were searched to identify research reports about nurses' intention to leave their profession. The data were collected by conducting a thorough search of the following electronic databases: MEDLINE Ovid (1995–July 2009), CINAHL (1995–July 2009) and PsycINFO (1995–July 2009). The search terms were as follows: Nurs* AND (Personnel turnover OR Career Mobility). The reference lists of all the studies identified and earlier reviews focusing on nurse turnover were also scanned for additional articles that were not identified through the computer search. The inclusion criteria of the studies accepted for the review were that they addressed nurses' intention to leave the profession. Moreover, research on nurses' organizational turnover was excluded. The review was limited to peer-reviewed studies published in English and Finnish.

The original search located 1,430 hits in MEDLINE, 612 in CINAHL and 3 in PsycINFO. After duplicates were removed, the titles and abstracts of 1,015 papers were retrieved and read. After an examination of the full texts of the 230 research reports, the list of included and excluded researches was gathered. A total of 31 papers were selected for the review published during the years 1995–2009. The results of the primary studies were summarized but not statistically combined due to the combination of diverse methodologies.

The studies were mainly quantitative ($n = 30$); only one study was qualitative in design (Gould & Fontela 2006). In three of the studies (Collins et al. 2000, Cowin 2002, Flinkman et al. 2008) both quantitative structured questions and qualitative open-ended questions were reported in the articles. Most of the studies employed structured, self-administered questionnaires ($n = 20$). These studies were conducted in the United States ($n = 8$), the United Kingdom ($n = 7$), Finland ($n = 4$), Australia ($n = 4$) and Taiwan ($n = 2$) as well as one each from Belgium, Israel, Italy and Canada. Three of the studies (Estryn-Behar et al. 2007, Hasselhorn et al. 2003/2005a, Simon et al. 2004) implemented

longitudinal NEXT (Nurses' Early Exit) study data, where data was collected from ten European countries (Belgium, Finland, France, Germany, the United Kingdom, Italy, the Netherlands, Poland, Sweden and Slovakia).

Phase II

In the second phase of the study, a secondary analysis of the data collected by the NEXT study's researchers (Hasselhorn et al. 2003a) was conducted. In a secondary analysis, data gathered in previous studies or collected for other purposes is used to answer new research questions (Connelly 2010). According to Powers & Knapp (1995, p. 157): "the secondary investigator can examine particular subsamples of data previously collected for other purposes."

The data in the NEXT study was gathered from ten European countries at baseline (Belgium, Germany, Finland, France, Italy, the Netherlands, Norway, Poland, Slovakia and the United Kingdom) and in eight countries at follow-up. The NEXT study was financed by the European Commission within the 5th framework programme. (Hasselhorn et al. 2008.) The baseline questionnaire was carried out in each of the ten countries between October 2002 and June 2003. The follow-up investigation was conducted approximately one year later. (Hasselhorn et al. 2003a, Estryl-Behar et al. 2008.) The NEXT study design is described in more detail in the research report entitled *'Working Conditions and Intent to Leave the Profession among Nursing Staff in Europe'* (Hasselhorn et al. 2003a) and in Estryl-Behar et al. (2008), Hasselhorn et al. (2008) Laine et al. (2009) and in Simon et al. (2010).

Four different, structured postal questionnaires were implemented during the longitudinal NEXT study (Basic Questionnaire BQ, Leavers Questionnaire LQ, 12-month follow-up questionnaire BQ-12, 12-month Leavers Questionnaire LQ-12). A fifth questionnaire, the Organization Analysis (OA) questionnaire, was carried out for every participating institution in the ten participating countries. (Hasselhorn et al. 2003c.)

The data analysed in Phase II were collected in the autumn of 2003 from six hospitals districts in Finland as a part of NEXT study implementation. The data collection in Finland is described in detail in Laine's (2005) doctoral dissertation. The data was collected with postal questionnaires, which were sent to the hospitals, nursing homes, home care, and outpatient care institutions that had agreed to participate. The total number of participating institutions was 65; both municipality and private organizations were included. A total of 3,970 nurses responded to the baseline survey questionnaire in Finland, with a total response rate of 77%. (Laine 2005, Laine 2009.)

The data analysed for the Phase II was collected with the BQ-12 questionnaire. The BQ-12 questionnaire contained approximately 220 questions concerning demographic variables, central aspects of the nurses' work, working environment, individual recourses as well as future occupational plans. There were a total of 22 scales in the BQ-12 questionnaire (see Kümmerling et al. 2003). The BQ-12 questionnaire is described in detail in Paper II, in Hasselhorn et al. (2003c) and in Kümmerling et al. (2003).

A total of 2,941 RNs responded to the BQ-12 questionnaire in Finland. The data collected with this questionnaire was chosen because it also contained qualitative open-ended responses regarding the reasons behind the RNs wanting to leave their profession. In order to answer the research question concerning young RNs' intention to leave nursing, a sub-sample of responses in Finland was analysed, in which all RNs aged less than 30 were included (n = 147).

Nine of these scales – general health, personal burnout, emotional demands, quantitative demands, possibilities for development, work–family conflict, satisfaction with salary, job satisfaction and professional commitment – were chosen to be presented in the study, based on the literature review and measured factors associated with nurses' intentions to leave their profession in several other nursing studies.

The intention to leave the profession was measured with two questions in the BQ-12 questionnaire: “How often during the course of the past year have you thought about giving up nursing completely?” and “How often during the course of the past year have you thought about giving up nursing completely and starting a different kind of job?” The five answer categories were “never”, “a few times”, “a few times a month”, “a few times a week” and “every day”. (Hasselhorn et al 2003b.)

Due to the small frequencies, the intention to leave the profession was split into two categories: (1) those who thought of leaving often (a few times a month or more often), and (2) those who considered leaving a few times a year or not at all. An open-ended question about the reasons behind the intention to leave the profession was: “If you think of leaving nursing profession, what are the three main reasons that have made you considering it?”

Sample in this study (Paper II) included 137 women (93%) and 9 men (6%) (one missing item). The age of the respondents varied from 24 to 29. Mean age of the respondents was 26.8 years (SD 1.45). All respondents worked as RNs, and none of them had achieved a managerial position. Respondents had 1–9 years of work experience in the nursing field, with a mean of 3.6 years (SD 1.4). Half of the respondents (50%) had worked with their current employer for 3–5 years and 42% of the respondents had 1–2 years of work experience with their current employer. The majority of the respondents (91%) worked in hospitals or in hospital-type wards (municipality health centre wards), 3% in elderly care homes, and 6% in primary outpatient care. Most of the nurses worked shift work including nights (76%), or in shift work without nights (10%).

Phase III

After the integrative review and the quantitative survey study, it became obvious that there was a need for more in-depth understanding of the phenomenon of interest, and therefore two successive qualitative studies were designed.

Firstly, a qualitative case study was used to provide an in-depth understanding of young RNs' intention to leave the profession early in their career. Moreover, the aim of this study was to describe how young RNs had experienced and how they explain this leaving intention. In this case study, narrative data and narrative analysis methods were used. The narrative method was considered to be suitable for this study because "it emphasizes the narrative nature of life in the creation of meaning" (Wertz et al. 2011, p. 384). Moreover, according to Josselson (2011, p. 225): "narrative inquiry works with detailed stories drawn in some way from participants, stories that reveal how people view and understand their lives."

The sample selection was purposeful as "key informants" or "critical cases" that were knowledgeable about the phenomenon of interest were searched (Flyvbjerg 2006). In the year 2006, young RNs were invited to write narrative essays about their nursing careers, and why they had an intention to leave the profession that had started before the age of 30. Finnish researchers Roos (1987), Löyttyniemi (2004), May (2008) and Eronen (2012) have accordingly collected written stories as a part of their in-depth investigations.

Invitations to write these narrative essay stories were published in the *Magazine of the Union of Health and Social Care Professionals* (Tehy) and in an open discussion forum for nurses via the Internet (www.hoitajat.net). The preliminary aim of this study was to analyse these essay writings with narrative methods. These invitations did not, however, motivate young RNs to write their career stories. Eronen (2012) described a similar reaction when requesting Finnish women to write narrative stories about their childhood experiences in children's homes: "my request was met with a baffling lack of response" (p. 3).

Only four, fairly short essays were received by post and by email. Moreover, these essays were not rich enough in content for the narrative analysis to be considered reasonable. However, in these advertisements, young RNs were also invited to include their contact details if they wanted to participate in an interview concerning their intention to leave the nursing profession. Instead of analysing the short written essays with narrative methods, it was decided to realize in-depth narrative career-story interviews with young RNs in order to obtain a deeper understanding of the phenomenon of interest. Three young RNs were willing to participate in the in-depth narrative career-story interviews. All of these young RNs' had work experience in nursing, had an intention to leave the nursing profession that had started before the age of 30, and had a willingness to articulate, and reflect upon, their experiences in their nursing career.

Three interviewees can be considered as a sufficient number because in qualitative case studies sample sizes are non-representative (Sharp 1998) and narrative interview data usually accumulate with a large quantity of rich data (Riessman 2002). According to Hammersley (2013, p. 13): "Qualitative inquiry often involves investigation of a small number of naturally occurring cases, perhaps just one". Therefore, the decision was made not to recruit more young RNs for this case study.

The three young RNs who participated were interviewed twice. The aim was to follow the intention to leave a profession as a longitudinal process. The first interviews were conducted between 12/2006 and 5/2007, when the young RNs were experiencing an intention to leave the profession. The second interview took place four years later, from 1/2011–3/2011, when all of these young RNs had made the transition to a new occupation.

In the beginning of the first interview the interviewees were asked to draw — on A3-sized paper — their pathway as a nurse, and put into this drawing the significant events in, and experiences of, their nursing career. After that, an open question was posed; “I would like you to tell me, freely and with your own words, your story as a nurse. You can start your story at any point of your life that you have felt to be significant for you becoming a nurse. You can end your story at any point in your life that you want.” In the beginning of the second interview, you RNs’ were asked to continue their story as a nurse.

The participants in the qualitative case study were 29–32 years old during the course of the first interview. They had entered a nursing career during the years 1996–1999. They all had experience of as working as an RN in different health-care organizations. The RNs’ areas of work experience covered psychiatric nursing, geriatrics, emergency departments and operating theatres. One of the RNs had a permanent work contract and the other two had fixed-term contracts. Two of the RNs had children at the time of the second interview. The RNs’ were living in different parts of Finland, one in a large city and the remaining two in smaller cities.

Secondly, thematic in-depth interviews were conducted with young RNs under the age of 30. RNs across Finland were recruited with a letter that was sent to 86 RNs who had resigned from their organization during the previous year in one hospital district and in one public health-care centre. RNs were also recruited through an advertisement placed in Finnish Nurses Association newsletter as well as in a nurses’ discussion forum (www.nurses.net). Data were collected through semi-structured, open-ended, in-depth interviews during June and November 2012. The most important questions regarding this study included:

- “Why did you choose the nursing profession?”
- “Why did you leave your previous organization?”
- “Why do you have an intention to leave the profession?”
- “What are you satisfied and dissatisfied with about nursing?”

A total of 15 female RNs, aged between 24 and 29 years, who graduated from polytechnics between 2008 and 2011, participated in the thematic interviews. The researcher conducted all the interviews. The dates, times and places of the interviews were selected by the participants. Interviews were conducted in a private setting outside the workplace, or by telephone or Skype. The interview length ranged from 17 to 61 minutes.

Most young RNs’ worked mainly as RNs ($n = 13$); however, one of the participants worked as a paramedic at the time of the interview, and one also had work experience

as a midwife (all had nursing degrees and RN registration). Four of the RNs' were studying at the university: two in nursing science and two in a non-nursing discipline. One of the RNs' was studying for a second degree in a polytechnic. Young RNs' working experience covered acute and non-acute settings, including intensive care, medical or surgical, operating theatres, mental health, geriatrics, midwifery, and community health. Four of the participants had permanent working contracts, six had temporary contracts, and two worked casual shifts. Two participants were not working in a nursing position, and one was on parental leave. Three of the participants had children. Three nurses had nursing experience from abroad (Sweden, Norway and Australia).

6.4 Data analysis

The data was analysed using quantitative and qualitative methods. Detailed descriptions of the data analysis are presented in Papers I–IV.

Phase I

In the integrative literature review (Paper I), Cooper's (1989) five-stage method provided a framework for data collection, analysis and synthesis. The quality of the studies was assessed by providing a methodological description of the studies reviewed. In the article, information was provided on the following nine methodological details, in table form, because there was no gold standard for evaluating and interpreting quality in the available research reviews (Whittemore & Knalf 2005). The following methodological descriptions were provided from each of the included studies: (1) research question presented, (2) power analysis included, (3) recruitment reported, (4) response rate in per cent, (5) demographic of the sample presented, (6) sample size, (7) development of the instrument(s) described, (8) reliability data of the instruments reported, (9) validity of the instrument established.

Phase II

In the phase II (Paper II), all the analyses were conducted using SPSS version 12.0 for Windows (SPSS Inc., Chicago, IL, USA). Percentages and frequencies were used to describe the categorical variables. Both medians and interquartile ranges (IQR) were used to describe the continuous variables. The internal consistency of the subscales was evaluated by using Cronbach's α (alpha) test. One missing item per subject was accepted for the scale calculation.

Due to the small frequencies, the intention to leave the profession was divided into two categories: (1) those who often thought of leaving (a few times a month or more often), and (2) those who considered leaving a few times a year or not at all. The Mann-Whitney U-test (MWU) was used to test the differences in scales between the dichotomized intentions to leave the profession. Alpha levels of $p < 0.05$ were judged to be statistically significant.

Group comparisons of the question: “How often during the course of the last 12 months have you thought about giving up nursing and starting different kind of job” were tested with the chi-square test when applicable; otherwise, they were tested with the Fisher exact test. Due to the small sample size ($n = 147$) and skewed distributions, it was not possible to use more sophisticated statistical models. Most of the continuous variables were non-normally distributed, thus non-parametric tests were used.

Many of the young RNs responded minimally to the open-ended question, by giving short answers. Therefore, responses to this question were interpreted using quasi-statistics (Polit & Beck 2004). Firstly, the data were entered into a word processing program. Secondly, all the data were read through for familiarization purposes. Then, sentences and words that had the same meaning were coded, and placed into categories. Finally, similar categories were grouped into four main categories and were presented as a table outline (see Paper II, Table 5).

Phase III

In the qualitative case study (Paper III), the data consists of six career story narrative interviews from three young RNs. All of the interviews were recorded on a digital recorder. The recorded interview data were transcribed verbatim by the first author and were entered into the word processing program.

Career story interviews were analysed using a holistic-content thematic method, which was inspired by holistic-content methods developed by Lieblich et al. (1998). Firstly, separate events from the nurses’ careers were selected and organized into complete stories with a chronological order (Polkinghorne 1995). When rereading these stories, thematic patterns started to emerge between them. These themes were followed throughout the stories and compared, contrasted and interpreted in the context of the career histories overall. These emerging interpretations and themes were discussed, reviewed and refined with the co-authors. The results of the analysis were reported, in accordance with these themes, in Paper III.

Thematic interviews (Paper IV) were recorded with informed consent and were later transcribed verbatim for coding and analysis using the the Qualitative Data Analysis and Research Software Atlas.ti. Interview data was analysed with conventional content analysis, guided by methods described in the article by Hsieh and Shannon (2005). Codes and categories were inductively (Elo & Kyngäs 2007) derived from the data.

Eight steps of data analysis were performed (see Paper IV, Table 2). The data analysis was conducted simultaneously with the data collection; it was begun after the first interview, and continued throughout the data collection phase. The first author coded the transcribed text, and both authors discussed, reviewed and refined the emerging codes. The first author clustered these codes into categories and they were compared, contrasted and interpreted in the context of the overall transcriptions. These emerging categories, and themes derived thereafter, were also discussed, reviewed and refined with the second author.

6.5 Ethical considerations

The ethical aspect of any research project needs to be carefully managed (Hirvonen 2006, Fraklin et al. 2012). David and Sutton (2011, p. 53) concludes this need as follows; “research involving human subjects needs to be ethical in its selection (design), in its conduct and in the use/distribution of its findings”. Therefore, the performance of this dissertation study followed ‘The guidelines for the responsible conduct of research and for handling alleged violations of conduct (the RCR guidelines)’ introduced by The Finnish Advisory Board on Research Integrity (2012). The research ethics were also appraised in relation to the World Medical Association Declaration of Helsinki (7th edition, 2013) and the Finnish Medical Research Act (Laki lääketieteellisestä tutkimuksesta 794/2010).

The risks and benefits for the participants need to be considered in the planning stage of research (Polit & Beck 2004). The young RNs’ participation was voluntary in all phases in this study. There were no vulnerable subjects involved in the study; all were adults, and the youngest participant was 22 years old. Health-care professionals, when working in the institutions, can be considered as a less vulnerable group of participants than the patients (Fraklin et al. 2012). Participants did not receive any compensation for participating in the study. Paper and electronic copies of the data from all study phases are stored according to ethical guidelines (in safe storage and anonymously).

In the **first phase**, the integrative literature review was performed (Paper I), which was subsequently updated for this summary. Literature searches were conducted thoroughly with the guidance of an information specialist. The inclusion criteria were developed in order to ensure that existing researchers were treated accurately and fairly. The criteria were followed when the literature was searched, so that all possible located articles were treated on an equal basis.

During the **second phase**, a secondary analysis of the survey data was conducted. The survey data was collected as a part of the European Nurses’ Early Exit (NEXT) study. The ethical committee of the University of Wuppertal in Germany approved the overall NEXT study design (Hasselhorn et al. 2003). In Finland, the personnel management of the organizations involved gave the permission to carry out the study (Laine 2005). The Turku Regional Institute of Occupational Health and the NEXT study group gave permission for the use of the sub-samples of the Finnish data in the study. The article for this phase (Paper II) was written in cooperation with Marjukka Laine, researcher of The Turku Regional Institute of Occupational Health, and with principal researcher from the NEXT study, Hans-Martin Hasselhorn.

The confidentiality of the survey study was guaranteed in the covering letter and the RNs were informed that they were not obligated to answer any questions. Consent was assumed when the respondents returned a completed questionnaire by post. The data analysed contained no information through which the respondents could have been identified; moreover, the young RNs were not individually identifiable in any way in the survey study (Laine 2005).

In the **third phase**, two separate in-depth studies were conducted (Paper III, IV). Before the narrative career-story and thematic interviews, the RNs received both written and oral information about the study by email and by phone. They were informed that participation was voluntary and that they had the right to withdraw at any time. As the RNs participated voluntarily and in their leisure time, no additional ethical committee approval was needed. At the beginning of the interviews, the aims of the study were again explained to the RNs, as well as the voluntarily nature of the participation, that they had the right to withdraw at any stage and that the data collected would be treated with confidentiality. All participants signed a written, informed consent before the interviews, and then were provided with a copy of this informed consent agreement.

In the thematic interview study (Paper IV), invitation letters were sent to 86 young RNs who had resigned from their organization (one hospital district and one health-care centre) during the previous year. The permission to send these invitation letters to young RNs who had resigned from their organization was received from the management board of the hospital district (26.2.2012) and from the health-care centre (25.3.2012). The invitation letters were sent by an organization, so the researcher did not know the identity of those persons to whom the invitation letters were sent. The young RNs who were interested in the research then contacted the researcher by email or by phone. After this first voluntary contact, the place and time for the interview was arranged.

All the interviews were performed by the researcher. The main question related to confidentiality was the protection of the identity of the interviewees in the in-depth studies (Syrjälä et al. 2006). The sample sizes were small in these studies: in the qualitative case study (Paper III), only three young RNs were interviewed; in the thematic interviews, 15 young RNs (Paper IV) were interviewed. Also, the research topic was sensitive. In the interviews, confidential details of the RNs' personalities and their careers were revealed. Therefore, it was of the utmost importance that the participants' personal identification was protected (David & Sutton 2011). Therefore, fictitious pseudonyms were used in Paper III to protect the privacy of these young RNs. In paper IV, only the term 'RN' and the participants' ages were used when direct citations were provided.

The manuscript of the qualitative case study (Paper III) was sent to the participants by email prior to publication: they all agreed with the interpretations and confirmed that their personal identification was protected. All three participants gave written permission by email to the researcher for their stories to be published as they were presented in the manuscript. The following details from the qualitative case study were removed: places of residence, names of the health-care organization, names of family members and names of colleagues. Some minor details in these career stories, which were considered to be insignificant for the study, were changed in order to protect the participants' identities. For example, one of the RNs described in the interviews what kind of ward she had been previously working in; in the manuscript, it was only mentioned that she had worked in a ward, but it was not mentioned precisely what kind of ward.

7. RESULTS

The main findings are reported in three parts, according to the phases of the study. As a summary, a conceptual model concerning young RNs' intention to leave the profession is introduced. Only the main findings according to the research tasks are introduced, as more detailed results are presented in the original papers I-IV.

7.1 What proportion of young RNs have an intention to leave the profession?

According to the literature reviews (Paper I and Summary), an inverse relationship between age and intention to leave the profession has been demonstrated in many of the earlier studies (Kuokkanen et al. 2003, Barron & West 2005, Hasselhorn et al. 2005b, Rudman et al. 2010, Simon et al. 2010, Tsai et al. 2010, van der Heijden et al. 2010, Cortese et al. 2012, Salminen 2012). The proportion of young RNs with an intention to leave the profession had varied in these previous studies from 6% (Scott et al. 2008) up to 59% (Lee et al. 2013) (see Paper IV, Table 1).

In the survey questionnaire (Paper II), all 147 young RNs responded to the question regarding possible plans to give up nursing. During the course of the previous year, one in four (24%) of the RNs often had thoughts of giving up nursing completely (some times a month or more often). Moreover, 26% of RNs had often thought of giving up nursing and starting a different kind of job (some times a month or more often) (Table 17). For comparison, according to the entire sample in Finland collected with the BQ-12 questionnaire, 15% of all nurses (n = 2 941) were considering giving up nursing often (Laine 2005).

Table 17. Response distribution to the question: "How often during the course of the last 12 months have you thought about..." (n = 147)? (Modified from Paper II, Table 3, p. 735 in Flinkman et al. 2008).

	Giving up nursing completely %	Giving up nursing and starting different kind of job %	Taking a further qualification outside nursing %
Never	28	24	25
Some times a year	48	50	45
Some times a month or more often	24	26	31
All	100	100	100

During the past year, about a third (31%) of the RNs had often considered studying something else, outside of nursing. RNs considered leaving their organization more often (37%) than they considered giving up nursing completely (24%). The young RNs who often considered leaving their current organization were also more often considering leaving nursing (71% vs. 29%, $\chi^2 = 24,76$, $df = 1$, $p < 0.001$). However, almost a third (28%) of young RNs reported that they never considered giving up nursing completely.

7.2 What are the variables associated with a young RNs' intention to leave the profession?

According to the updated literature review (Summary), many different variables had previously been associated with young RNs' intention to leave the profession, including: burnout (Laschinger 2012), low work engagement (Laschinger 2012), dissatisfaction with the initial orientation (Laschinger 2012), the emotional challenge of nursing (Lavoie-Tremblay et al. 2008), challenges of nursing (Lavoie-Tremblay et al. 2008), effort/reward imbalance (Lavoie-Tremblay et al. 2008), elevated job strain (Lavoie-Tremblay et al. 2008), high psychological demands and career dissatisfaction (Scott et al. 2008).

Accordingly, in the survey study (Paper II), many different variables were associated with young RNs' intention to give up nursing and start a different kind of job. According to the survey responses of these 147 young RNs, the following variables were associated with a stronger intention to leave: (1) personal burnout (MWU, $P = < .001$), (2) poor opportunities for development (MWU, $P = 0.002$), (3) weak affective professional commitment (MWU, $P = < .001$), (4) low job satisfaction (MWU, $P = < .001$), (5) work–family conflicts (MWU, $P = 0.013$) and (6) high quantitative work demands (MWU, $P = 0.029$) (Paper II, Table 4).

Most of the young RNs (80%) reported that they felt tired once or twice a week or more often. RNs who felt themselves to be tired more often considered leaving nursing ($\chi^2 = 7,84$ $df = 3$, $P = 0.050$). Moreover, RNs who were dissatisfied with how their work schedule affected their well-being more often thought about leaving nursing (42% vs. 29%, $\chi^2 = 10,97$ $df = 2$, $P = 0.004$), as did those who had higher scores on the personal burnout scale.

The young RNs reported that their work was quantitatively demanding. The median score for the quantitative demands scale was 3.40 (IQR 3.04 to 3.90). Moreover, over half (60%) of the RNs indicated that they always, or at least often, have to work very quickly. Moreover, almost half (42%) of the young RNs agreed with the statement that their job produced a strain which makes it difficult for them to fulfil their family duties. The median score for the work–family conflict scale was 3.00 (IQR 2.28 to 3.61).

Generally, RNs were satisfied with their job; the median score for the job satisfaction scale was 2.75 (IQR 2.26 to 2.90). Over half (65%) of the RNs were satisfied or very satisfied with their job as a whole when everything was taken into consideration. Moreover, RNs reported high professional commitment; the median score for the scale was 4.00 (IQR 3.56 to 4.75). The majority of the RNs (74%) agreed with the statement that they really belonged to the nursing profession.

Three of the reported scales were not associated with young RNs' intention to give up nursing and start a different kind of job: (1) emotional demands (MWU, $P = 0.973$), (2) satisfaction with salary (MWU, $P = 0.059$) and (3) general health (MWU $Z = -419$, $P = 0.675$). RNs indicated in their responses that their work was emotionally demanding; the median score for the emotional demands scale was 3.50 (IQR 1.26 to 2.31). Moreover, these RNs also indicated dissatisfaction with their salary; the median score for satisfaction with salary was 1.67 (IQR 1.26 to 2.31). Almost all of the young RNs were dissatisfied with their salary (Table 18), and therefore it was not possible to find any differences related to satisfaction with their salary between those often considering giving up nursing and those who seldom/never considered doing so. However, even though these young RNs were dissatisfied with their salary, only a fifth (20%) of the RNs estimated their economic situation to be strained or very strained.

Table 18. Satisfaction with pay among young RNs.

Question	Response alternatives	%
Considering the pay of other comparable professions (n = 146).	Very dissatisfied	75
	Dissatisfied	16
	Neither satisfied or dissatisfied	5
	Satisfied	3
	Very satisfied	1
In relation to your need for income (n = 146).	Very dissatisfied	46
	Dissatisfied	27
	Neither satisfied or dissatisfied	22
	Satisfied	6
	Very satisfied	0
Considering the pay of nurses in other institutions (n = 147).	Very dissatisfied	29
	Dissatisfied	29
	Neither satisfied or dissatisfied	25
	Satisfied	15
	Very satisfied	3

In the open-ended question, RNs stated that the main reasons for them planning to leave nursing included: (1) dissatisfaction with the salary, (2) work demands and, (3) shift work and working hours.

7.3 What are the experiences and perceptions of young RNs with an intention to leave the profession in the early years of their career?

The results of the earlier phases of this study (Paper I and II) demonstrated a clear need for more in-depth understanding about the reasons and processes related to young RNs' intention to leave the profession. Therefore, two qualitative studies were designed. In the last phase of the research, young RNs were given an opportunity to tell their own stories of why they had an intention to leave the profession.

Firstly, according to the case study (Paper III) based on the narrative career-story interviews, an intention to leave the profession was a long-lasting and complex individual consideration process. Three main themes were associated with the young RNs' intention to leave the profession:

1. nursing as a 'second-best' or serendipitous career choice,
2. demanding work content and the poor practice environment, and
3. inability to identify with the stereotypical images of nurses.

According to their in-depth career stories, nursing had not been a childhood ambition for any of these young RNs; it was more serendipitous that they had ended up as nurses. After working for a few years in a nursing career, all of these young RNs decided to apply to the university to study their primary educational choice. One of the main drivers for this career change was poor advancement opportunities and poor opportunities for development in nursing. All of these RNs achieved academic Master's degrees, and therefore rose up in the educational hierarchy. Attaining further university education gave these young RNs new career development possibilities and an intellectual challenge.

These young RNs reported in their career stories that the professional nursing environment was not ideal in terms of working contracts, shift hours, salary and general appreciation. Moreover, young RNs reproduced cultural images and stereotypes of a nurse's role and behaviour, such as of 'angels with pretty faces and empty heads', 'physicians' handmaids' or 'naughty nurses'. They did not, however, place themselves within this expected stereotype and image of nurses.

In the second qualitative research (Paper IV), a qualitative thematic-interview approach was used to form an in-depth investigation into the reasons why young RNs had left their previous workplace and why they had an intention to leave nursing. In Table 19, the main themes, sub-themes and categories related to young RNs' organizational turnover and intent to leave the profession are described.

Table 19. Main themes, sub-themes and categories related to turnover and intent to leave the profession.

Main themes	Sub-themes	Categories
Poor nursing-practice environments	Ethical problems in nursing	Not able to care as well as would like to Working in organizations where poor quality care was provided
	Unsatisfactory working conditions	No opportunities for development No opportunities for career advancement Poor distribution of tasks Low salary Shift work
	Mistreatment	Verbal abuse from physicians and patients. Physical violence from patients in the workplace
Lack of support, orientation and mentoring	Did not received social support	Unsupportive management Unsupportive colleagues Feeling of being left alone
	Insufficient support for the transition from a student to a practicing RN	Inadequate orientation Inadequate mentoring
Nursing as a 'second best' or serendipitous career choice	Nursing as a second best career choice	Applied to university to study for another profession but didn't pass the entrance exams
		Deterred by university studies because of demanding entrance exams
	Nursing as a serendipitous career choice	Chose nursing education mainly for financial reasons Did not come up with any other occupation during high school Could not report why they applied for nurse education

For many of the young RNs participating in the thematic interviews (Paper IV), nursing career could be defined with the term 'compromise' (Table 20). In the interviews, nurses often used words like 'serendipity', 'drifted' or 'unintentional' to describe how they had ended up in the nursing profession. These RNs were adjusting their career goals and were choosing nursing as a 'second best' or serendipitous alternative. Some of these young RNs had applied to university after high school to study another field, for example psychology, pedagogy, law and social sciences. A few of these RNs had also considered applying for university during high school, but were deterred by the demanding entrance exams. Instead, they chose to apply to a polytechnic to study nursing, because the entrance exams were easier. Some RNs also reported that they had applied to a nursing school mainly for financial reasons; they felt that it was easy to get into a nursing school,

and knew that there was also a possibility to begin studying something else during the academic year.

Table 20. Thematic interviews; reasons for choosing career, reasons for having an intention to leave the profession and future plans (n = 15).

RN, age	Reasons for choosing nursing career	Main reason for having an intention to leave profession	Future plans
RN, 27	Worked earlier as a nursing aid which inspired to choose nursing profession.	Reality shock. Burnout. Ethical problems: not able to provide good quality of care. Inadequate support from the ward manager and colleagues.	Considering studying further, but was not sure what the future career could be.
RN, 27	Considered another profession when young. During high school decided to apply to polytechnics to study nursing.	Dissatisfied with the shift work, salary and temporary working contracts.	Studying at the university. Interested in management and teaching.
RN, 26	Considered another profession when younger, but didn't have enough motivation to read for the entrance exams for the university. After high school applied to polytechnics to study nursing.	Even when just graduated as an RN felt that wanted to study further. Felt that had no autonomy in nursing. Nursing profession did not offer enough developmental opportunities.	Studying at the university.
RN, 27	After high school applied to polytechnics to study nursing.	Poor nursing practice environment: high patient-nurse ratio, working overtime and shifts were changed without consent. Ethical problems, not able to provide good quality of care.	Could leave nursing if a good employment opportunity would open.
RN, 28	Family member had worked in the hospital when she was young, which inspired the nursing career.	Ethical problems, not able to provide good quality of care. Working conditions were too demanding in the previous job: too many patients, hurry and shortage of nurses.	Decided to apply to polytechnics for another profession.
RN, 25	Applied to polytechnics and the university at the same time. Was not accepted to university, so decided to start nursing studies.	Reality shock. Didn't get proper orientation as a graduate nurse in earlier workplace. Job in the ward was very demanding for a newly graduated RN. Didn't see many developmental or career opportunities in nursing.	Studying at the university.
RN, 26	Considered another profession, but during the last year in high school decided to apply to a polytechnic to study nursing.	Considered that the career developmental possibilities in nursing are poor and would like to have career with more challenges.	Interested to continue studies at the university.
RN, 26	Applied to university to study another profession but was not accepted. Worked as a nursing aid which inspired to choose nursing profession.	Already when graduated as a nurse felt that wanted to study further. Wanted more developmental and career advancement possibilities than possible in nursing career.	Studying at the university.

RN, age	Reasons for choosing nursing career	Main reason for having an intention to leave profession	Future plans
RN, 25	Applied to university to study another profession but was not accepted. For financial reasons applied to study nursing at the polytechnics.	Dissatisfaction with salary, nursing was too physically demanding, shift work. Long time in temporarily working contracts. Ethical problems, not able to provide good quality of care.	Studying another profession in the polytechnics.
RN, 25	Worked in elderly care when younger and this inspired to choose nursing profession.	Felt nurse practice environment too demanding: challenging patients, shift work, low salary. Felt that nursing work in earlier workplace didn't provide joy and satisfaction.	Seeking a new job in nursing. Had applied for a part-time job in another occupation.
RN, 29	There were no clear reasons why entered nursing. Chosen nursing after working a few years in another career.	Ethical problems, not able to provide good quality of care. Felt nurse practice environment demanding: too many patients, hurry and shortage of nurses. Difficulties combining family and shift work/overwork.	Was considering another profession, where the salary and less overtime could make things easier.
RN, 26	Applied to university to study in another profession but was not accepted. For financial reasons (getting study grants) applied to study nursing.	Felt that nursing didn't provide challenges after a few years of working. Disappointed with nursing management.	Interested to continue studies at the university.
RN, 26	Considered a career as psychiatrist or physician. However, during high school decided to apply to nursing school. Nursing was not a childhood dream occupation.	In the previous organization, felt mistreated. Many years in temporary working contracts, not getting a permanent job.	Considering further study, but not sure at the moment what the future career could be.
RN, 24	Studied first to be a licensed practical nurse, after that applied to nursing school.	Burnout. Workload was too demanding in the earlier job. Ethical problems, not able to provide good quality of care.	Had considered applying to the university, interested in management.
RN, 24	After high school was applying to university, but was not accepted. Applied to polytechnics to study nursing as a 'second-best' career choice.	Already when graduating knew it is not long working in nursing. Decided to apply for university only after few years of working as a nurse.	Studying at the university.

According to the thematic interviews (Paper IV), young RNs are confronted with many ethical problems, predominantly caused by their not being able to provide humane and proper care. The RNs reported experiences in the interviews about being left alone, anxieties about not being listened to, and too much responsibility being given to them in the health-care organizations. Therefore, RNs were striving to gain support from their managers and from experienced colleagues. Inadequate orientation in the health-care

organizations caused uncertainty, a sense of abandonment and the fear in these nurses that they would make a fatal mistake.

Also reported in the thematic interviews (Paper IV), was that the young RNs had considered many different professions and careers, including being a physician, police officer or teacher. Many of these young RNs had considered continuing their education in a university or polytechnic.

Moreover, according to the interviews and survey questionnaire data, some of the young RNs perceived threats in the future of the nursing profession. The survey study (Paper II) demonstrated that many young RNs perceived that the attraction of a nursing career for young people would decline to some extent (49%) or will get much worse (18%) within the next 10 years. Moreover, a quarter (24%) perceived that the recognition and respect for nurses from the society at large will also get somewhat or much worse (Table 21, data collected with BQ 12 questionnaire).

Table 21. How do young RNs perceive the future of the nursing profession in the next 10 years?

	Much better %	Somewhat better %	About the same %	Somewhat worse %	Much worse %
Attractiveness of the nursing profession for the young (n = 147)	0	5	28	49	18
The basic education in nursing (n = 145)	0	32	38	28	2
Recognition and respect from the society at large (n = 147)	1	23	51	20	4
The relation to the administration (n = 144)	0	12	80	7	1
Recognition and respect from patients (n = 145)	3	33	47	15	1
The post-graduate training in nursing (n = 146)	5	56	31	6	2
The possibilities to get a job/change job (n = 147)	27	63	6	3	1
The pay (n = 144)	2	33	60	4	1
The relation to the doctors (n = 144)	3	35	58	4	0
The relations between different categories of nurses (n = 147)	2	29	65	4	0

7.4 Summary of the results

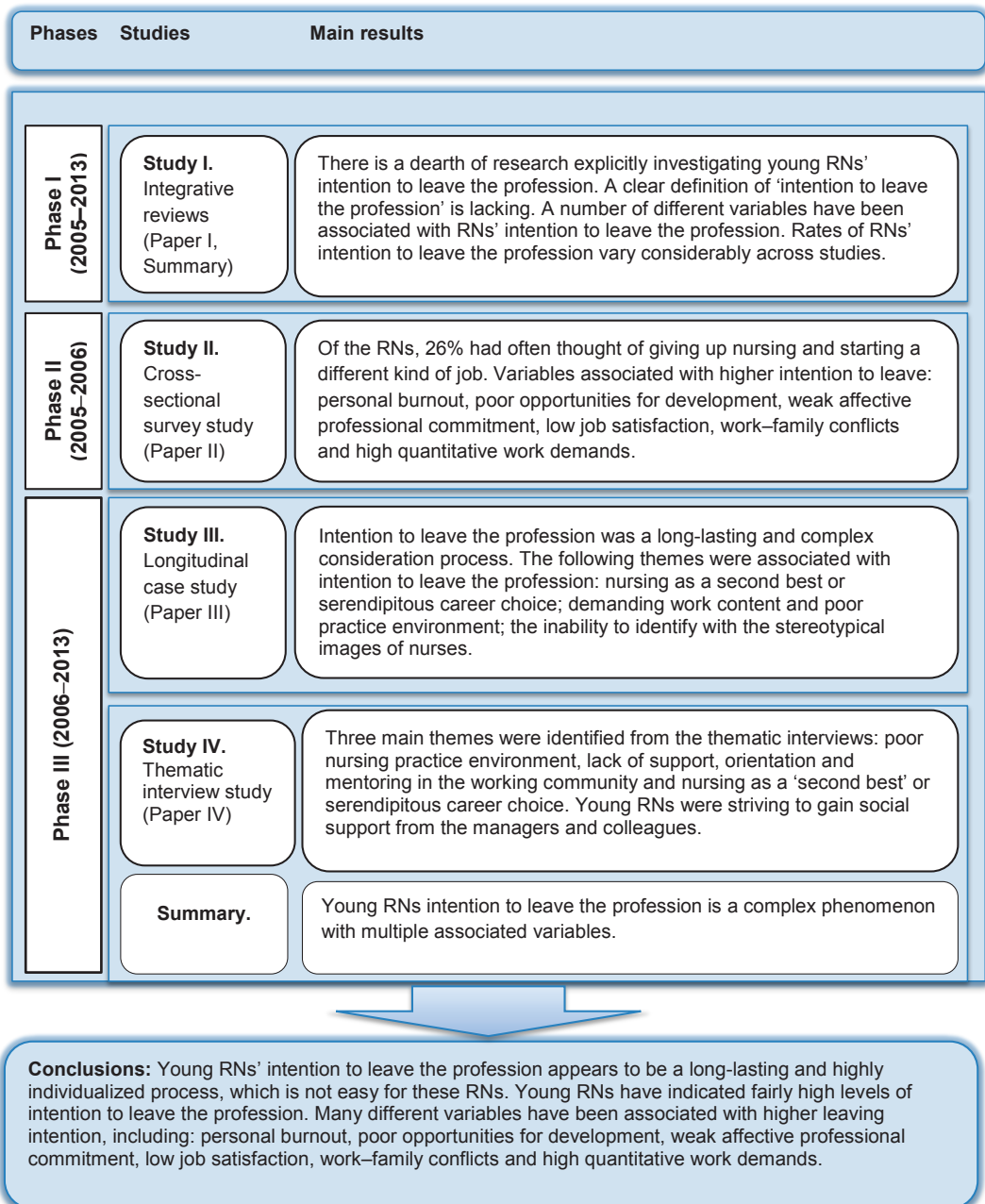


Figure 2. Summary of the results.

7.5 Conceptual model of young RNs' intention to leave the profession

The conceptual model presented in this dissertation (Figure 3) is based on the results of the three empirical studies (Paper II, III and IV) completed as part of this dissertation study. This conceptual model aims to describe the long-lasting, multiphase and complex consideration process in relation to young RNs' intention to leave the profession.

So far little is known about young RNs' experiences concerning professional turnover intent; particularly that gained through their own stories. According to the young RNs' interviews, the intent to leave the profession was a long-lasting, cognitive process taking place in the context and society in which young RNs lived, worked and had grown to the adulthood. This complex process was intertwined with the young person's lived experiences. This process does not proceed linearly. Rather, it can be metaphorically described as a spiral which progresses in a certain timeframe. This consideration process may take several years.

For some of the young RNs in this study, this consideration process had begun even before they had entered the profession. These RNs said that had chosen the profession as a 'second-best' or a serendipitous career choice. Moreover, according to the young RNs interviews, family, relatives and friends have an influence on the professional turnover intent of an individual RN – this study suggests that they mainly support and strengthen a young person's leaving intentions.

Some young RNs may be 'pushed out' of the profession because of poor practice environments and the associated poor nurse outcomes. In this study, young RNs described a poor practice environment as having the following attributes: high quantitative demands, poor opportunities for advancement and development, ethical problems in nursing, insufficient social support and inadequate nurse–patient ratios. Moreover, poor nurse outcomes were also described in association with the intention to leave the profession. These poor outcomes included burnout, work–family conflicts, a lack of affective professional commitment, low job satisfaction, and dissatisfaction with salary.

Moreover, young RNs also described enabling variables that facilitate them to proceed with the transition process of leaving the profession. Perceived alternatives (additional educational and employment possibilities) and received support (social support and financial support) allowed the young RN to make the final decision to leave nursing profession.

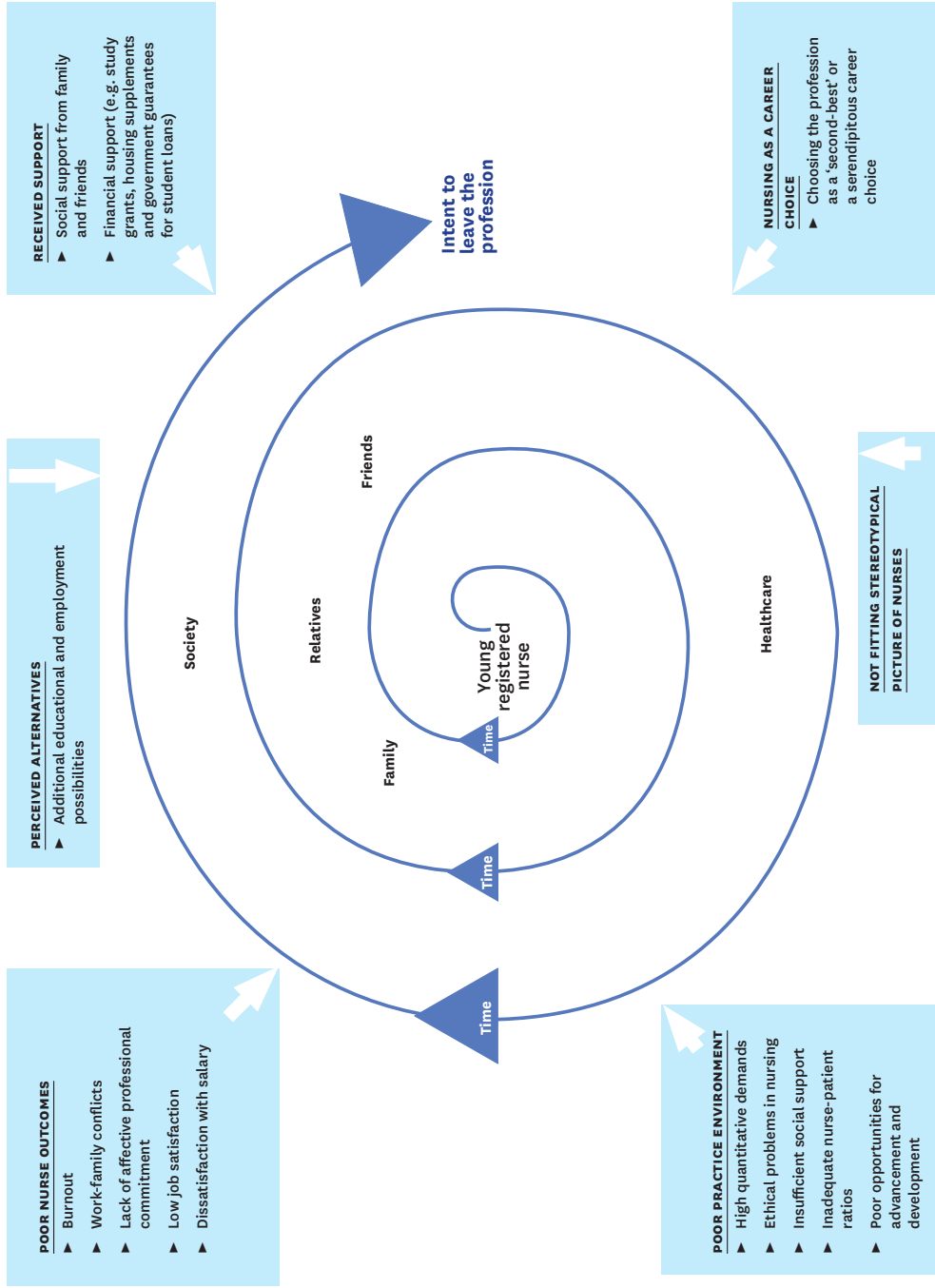


Figure 3. Conceptual model of young RNs' intention to leave the profession.

8. DISCUSSION

In this chapter, firstly, the strengths and limitations of the study are discussed. Secondly, the reliability, validity and trustworthiness of the study are reviewed. Thirdly, the main findings of the study are discussed in relation to the recent literature and in accordance with the aims of the study. Fourthly, the suggestions for health-care policymakers, leaders and nursing management are presented. Lastly, the implications for future research are discussed. More detailed discussions are presented in Papers I, II, III and IV.

8.1 Strengths and limitations of the study

The retention of the existing RN workforce and young RNs' intention to leave the profession are worldwide concerns; thus, the results of this research might be useful internationally when discussing the reasons why young RNs have professional turnover intent early in their careers. Moreover, two integrative literature reviews included in this study synthesize the current evidence (75 empirical studies) concerning professional turnover intent and this updated evidence can be utilized for decision-making in health care, workforce forecasts and nursing workforce management.

Until now, in-depth research examining nurses' perceptions of their work environment and reasons for turnover has been very limited (Coomber & Barriball 2007, Choi et al. 2011). While most of these earlier studies have mainly adopted a quantitative design to examine this phenomenon, this study also employed in-depth approaches in order to provide better understanding concerning young RNs' professional turnover intent. Therefore, the strengths of the study lie in the mixed-method used; this study combines both quantitative and qualitative methods and data. Literature reviews, quantitative survey study and in-depth interview studies were conducted during this study. Different data analysis methods (integrative review methods, statistical methods, narrative holistic-content and thematic methods) were also utilized in this study. Moreover, this study was conducted as an interdisciplinary collaboration. Hans-Martin Hasselhorn, M.D, from Bergische Universität Wuppertal; Marjukka Laine, PhD, from the Finnish Institute of Occupational Health; and Ulpukka Iso-Pahkala-Bouret, PhD, from the Institute of Behavioural Sciences, University of Helsinki were involved in the sub-studies (Papers II, III).

In previous survey questionnaires concerning RNs' intention to leave the profession, future career plans and prospects have not often been included in the items related to leaving intention. The findings of this study (Phase III) describe many different professions and occupations that young RNs were considering moving into if they were to make the final decision to leave nursing. This provided new insight into the career directions young RNs may take if they decide to leave the nursing profession in Finland.

This study has limitations that also need to be taken into account when considering the study and the generalizability of the results. Because of the cross-sectional nature of the data, any causal conclusions cannot be drawn. Furthermore, all of the four part-studies were conducted in Finland, thus generalization of these conclusions to other countries and health-care systems are limited. The limitations of this study include the limited sample sizes in the part-studies, which mean that the findings are descriptive and suggestive. It is also not possible to compare gender perspectives as a result of the small number of men ($n = 9$) represented in the young RN samples in this study. In the survey study, due to the small sample size and skewed distributions (Paper I), it was not possible to use more sophisticated statistical models to analyse the data. In the integrative literature reviews (Paper I, Summary), only those studies published in English and Finnish were included. Therefore, relevant studies in other languages that would have fit the inclusion criteria may have been overlooked.

8.2 Validity and reliability of the study

The integrative review (Paper I) showed that previous literature and research concerning young RNs' intention to leave the profession was scarce. This finding supported the need to study young RNs' intention to leave the profession further, both with quantitative and in-depth methods.

Any researcher is responsible for choosing the best research design to answer the questions she or he is asking (Gerrish & Lacey 2010). An intention to leave the profession is a subjective experience of an RN, and therefore both surveys and interviews can be considered appropriate methods to investigate these experiences (Laine 2005). For this study, a mixed-method research design was chosen. More than one data collection technique and data analysis method were used in this study. According to David and Sutton (2010, p. 97): "The use of mixed methods is the explicit attempt to gain some benefit from different methods from across the different spectra".

Validity can be divided into two different categories. *Internal validity* refers to "the extent to which the data collected accurately reflects the reality of the beliefs or behaviours of those from whom those data were collected" (David & Sutton 2010, p. 638). In this study, young RNs' beliefs were investigated both with the survey questionnaire and in-depth interviews. The results from the quantitative and in-depth studies showed a similar pattern and were not conflicting. Also, earlier studies concerning young RNs' experiences in their early career are in line with the results from this study. Therefore, there is no reason to assume that the data collected does not reflect the reality of those young RNs from whom the data were collected.

External validity refers to the generalizability of the findings of the study to persons and conditions other than those directly involved in the study (Powers & Knapp 1995, David & Sutton 2010). The aim of this study was to enhance the understanding into why some young RNs have an intention to leave the profession in Finland. The purpose of

this study was not to seek universal explanations of why young RNs leave the nursing profession. For example, with the qualitative case study (Paper III), the results were not meant to be generalized to a certain population (Flyvbjerg 2006) as case-study research commonly needs to be generalized theoretically (Sharp 1988, Riessman 2008). Yet, this knowledge can be used as a basis for further study, and in discussions concerning RNs' intentions to leave nursing from a generational perspective.

In quantitative studies, validity usually concerns the degree to which an instrument is measuring what it is supposed to measure (Polit 1996, p. 250). In this study, the questionnaire used to collect the data in phase II was developed in a large scale European-level research project by experienced researchers. Pre-existing, validated scales were used and a large number of scales were pre-tested in up to six pre-tests in three countries (Kümmerling et al. 2003). Therefore, it can be assumed that the instrument (BQ-12 questionnaire) was able to measure what it is supposed to measure.

The term reliability is often used when referring to the reliability of the data collection instrument. An instrument's reliability is usually easier to establish than its validity (Polit 1996). According to David & Sutton (2010, p. 631): "when a data collection instrument repeatedly records the same phenomenon, it can be said to be reliable." Reliability can also refer to a consistency in qualitative studies. If questions are interpreted similarly in each of the interviews across the study, the reliability of the data collection method is good (David & Sutton 2010).

In this chapter, the validity and reliability of the quantitative and qualitative parts of the mixed-methods research are evaluated separately, as proposed by Ihantola and Kihn (2011). In the first phase, the validity and reliability of the integrative review data and process was evaluated. In the second phase, the validity and reliability of the instrument used was evaluated. In the third phase, the trustworthiness of the two qualitative studies was evaluated by using the following four criteria proposed by Lincoln & Guba (1985): credibility, dependability, confirmability and transferability.

Phase I

In the first phase of the research, two integrative literature reviews (Paper I, Summary) were performed. Literature related to the research topic was identified from the scientific databases. The search strategy used in both literature reviews contained three databases: PubMed (1995–October 2013), CINAHL (Cumulative Index to Nursing & Allied Health Literature) (1995–October 2013), and the Social Sciences Citation Index (1995–October 2013). All of these databases have been previously used for performing systematic reviews of literature (Evans 2001, Flemming & Briggs 2006).

The literature searches were performed under the guidance of a university library information specialist. The accuracy and validity of the review process was enhanced by following Cooper's (1989) method; (1) the research problem was identified; (2) data were collected; (3) data were evaluated; (4) data were integrated; and (5)

results were presented. Also, the criteria for including and excluding the studies were developed and carefully followed, which enhanced the accuracy and validity of the review process (Evans 2001). However, only studies published in English and Finnish were included.

Phase II

In phase II, a quantitative survey study was conducted (Paper II). A secondary analysis of the quantitative survey data was selected for its method, to investigate the prevalence of young RNs' intention to leave the profession and the reasons behind this. One of the weaknesses of secondary data analysis is that "the collected data reflects the questions developed by the original investigators and may not adequately address the new research questions" (Connelly 2010, p.192). This is also one of the main weaknesses of this part-study. The NEXT study research was conducted to investigate the work conditions, private lives, health, and future perspectives of nurses (Hasselhorn et al. 2003a). The NEXT study research was investigating nurses of all ages and was not designed to specifically study young RNs' intention to leave the profession.

The strength of this secondary analysis (Paper II) is that the data collected in the original study did match the purpose of the secondary study (Connelly 2010). There are also strengths due to the fact that that data was collected as a part of a large scale, European-level study with a multidisciplinary and experienced researcher. The data used in this study was collected with the BQ-12 instrument, developed by the NEXT study's researchers. The BQ-12 questionnaire was built on existing validated scales that were pre-tested in up to six pre-tests in three countries. Moreover, a total of four scales were developed by the NEXT study's researchers on the basis of pre-tests and psychometric assessments. The instrument consists of nearly 220 questions, as well as open-ended questions where nurses had the opportunity to express their views. (Hasselhorn et al. 2003a.)

The questionnaire was translated with a two-way translation method. The English language questionnaire was translated by the Finnish researcher and the Finnish language questionnaire was back translated by an external language translator. When validated Finnish language items or scales were available, they were chosen for the questionnaire (Laine 2005).

An instrument can be called *reliable* if it produces consistent measures at different times and from measure to measure (Powers & Knapp 1995). According to Polit and Beck (2004, p. 418): "scales and tests that involve summarizing items are often evaluated for their internal consistency". The reliability of an instrument can be tested with Cronbach's alpha coefficient (Polit & Beck 2004). Powers and Knapp (1995, p. 22) defines Cronbach's alpha as follows: "an index of the degree to which a measuring instrument is internally reliable." Psychometric properties of the scales used in the BQ-12 questionnaire are described in detail in Küemmerling et al. (2003); reliability and

total scale item intercorrelation were very comparable between the countries, and all the scales used in the NEXT questionnaires proved to be quite reliable.

The evaluation of reliability is only estimation. Therefore it should be measured in each study. (Connelly 2011.) In Paper II, the Cronbach's alpha values were calculated for each subscale. The Cronbach's alpha values of the nine scales included in the study ranged from 0.89 (professional commitment scale) to 0.61 (emotional demand scale) with the study sample (N = 147). The overall value was 0.76, indicating satisfactory internal reliability of the scales. For comparing groups in this study, 0.70 to 0.80 is regarded as satisfactory (Connelly 2011). The psychometric properties of the scales used were described in detail in Paper II (Table 1).

Content validity refers to a subjective determination of validity (typically by some sort of expert judgment) (Powers & Knapp 1995). In the NEXT study, interdisciplinary expertise, for example from nursing scientists, physicians, psychologists, sociologists and statisticians, was utilized when the questionnaires were constructed (Hasselhorn et al. 2003a). Therefore, it can be assumed that the content validity of the BQ-12 questionnaire is sufficient. *Construct validity* determines whether the instrument actually measures the theoretical construct it is intended to measure (Polit 1996, Polit & Beck 2004). As previously validated and pre-tested scales were used, it can be assumed that the BQ-12 questionnaire does measure RNs' intention to leave the profession.

Phase III

In phase III, two qualitative interview studies were conducted. Evaluating the validity of qualitative research is challenging due to "the necessity to incorporate rigor and subjectivity as well as creativity into the scientific process" (Whittemore et al. 2001, p. 522). Qualitative researchers have used different terms to describe reliability and validity compared to quantitative researchers, including: truth value, credibility, trustworthiness and accuracy (Powers & Knapp 1995, Graneheim & Lundman 2004, Elo & Kyngäs 2007, Wertz et al. 2011). According to Yilmaz (2013, p. 319): "because ontological, epistemological, and theoretical assumptions of qualitative research are so fundamentally different from those of quantitative research, it should be judged on its own terms".

Lincoln and Guba's model (1985) was used as an overall guide when assessing the validity of the two qualitative inquiries. Although there has been a debate on how to judge the quality of qualitative research (Meyrick 2006), Lincoln and Guba's model has been considered to be the 'gold standard' when evaluating validity and reliability in qualitative research (Whittemore et al. 2001, Yilmaz 2013). Four techniques have been used to support the rigor of the in-depth studies: credibility, dependability, conformability and transferability (Lincoln and Guba 1985).

When the *credibility* of a study is evaluated, it is important to ask "whether the results of the research reflect the experiences of the participants or the context in a believable way" (Whittemore et al. 2001, p. 534). The credibility of this study was established in many

ways; firstly, it was established by selecting an appropriate method for data collection (narrative interviews and thematic interviews). The researcher – a female researcher who was at the time in her 30s, a registered nurse, and a PhD student in nursing science – conducted all of the interviews. This researcher was thus familiar with the context of the Finnish health-care system, and nursing practice environments.

As in all qualitative research, the researcher's experiences as an RN influenced the content and the research questions presented in this study. As Meyrick (2006, p. 804) concludes: "Good quality research ensures that the epistemological and theoretical stance of the researcher is stated clearly in the study". This could be seen as strength of the study, because the researcher's own experience as a young RN offered an insider's perspective on the views of young RNs. On the other hand, it raises the question of what the results would have been if the interviews and the data analysis were conducted by a researcher who did not have a degree in nursing or work experience as a RN. Moreover, one of the RNs participating in the qualitative inquiries (Phase III) had worked at the same ward in which the researcher had previously worked. This may have contributed to the researcher's interpretation of the interview data of this young RN. Simultaneously, this experience may have increased the researcher's understanding of the interviewee's experiences in their nursing career.

Dependability was established by describing the data analysis in detail and providing direct citations to reveal the basis from which the analysis was conducted. The citations used in these two inquiries were translated into English with a help of a translator, to maintain accuracy and context as much as possible. With the thematic interviews, Atlas.ti software enabled data integrity.

The *conformability and consistency* of the in-depth data analysis were established by holding meetings for the authors to discuss preliminary findings; emerging codes and themes were discussed until a consensus was reached. However, the conformability of the in-depth research could be compromised by a number of reasons. Researcher bias is a potential threat with all qualitative studies (Ihantola & Kihn 2011), and thus also for this study. The qualitative data was collected in its entirety by the researcher. At the time of the first career-story interviews (Paper III), the researcher was in her 30s, had been a practicing as an RN for approximately six years and was working in The Finnish Confederation of Professionals (STTK). At the time of the second narrative interviews and the thematic interviews, the researcher was working in the Union for Health and Social Care Professionals (Tehy) as a senior advisor. Therefore, the researcher is in fact a former RN who had made the decision to leave the profession before the age of 30. This has certainly affected how the researcher interpreted the interviews.

To enhance the *transferability* of the findings, a description of the context, selection and demographics of participants, data collection and process of analysis was provided (Paper III & IV), to enable the reader to determine whether the results of this study are transferable to another context (Graneheim & Lundman 2004).

In the third phase, some of the young RNs interviewed had actually made the decision to leave the nursing profession. Therefore, they were describing their intention to leave nursing retrospectively. This may have contributed to what they described their reasons to be for their intention to leave the nursing profession. Furthermore, the participants were all aware of the interviewer's occupation as a registered nurse, and thus it is possible that this knowledge may have influenced the way in which they recounted their experiences in the interviews. They were also aware that the topic of the research was the intention to leave nursing: this in turn might have brought up more negative issues from their career, in order to justify their reasons for leaving it.

8.3 Discussion of the main results

Many of the findings in this dissertation seem to be consistent with the existing literature; the first years in a nursing career have also been reported as challenging for young RNs in international research (Duchscher 2001, Gerrish 2000, Hayes et al. 2006b, Duchscher 2008, Kanai-Pak et al. 2008, Brewer et al. 2009, Duchscher 2009, Kovner et al. 2009, Pellico et al. 2009, Zinsmeister & Schafer 2009, Djukic 2011, Halfer 2011, Kovner et al. 2011, Peterson et al. 2011, Bjercknes & Bjørk 2012, Niitsuma et al. 2012, Feng & Tsai 2012, Suresh et al. 2013, Teoh et al. 2013).

8.3.1 Young RNs' intent to leave the profession as a long-lasting and complex process

The *first main finding* was that one in four (26%) of the young Finnish RNs reported a strong intention to leave nursing and start a different kind of job. Moreover, a total of 37% of the young RNs often considered leaving their current organization. The proportion with the intention to leave the profession was at a similar level to that of wage earners in Finland. According to the Quality of work life survey, conducted by Statistics Finland in year 2008, approximately one third (31%) of young wage earners (aged 15–24) were willing to change to a different profession. Overall, 27% of wage earners of all ages reported that they would like to change to a different profession. (Lehto & Sutela 2008.)

The sample for the survey study (Paper II) was collected in the year 2003; however, more recent studies confirm that young RNs do have fairly high levels of intention to leave the profession. According to the study by Salminen (2012) into young Finnish RNs (aged less than 35 years) working in university hospitals, 37% had a frequent intention to leave the profession (sample collected in the year 2005). Contradictory findings, however, also exist; according to the RN4CAST -study, the proportion of nurses intending to leave their profession in Finland was lower than in the other international and Finnish studies, at only 10% (N = 1131, mean age 41.7). According to the RN4CAST data, age did not correlate with nurses' intention to leave the profession in Finland (Heinen et al. 2013). In international studies, the rate of young or graduate nurses with an intention to leave the

profession has varied between 6–59% (Engberg et al. 2007, Rudman et al. 2010, Lavoie-Tremblay et al. 2008, Clendon & Walker 2012, Lee et al. 2013, Rudman & Gustavsson 2013).

The current economic recession has resulted in a decrease in new nurses' turnover for example in the United States (Brewer et al. 2012a). This situation could also be replicated in Finland. However, as Brewer et al. (2012a) remains, nurse turnover may increase dramatically once the job market again opens up. Thus, young RNs' intention to leave the profession may be dependent on the economic situation and will change over time due to the changes in the economy and the labour markets.

The *second main finding* was that the mix of quantitative and qualitative study indicated that a combination of different variables was related to the young RNs' intention to leave the profession. In the survey questionnaire and in the two in-depth studies, personal burnout was associated with young RNs' intention to leave the profession. This finding is supported by earlier empirical research, where burnout was associated with RNs' intention to leave the profession (Hasselhorn et al. 2005b, Heinen et al. 2013). Also, according to a recent study by Rudman and Gustafsson (2011), many graduates experience high levels of burnout, with the second year of practice being especially stressful. According to these authors, stress was associated with the intention to leave the profession early in a nursing career. Based on the results of this study and previous international studies, it can be concluded that there is a need to find new effective ways to reduce young RNs' experiences of burnout early in their career.

According to the survey study (Paper II), other variables associated with a higher level of intention to leave the profession were poor opportunities for development, lack of affective professional commitment, low job satisfaction, work–family conflicts and higher quantitative work demands. In the in-depth inquiries (Phase III), choosing a nursing career as a 'second-best' or serendipitous career choice, the demanding work content, as well as the poor practice environments and the inability to identify with the stereotypical images of nurses were among the themes which young RNs described as reasons for intending to leave the profession.

The findings of the present study suggest that one driver for having intention to leave the profession could be poor opportunities for advancement and development. Similar findings have been discussed in other studies; according to Salminen (2012), a proportion of young RNs in Finland have an intention to leave the profession because they feel that they have the potential to carry out more challenging tasks. Furthermore, in Kankaanranta and Rissanen's (2009) study, the possibility for specialization was strongly associated with job satisfaction and a decrease in the intention to change sector. Moreover, former nurses had indicated "too low demands" of nursing work (Hasselhorn et al. 2005b) and lack of professional opportunities (Fochsen et al. 2005) as reasons to leave the profession. According to the Quality of work life surveys, possibilities for development within work are more valued by Finnish workers than career advancement

connected to the job (Lehto & Sutela, 2008). Therefore, health-care organizations also in Finland should be able to provide professional development opportunities for young RNs.

One finding of this study that was contradictory to earlier research, was that no single, jarring precipitating events or shocks (e.g. an act by a violent patient) were identified which could have caused these young RNs to consider leaving the profession. This is the opposite finding to some earlier studies, where precipitating events, or a shock, caused part of the anticipated departure intentions from an organization (Morrell 2005) and even the profession (Cheung 2004, Holtom et al. 2005, Morrell 2005).

The *third main finding* of this study was that young RNs' intention to leave the profession appears to be a long-lasting and complex consideration process. According to the longitudinal career stories and thematic interviews (Paper III, IV), the consideration process for young RNs having intention to leave the profession lasted more than one year and was not easy for these RNs. In other studies, serious consideration processes have also been found to begin approximately one year before the final decision to leave the profession is made (Hasselhorn et al. 2005b, Carless & Arnup 2011). Because this consideration process of leaving intention is long lasting, it creates the possibility for preventive action (Hasselhorn et al. 2005b, Cortese 2012). Such preventive actions could be, for example, occupational health activities to reduce stress as well as the provision of new developmental and career opportunities (e.g. advance practice nursing roles, a limited right to prescribe medication, career ladders). Moreover, activities to improve the nursing practice environments (e.g. ensuring adequate staffing levels, sufficient feedback, rewarding), are also needed (Kvist et al. 2013).

The *fourth main finding* was that many young RNs in the qualitative inquiries (Paper III, IV) describe having chosen a nursing career as a 'second-best' or serendipitous career choice. Choosing a nursing career was a compromise, rather than a long-held plan for these young RNs. This finding is supported by Santamäki et al.'s (2005) study, in which 35% (n = 3,352) of the participants reported that they had chosen nursing as a 'second-best' alternative or 'coincidentally'. This finding is also in line with the earlier study, where compromising a desired career goal was associated with career dissatisfaction and career distress (Creed & Plume 2013). Moreover, entering the nursing profession as a default career choice has been associated with career-choice stress (Jirwe & Rudman 2011), consideration of leaving the profession early in the career (Engberg et al. 2007) and with shorter career in nursing (Barriball & While 1996, Duffield et al. 2004a).

The *fifth main finding* was that in the qualitative case study (Paper III), young RNs' provided stories of negative images and stereotypes in relation to their intention to leave the profession. This result can be mirrored with respect to the history of the nursing profession. Nursing has been defined by concepts of motherhood, altruism, and ideals of femininity (White 2002, Darbyshire & Gordon 2005, Fletcher 2007) and also has called as a 'virtuous choice' (Price et al. 2013b). Florence Nightingale, a 19th century pioneer

in nursing, described nursing as a profession and vocation for women. She wrote, in early 1859, that being a nurse requires a calling and a certain nature; “she must be a sound, and close, and quick observer; and she must be a woman of delicate and decent feeling” (Nightingale 1992, pp.70-71). Could this be one reason why young RNs’ leave the profession — that bright and career motivated young RNs believe they do not fit the historical and gendered stereotypes of nurses? Moreover, these stereotypical images could influence young people’s career choices (Price et al. 2013a). As Lutter (2011, p.11) concluded in her feminist study of nurses: “It is remiss to explore the nursing shortage without exploring the position of women within a gendered profession”.

8.3.2 Retention of young RNs in the nursing workforce

The nursing workforce shortage has been described as a complex problem with no single reason or solution (West et al. 2007). The retention of RNs is a global concern for policymakers, nurse leaders and nurse managers (O’Brien-Pallas et al. 2005, Institute of Medicine 2010). Retaining RNs in the workforce is less expensive and disruptive than replacing departing nurses (Cortese 2012). Mature-age graduates do not alone solve the forthcoming forecasted nursing shortages, because they have a shorter working career ahead in the profession than young graduates (Auerbach et al. 2007, Drury et al. 2008). Therefore, finding effective ways to specifically retain young RNs in the nursing workforce is of the utmost importance in order to maintain the core of the future health care workforce (Aiken & Cheung 2008, Buchan & Aiken 2008, WHO 2009, WHO 2010, Attree et al. 2011, European Commission 2012).

Improvements in nursing practice environments are suggested in order to retain a greater number of young RNs in health-care organizations (Aiken et al. 2012, Van den Heede et al. 2011, Twigg & McCullough 2014) and to improve patient safety outcomes (Kirwan et al 2013). The Magnet Recognition Program, developed in the United States (American Nurses Credentialing Center 2013), could be considered as one of the models to develop practice environments internationally (see example Lacey et al. 2007, Aiken et al. 2008c, Salmond et al. 2009, Aiken et al. 2010, Kelly et al. 2011, Kramer et al. 2011, Wolf et al. 2008) and also in Finland (Partanen et al. 2008, Kvist et al. 2013).

As in the study of new nurses by Bjercknes and Bjørk (2012), young RNs participating in this study wanted to provide high-quality care and make a difference to their patients. Young RNs predominantly enjoyed taking care of their patients, and mainly did not regret their decision to become nurses. However, they were confronted with many ethical problems, predominantly caused by their not being able to provide humane and proper care. Similar findings have been discussed in other studies. For example, in a study by Bjercknes and Bjørk (2012), newly qualified nurses wanted to give patients the best care possible. However, at the same time they were experiencing fragmentation of patient care, time pressures and a lack of support. Young RNs’ desire to provide high-quality

and appropriate nursing must be recognized; high-quality patient care has been shown to be a major generating factor for job satisfaction in nurses (Utriainen & Kyngäs 2009).

However, these young RNs also presented concerns that the professional nurse practice environment is not always ideal in Finland. These young RNs reported facing time pressures, high patient–nurse ratios, heavy workloads and ethical problems. The results of this study are in line with growing research evidence which links poor nursing practice environments and poor nurse outcomes (e.g. burnout, job dissatisfaction and intention to leave) (Kutney-Lee et al. 2009, Aiken et al. 2011a, Aiken et al. 2012, Hinno et al. 2012, Kramer et al. 2013, Kutney-Lee et al. 2013). Buchan and Aiken (2008, p 3262) have crystallized this need for better nursing practice environments as follows: “The ‘shortage’ of nurses is not necessarily a shortage of individuals with nursing qualifications; it is a shortage of nurses willing to work in the present conditions.” However, more research is needed into whether improvements in nursing practice environments could retain more young RNs within the profession.

In the thematic interviews (Paper IV), the young RNs were striving to gain social support and mentoring. Moreover, many of them felt that they had not received adequate orientation when they entered their workplace as new graduates. Also in previous studies, adequate social support was found to be important for securing positive work outcomes for newly-graduated RNs (Peterson et al. 2011). Moreover, different orientation programmes and mentoring have been found to be essential in relation to the retention and satisfaction of new graduate nurses in their early careers (Shamian & Inhaber 1985, Levett-Jones & Fitzgerald 2005, Salonen et al. 2007, Duchscher 2008, Salt et al. 2008, Scott et al. 2008, Rush et al. 2013). Different kinds of programmes have been developed for new nurses to ease their transition into the practice environment, including: generic programmes, residencies, internships, mentorships, extended preceptorships and postorientation “buddy” programs (McDonald & Ward-Smith 2012). These abovementioned international orientation programmes range from brief informal programmes to extended formal programmes including preceptors and mentors (Scott et al. 2008, Salt et al. 2008, McDonald & Ward-Smith 2012). It has been suggested that management strategies that support long-term mentorship between new RNs and their preceptors should be further developed also in Finland (Salonen et al. 2007, Kivelä et al. 2014).

Supporting RNs through the transition of their first few years of practice is paramount for retaining them in the profession. Special attention should be paid on young RNs who have plans to change wards or organization, as this may be the start of a withdrawal process that could then lead to professional turnover (Krausz et al. 1995, Morrell 2005). Young RNs’ intentions to leave the profession should be regularly evaluated (Salminen 2012) and managers should be able to identify the early signs of an intention to leave (Takase 2010). Moreover, profiling of young RNs who leave should be undertaken so that managers have an accurate and detailed picture of turnover in their organizations (Morrell 2005).

At a time when careers are described as ‘boundaryless’ or ‘protean’ (Hess et al. 2012), it is inevitable that some young RNs will leave their profession early in their careers. This transition can be beneficial for these young RNs; they can move to careers that they find more satisfactory. However, from the perspective of the nursing workforce, it would be necessary for an adequate number of young RNs to make the decision to stay within their profession. In a time of global workforce shortages, the departure of a large number of young RNs is problematic and can result in further complications in these shortages. However, it is difficult to estimate what level of nurse turnover is optimal for health-care organizations and for the nursing workforce as whole. Leaving the profession is not as prevalent in Finland as the impression that public debate may give; approximately every tenth worker (15% of men and 13% women) have been working in several clearly different professions during their career and this phenomenon has remained quite unchanged during past 30 years. (Lehto & Sutela 2008.)

Young RNs enter a different working life and nursing practice environments than nurses who graduated some decades ago did. The attractiveness of the nursing profession and health-care organizations is a critical challenge in terms of future nursing workforce; “If we are to attract creative, committed, intelligent, and passionate people into nursing, then nursing needs to be seen as every bit as worthwhile, challenging, and dynamic a career as any other in the fields of health care or social service.” (Darbyshire & Gordon 2005, p. 74). However, there are no longer life-long careers; instead, a proportion of young RNs can be expected to change organizations and even profession several times within their lifetime. Therefore, in a time of nursing shortages, those health care systems and organisations which are able to recruit and retain young RNs will manage better the burden of an aging population and the growing need for care.

8.4 Suggestions for health-care policy-makers and nurse leaders

Retention of young RNs is a common global concern for health-care policy-makers and nurse leaders. The following suggestions are thus made, based on the results of this study:

1. The latest research evidence concerning young RNs’ turnover and intention to leave the profession should be implemented when decisions are made concerning the nurse workforce on international and national levels.
2. The retention of young RNs should be raised as a one of the priorities in Finland, and also globally, when making political level decisions regarding the nurse workforce.
3. Young RNs must be prioritized as an important generation group of the nursing workforce when international and national level visions and strategies for nursing workforce are projected.

4. A focus on the reduction of young RNs' burnout and job dissatisfaction is crucial when decisions are made in relation to the professional nursing practice environments.
5. Effective and innovative solutions need to be created for the retention of young RNs in the nursing workforce. Human resource management, as well as retention activities, should be targeted at avoidable turnover.
6. Investment needs to be directed into nurse practice environments; possibilities for advancement and development (for example career ladders, advance practice roles), social support, mentoring and orientation programmes should all be provided for young RNs in the first years of their nursing career.
7. Young RNs' desire to provide high-quality nursing care must be recognized in society and health-care organizations.
8. During nursing education, clinical skills should be emphasized so that novice RNs has the necessary practical skills to start nursing work.

8.5 Suggestions for nurse managers

On the basis of the results of this study, it is suggested that nurse managers:

1. Acknowledge the stress and demands experienced by young RNs in their early careers.
2. Provide career advancement and personal developmental possibilities by offering various career pathways, clinical advancement opportunities and career ladder programmes.
3. Develop and implement orientation and mentoring programmes.
4. Provide social support for young RNs: also listening to and accepting negative emotions.
5. Perform development discussions and exit interviews to discover the reasons why young RNs are leaving and whether their decision to leave is avoidable.
6. Provide regular feedback for young RNs.
7. Act as a positive RN role model, alongside experienced colleagues.
8. Intervene if bullying and verbal abuse against young RNs occurs.
9. Provide young nurses with opportunities to present their thoughts and opinions about their work and career.

10. Be aware of the effects that negative stereotyping has for nurses and the profession generally.

8.6 Suggestions for further research

Based on the results of this study and earlier research, we make the following suggestions for nursing research:

1. The lack of studies on young RNs' intention to leave the profession internationally presents a need for further exploration.
2. Future research is needed into whether the motives for choosing a nursing career in adolescence affect the length of the career in the nursing profession at a later age.
3. Further in-depth studies should target young RNs' lived experiences in order to gain deeper understanding into the long-lasting cognitive consideration processes associated with intent to leave the profession early in their career.
4. Moreover, longitudinal research is needed in order to understand why some young RNs make the final decision to leave the profession whereas some decide to remain in the profession (despite reporting a leaving intention).
5. Investigating former young RNs' views and experiences could provide additional information about the reasons why young RNs made the final decision to leave the profession.

9. CONCLUSIONS

This study's findings suggest that young RNs' intention to leave the profession warrants attention in health-care policies and nurse-workforce forecasts, because this generational group of RNs are demonstrating fairly high levels of intent to leave the profession. Because young RNs' professional leaving intention is a complex and long-lasting phenomenon, there are no simple health policy level solutions for the retention of young RNs. However, more effective strategies are required to enhance the retention of young RNs in the future.

The following conclusions are drawn from this study:

Conclusions from the literature reviews:

- There is a dearth of research explicitly investigating young RNs' intention to leave the profession.
- A definition of the concept of 'intention to leave the profession' is lacking across studies.
- There is a dominance of quantitative research concerning this phenomenon.
- A myriad of variables have been associated with RNs' intention to leave the profession.
- A clear theoretical understanding of why young RNs are leaving or staying in the profession is still lacking.

Conclusions from the survey study:

- Many variables were associated with a higher intention to leave and therefore a comprehensive understanding of why young Finnish RNs have this professional turnover intent was not formed based on this quantitative survey study.
- In-depth research was needed in order to gain a better understanding of why young RNs are intending to leave the profession.

Conclusions from the in-depth studies:

- The use of in-depth methods made it possible to examine young RNs' professional turnover intent as an ongoing, complex and multidimensional process.
- Young RNs' intention to leave the profession appears to be a long-lasting and highly individualized process.

Implication for management, practice and future research:

- Better understanding is needed about the cognitive consideration processes undertaken by young RNs intending to leave the profession.
- As young RNs' intent to leave the profession appears to be formed by a long-lasting consideration process, preventive actions can be enacted.
- These preventive actions can include measures to reduce work-related stress, possibilities for advancement and development (career ladders, advance practice roles), social support, feedback and positive acknowledgement from the nurse managers and experienced colleagues, mentoring and orientation programmes.
- Societies, labor markets and health-care systems differs globally; therefore, it could be more reasonable to produce national-level data on young RNs' professional turnover intent for the use of policymakers, nurse leaders and managers.

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In Helsinki 16.2.2014, when there is a feeling that spring is almost around the corner, the winter sun is starting to warm and the birds are singing loudly in the morning....

Mervi Flinckman

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APPENDICES

Appendix 1. Empirical studies (n = 24) concerning RNs' professional turnover.

Author, date published	Design of study and country	Sample size/Response rate (RR)	Average years in nursing before leaving	Mean age/Gender	Main results/findings
MacKusick & Minick (2012), United States	Descriptive, semi-structured interviews	10 RNs with a minimum of 1 year of clinical practice and no clinical practice in the last 6 months.	1–18 years of clinical practice.	Nurses were mainly aged 40–49 (n=7, 70%); 8 female, 2 male.	Three main reasons for leaving clinical nursing were: <ul style="list-style-type: none"> • unfriendly workplace, • emotional distress related to patient care, • fatigue and exhaustion.
Gök & Kocaman (2011), Turkey	Descriptive, Questionnaire	134 nurses who had left the profession/RR not described.	The number of years worked as a nurse ranged from 1 to 14 years; mean working time 4.89 years.	Mean age 32 years, 100% female.	The main reasons reported for leaving nursing were: <ul style="list-style-type: none"> • unsatisfactory working conditions, • negative perception of nursing
Rajapaksa & Rothstein (2009)	Descriptive, Questionnaire (NSSRN)	1,589 RNs who were not employed as nurses and were employed in other occupations.	Average number of years worked as an RN 8.73 years (<i>SD</i> = 7.3 years).	Mean age 48.49 years, 94% were female.	Main reasons for leaving nursing were: <ul style="list-style-type: none"> • better salaries in current type of position, • hours more convenient in other position, • current position more rewarding professionally.
Black et al. (2008), United States	Descriptive, Questionnaire (NSSRN)	2,906,615 registered nurses who were licensed to practice in the United States in the year 2004.	The largest group working outside nursing had more than 25 years of work experience.	Not described, 92.5% female (of those who were outside nursing).	Main reasons for working outside nursing were: career change, burnout/stressful work environment, scheduling challenges or working too many hours, better pay in non-nursing employment, inadequate staffing and the physical demands of nursing.
Smith et al. (2007), United States		1,438 nurses.	Not described.	Mean age 50,8 years, 96% were female.	Main reasons for leaving to job not related to nursing included: pay and/or promotional opportunities, working conditions, job location and because of a change in career or professional interests.
Hasselhorn et al. (2005), 11 European countries	Longitudinal, descriptive, Questionnaire	1,924 nurses, RR 34%.	Not described.	Mean age 37 years, not described.	The main reasons reported for leaving nursing were: <ul style="list-style-type: none"> • too low demands, • working conditions, • financial and personal reasons.
Sjögren et al. (2005), Sweden	Descriptive, Questionnaire	288 former nursing personnel, RR 73%.	17 years.	Average age 45.7 years, 88% female.	The main reasons reported for leaving nursing were: <ul style="list-style-type: none"> • workload, • working schedule, • management and social climate, • status of profession.
Morrel (2005), United Kingdom	Descriptive, Questionnaire	336 nurses who had left trust voluntarily/ RR 31%.	Not described.	Not described.	In many cases of nurse turnover, a single, jarring event, or shock, initiated thoughts of leaving.
Barron & West (2005), United Kingdom	Descriptive, Questionnaire	British Household Panel Survey Data 1999 and 2001/RR not described.	Not described.	Not described.	Variables associated with shorter tenure in nursing: <ul style="list-style-type: none"> • being male, • being younger, • having a degree, • having been born in the UK.
Duffield et al. (2004a, 2004b), Australia	Descriptive, Questionnaire	150 nurses no longer employed within the profession/RR not described.	11 years.	Mean age 43.6 years, 92% female.	Former nurses had moved to management positions outside the health industry. Most agreed that their nursing skills and experiences had assisted them in attaining these positions. The reasons why nurses had left their profession were varied and complex. Entering nursing as a 'stepping stone' was negatively associated with tenure.

Appendix 1. Empirical studies (n = 24) concerning RNs' professional turnover.

Author, date published	Design of study and country	Sample size/Response rate (RR)	Average years in nursing before leaving	Mean age/Gender	Main results/findings
Cheung (2004), Australia	Descriptive, semi-structured interviews.	29 former nurses/ RR not described.	1–20 years of experience.	Aged between mid-20s and late 40s, 93% female.	Leaving nursing was not an easy process for many of the former nurses. Stress and burnout relating to inadequate staffing and lack of support were significant variables in nurses' decisions to leave.
Andrews (2003), United Kingdom	Descriptive, questionnaire. Semi-structured interviews	74 former nurses working as therapists.	Not described.	Mean age 46 years, 87% female.	Nurses were motivated to leave nursing by disillusionment with the health service and particular aspects of their former job.
Duffield & Franks (2002), Australia	Descriptive, semi-structured interviews	17 former nurses/ RR not described.	Mean number of years 10.97.	Not described, 88% female.	The main reasons reported for leaving nursing were: <ul style="list-style-type: none"> reaching a ceiling in nursing, wishing to develop themselves in another direction.
Durand & Randhawa (2002), United Kingdom	Semi-structured Interviews	24 nurses returned to profession and 28 on 'career break'/ RR not described.	Not described.	Average age was 39 years, not described.	The main reasons given for having a career break were: <ul style="list-style-type: none"> pregnancy, meeting the needs of small children, dissatisfaction with the nursing role or nursing conditions, the relocation of a spouse for work purposes.
Cartledge (2001), United Kingdom	Interviews using open questions	11 former intensive care nurses/ RR not described.	Not described.	Not described.	Most dominant factors influencing decision to leave were: stresses related to the work, inadequate opportunity for development, recognition and respect of others and implications of shift work.
Andrews et al. (2000), United Kingdom	Descriptive, semi-structured interviews and questionnaires	105 nurse owning residential homes/ RR not described.	Not described.	Not described.	Former nurses had more responsibility and authority and greater control over their career when running their own business.
Spratley et al. (2000), United States	Descriptive, Questionnaire	135,696 RNs employed in non-nursing occupation/ RR 72%.	Not described.	Not described, 95% female.	Predominant reasons for working in non-nursing position were: the other positions' scheduled hours were more convenient, better salaries, greater safety than in health-care environments, more professionally rewarding and taking care of home and family.
McLees (1998), Canada	Descriptive, Questionnaire	202 graduate nurses/RR 55%.	Early career years.	Not described.	Reasons for leaving nursing were dissatisfaction with nursing as a career because of stress and frustration with working conditions, family commitments, or health problems.
Fottler & Widra (1995), United States	Descriptive, Questionnaire	1,004 inactive registered nurses/RR 64%	Mean 13.2 years.	Not described.	RNs initially become inactive for both personal and professional reasons. Primary reason for leaving was pregnancy/child rearing.
Pierce et al. (1991), United States	Descriptive, Questionnaire	627 nurses/RR 52%	Mean 8 years.	Mean age 37.3 years, not described.	Nurses who had left nursing were clearly more dissatisfied than other groups. Salary, salary increases, and advancement opportunities were sources for dissatisfaction for nurses who had left nursing.
Bentham & Haynes (1990), United Kingdom	Descriptive, Questionnaire	642 inactive nurses/RR 82%	Not described.	Age range from 25 to 44 years, 95% female.	Reasons given for leaving the last nursing job were: pregnancy, moving away, dissatisfaction with nursing and dissatisfaction with pay.
Moore et al. (1982 & 1983), United Kingdom	Descriptive, Questionnaire	634 inactive and 172 nurses in other occupation/RR 48%	Not described.	Not described.	Family reasons were the most important reason for nurses' inactivity. Nurses stated that they believe a mother should be at home while her children are young and that they cannot make suitable arrangements for the care of their children.
Artman & Penttilä (1972), Finland	Descriptive, Questionnaire	716 registered nurses not employed in nursing/ RR 64%	Not described.	Under 60 years, 100% female.	Most often mentioned reason not working in nursing was: caring for children, marriage, joint taxes, troubles because of night shifts and irregular working hours.
Siivola (1963), Finland	Descriptive, Questionnaire	2,059 nurses not employed in nursing.	Not described/RR 80–85%.	Under 60 years, 100% female.	Home and family issues, dissatisfaction with salary and irregular working hours were the three most often mentioned reasons for why nurses do not work in nursing.

Appendix 2 Empirical studies (n = 44) concerning nurses' intention to leave the profession (updating Paper I)

Author(s), Year, Country, Design	Aim of the study	Sample, setting	The main results
Gurková et al. (2013), Czech and Slovak Republics, cross-sectional questionnaire survey	To investigate the relationship between professional turnover intentions and job satisfaction among RNs.	1,055 RNs working in hospitals and in different kinds of wards (e.g. emergency and intensive care units, operating rooms and geriatrics wards).	Job dissatisfaction, dissatisfaction with control/responsibility and dissatisfaction with scheduling were the main predictors of RNs' intentions to leave the profession.
Heinen et al. (2013), 10 European Countries, cross-sectional questionnaire survey	To study factors associated with nurses' intention to leave the profession due to job dissatisfaction.	23,159 nurses working in 385 medical and surgical hospital wards (with bachelors or diploma level education).	Burnout was the factor that was associated with intention to leave the profession within and among European countries. Six other factors were also associated with intention to leave the profession in ten countries: (1) the nurse-physician relationship, (2) leadership, (3) participation in hospital affairs, (4) older age, (5) female gender, (6) working fulltime.
Lee et al. (2013), China, cross-sectional questionnaire survey	To investigate the relationships between quality of work life and nurses' intention to leave their unit, organization and profession.	1,283 nurses working in acute-care hospitals.	The significant predictors of intent to leave the profession were: (1) supportive milieu with job security and professional recognition, (2) work arrangement and workload, (3) work-home life balance (4) nursing staffing and patient care.
Mohamed & Mohamed (2013), Egypt, cross-sectional questionnaire survey	To investigate the impact of job demands and control on nurses' intention for turnover.	83 nurses working in obstetrics and gynecology departments.	Nurses' age and nursing experience was positively correlated with the intention to stay in the profession. Greater feeling of control of work was associated with lower intention to leave the profession.
Rudman & Gustavsson (2013), Sweden, prospective longitudinal survey study	To study new graduate nurses intentions to leave the profession during their first five years of practice.	1,417 new graduates. Mean age in the first year of nursing education was 28.4 years.	Burnout during nursing education was associated with levels of intention to leave profession during the first year of employment. Disengaged and exhausted nurses had higher concurrent levels of intention to leave.
Unruh & Zhang (2013), United States, Correlational survey design	To investigate the influence of hospital work environments on newly licensed RN's commitment and intent to leave nursing.	414 RNs working in hospitals.	Variables associated with lower intent to leave nursing: being white, better health, good orientation, working day shifts, working more hours, perceiving fewer job difficulties and demands and more job control.
Clendon & Walker (2012), New Zealand, cross-sectional questionnaire survey and focus group interviews	To investigate experiences of young nurses using a mixed-method design.	647 nurses (aged under 30 years) replied to the questionnaire. Also, two focus-group interviews with a total of 7 and 8 nurses.	In the quantitative survey, the emotional challenge of nursing being greater than the young nurses anticipated was one of the main reasons for intention to leave the profession. Five main themes were found based on the qualitative data: (1) challenges of nursing, (2) rewards of nursing, (3) being young, (4) coping (5) addressing generational differences.
Cortese et al. (2012), Italy, cross-sectional questionnaire survey	To identify factors influencing nurses' intention to leave the ward, hospital and profession.	512 nurses in working in intensive and critical care units in two different hospitals.	Factors associated with intention to leave the profession were: (1) low job satisfaction for professional status, (2) dissatisfaction with pay, (3) dissatisfaction for organizational policies, (4) aged under 40 years, (5) part-time schedule.
Derycke et al. (2012), Belgium, longitudinal cross-national exploratory survey (NEXT)	To investigate the relationship between work ability and turnover intention (ward, organization and profession)	1531 health-care workers.	A substantial change in work ability was associated with higher intention to leave the profession.
Hinno et al. (2012), Finland, cross-sectional questionnaire survey	To investigate hospital RNs' assessments of the organizational characteristics and RNs' career plans.	334 RNs working in academic and district hospitals.	Positive ratings by RNs concerning following work environment characteristics were associated with nurses' decreased intention to leave the profession: (1) support for professional development, (2) adequate staffing, (3) assuring nursing competence, (4) supportive management.
Laschinger (2012), Canada, a descriptive correlational design, questionnaire survey	To describe new graduate nurses work life experiences. Moreover, to investigate predictors of job and career satisfaction and turnover intentions in the first two years of practice.	342 new graduate nurses working in hospitals. Average age was 28 years.	Burnout (emotional exhaustion and cynicism) and work engagement were related to career satisfaction and career turnover intention.

Appendix 2 Empirical studies (n = 44) concerning nurses' intention to leave the profession (updating Paper I)

Author(s), Year, Country, Design	Aim of the study	Sample, setting	The main results
Mariani (2012), United States, cross-sectional questionnaire survey	To investigate: (1) the effects of mentoring on career satisfaction and intent to stay in nursing, (2) the relationship between career satisfaction and intent to stay in the profession.	173 RNs working in clinical practice, education, administration, and research.	There was a weak correlation between career satisfaction and intent to stay in nursing. Mentoring was not associated with intent to stay in nursing.
Salminen (2012), Finland, cross-sectional questionnaire survey	To study RNs intentions to leave the nursing profession and intentions to retire early.	747 RNs working in public university hospitals.	Main factors that increased the likelihood of intentions for occupational turnover were: (1) young age, (2) low job satisfaction, (3) low organizational commitment, (4) low work ability and (5) skills in balance with or above present work demands.
Rudman & Gustavsson (2012), Sweden, prospective longitudinal survey study (LANE)	To prospectively monitor study burnout development as well as student and occupational outcomes across all years in higher education and after graduation.	1,702 nursing students/graduates (follow-up after graduation).	Increased disengagement was associated with intention to leave the profession. Earlier development of study burnout was related to higher occupational turnover intentions.
Wang et al. (2012b), China, descriptive correlation design, questionnaire survey	To investigate job satisfaction, occupational commitment and intent to stay among RNs in mainland China.	560 RNs working in four large hospital facilities.	Younger RNs and RNs in a lower position had less intention to stay in nursing. Occupational commitment and job satisfaction were associated with intention to stay in the profession.
Lavoie-Tremblay et al. (2011), Canada, cross-sectional questionnaire survey	To study which domains of the nursing practice work environment influence the intent to leave a job among Generation Y nurses.	145 nurses (90 had attended a college-level nursing program, 50 were attending or had graduated from a university program, and one had a master's degree).	No difference was found between new nurses from Generations Y and X in terms of intentions to leave the nursing profession. Nurses' intention to leave the profession was associated with: (1) nurse participation in hospital affairs, (2) nursing foundations for quality care, (3) nurse manager ability, (4) leadership and support of nurses and (5) collegial nurse-physician relations.
Li et al. (2011), seven European countries, longitudinal cross-national exploratory survey (NEXT)	To investigate whether reward frustration at work predicted intention to leave the nursing profession.	6,469 RNs working in hospitals.	Reward frustration at work was associated with intention to leave nursing profession.
De Milt et al. (2011), United States, cross-sectional questionnaire survey	To investigate differences in nurse practitioners job satisfaction based on their intent to leave current positions and the nursing profession.	254 Nurse practitioners (NP).	Only a small number of NPs were considering leaving the profession (n = 14), therefore no further analyses were undertaken.
Zeytinoglu et al. (2011), Canada, cross-sectional questionnaire survey	To investigate the association between flexible employment and intention to leave the profession.	1,396 nurses employed in teaching hospitals.	Perceived job insecurity and low support at work were associated with intention to leave the profession.
Rudman & Gustafsson (2011), Sweden, prospective longitudinal survey study (LANE)	To investigate early-career burnout among newly graduate nurses (NGNs).	1,155 NGNs belonging to the national sample.	Changes in nurses' burnout levels were accompanied by concurrent changes in depressive symptoms, which was associated with the intention to leave the profession.
DiMattio et al. (2010), United States, cross-sectional, comparative descriptive pilot study	To investigate how long baccalaureate nurses stay in hospital nursing and why these nurses might leave hospital nursing.	390 graduate nurses (average age 34 years, baccalaureate level education).	(1) A desire for a career change, (2) feelings of under appreciation, (3) lack of respect with too many responsibilities and (4) a fear of liability were all reasons that graduate nurses reported for being interested in a non-nursing graduate degree.
Derycke et al. (2010), Belgium, a prospective questionnaire-based design (NEXT)	To analyse the impact of the effort-reward imbalance model on intent to leave an organization and intent to leave the nursing profession.	1,531 nurses mean (RNs, specialized RNs, nursing aides) (age 38.4 years).	Effort-reward imbalance was associated with intent to leave the profession among nurses.

Appendix 2 Empirical studies (n = 44) concerning nurses' intention to leave the profession (updating Paper I)

Author(s), Year, Country, Design	Aim of the study	Sample, setting	The main results
Eley et al. (2010), Australia, a quantitative cross-sectional cohort study	To investigate RNs' and enrolled nurses' reasons for departure from a job and the profession.	259 RNs and enrolled nurses employed in the public health services and 272 students enrolled in a Bachelor of Nursing degree program.	For RNs, the following reasons were mentioned considering leaving nursing: <ul style="list-style-type: none"> • disillusionment with nursing, • retirement.
Estryn-Behar et al. (2010), ten European countries, longitudinal cross-national exploratory survey (NEXT)	To compare nurses who were prematurely leaving health-care employment and those who stayed in health-care employment at a European level.	23,517 nurses who stayed in their health-care organization and 1,526 nurses who left their health-care organization.	Almost all of the nurses left the profession on a voluntary basis. Intention to leave the profession was associated with actual occupational turnover.
Fitzpatrick et al. (2010), United States, cross-sectional questionnaire survey	To investigate the relationship between American Association of Critical-Care Nurses' (AACN) certification, empowerment, and intent to leave the profession.	6,589 AACN members working in critical care units.	Nurses who had no intention to leave the profession had higher empowerment scores.
HRSA (2010), United States, cross-sectional questionnaire survey	To investigate and describe the current situation of the United States' RN workforce.	33,549 RNs.	The youngest and the oldest age groups of RNs had the highest intention to leave the profession.
Jourdain & Chenevert (2010), Canada, cross-sectional questionnaire survey	To investigate the relationship between RNs' burnout and intention to leave the nursing profession.	2,175 unionized RNs working in the Canadian public health-care sector.	Emotional exhaustion and depersonalization were linked to psychosomatic complaints and professional commitment, which are in turn associated with an intention to leave the profession.
Kuokkanen et al. (2010), Finland, cross-sectional questionnaire survey	To examine the ethical problems experienced by RNs and the factors associated with these problems.	551 RNs in hospitals and out-patient care institutions.	Experiencing ethical problems was associated with a higher intention to leave the profession.
Li et al. (2010), China, longitudinal exploratory survey (Chinese NEXT study)	To investigate RNs' psychosocial work characteristics and intent to leave the profession.	3,088 RNs participated in baseline measures, 1,521 RNs were included in the prospective follow-up analysis.	High emotional demands, low meaning of work, low predictability, low commitment to the workplace, low job satisfaction and low possibilities for development were the strongest psychosocial work characteristics related to the intention to leave nursing.
Rudman et al. (2010), Sweden, observational longitudinal design, questionnaire survey, (LANE)	To investigate graduate nurses' health, professional competence, patterns of employment and intention to leave the nursing profession.	4,306 graduate nurses completed the baseline questionnaire. A total of 24.5% of the 2006 cohort were under 29 years old.	Younger nurses more often considered leaving the profession; 3% of graduates had actively applied for positions outside the profession among the 2006 cohort.
Simon et al. (2010), Germany, longitudinal cross-national exploratory survey (NEXT)	To investigate variables associated with: (1) the intention to leave the profession, and (2) the intention to leave the organization, and how these related variables differed between intentions.	2,119 RNs in 71 departments of 16 hospitals	Professional commitment, job satisfaction, burnout and age were all variables associated with intention to leave the profession. Different variables (with dissimilar strengths) were associated with intent to leave the profession and intent to leave the organization.
Van Bogaert, et al. (2010), Belgium, cross-sectional questionnaire survey	To study impacts of practice environment factors and burnout on job outcomes. To investigate nurse assessed quality of care in acute hospital nurses.	546 staff nurses working in 17 medical, 17 surgical and eight intensive care units.	Nurses' emotional exhaustion and personal accomplishment were predictors of nurses' turnover intentions.
Van der Heijden et al. (2010), eight European countries, longitudinal cross-national exploratory survey (NEXT)	To investigate the impact of social support from direct supervisor and close colleagues on RNs' intention to leave the profession.	17,524 RNs working in hospitals.	Job satisfaction and social support from the direct superior as well as close colleagues appeared to contribute negatively to the intention to leave the profession.

Appendix 2 Empirical studies (n = 44) concerning nurses' intention to leave the profession (updating Paper I)

Author(s), Year, Country, Design	Aim of the study	Sample, setting	The main results
El-Jardali et al. (2009), Lebanon, cross-sectional questionnaire survey	To investigate the impact of job satisfaction on RNs' intention to leave a hospital, profession and the country.	1,793 RNs working in hospitals.	Younger nurses were more willing to leave the hospital and the country. Low job satisfaction was associated with nurses' intent to leave the hospital and the country.
Laine et al. (2009), 10 European countries, cross-national exploratory survey (NEXT)	To investigate job insecurity in relation to RNs' intention to leave the profession.	32,037 RNs working in hospitals, nursing homes, home care, and outpatient care institutions.	Nurses' concerns about being unable to work and the concern about the qualitative aspects of job correlated positively with intent to leave the profession in most of the 10 countries.
Van den Heijden et al. (2009), The Netherlands, longitudinal exploratory survey (NEXT)	To examine potential predictors of RNs' and nurses' intention to leave the profession.	753 RNs working in nine different hospitals, 183 nurses working nursing homes, and 251 nurses working in home care institutions.	Occupational commitment and job satisfaction were positively associated with nurses' intention to leave the profession. Work-to-home interference was negatively associated with nurses' intention to leave the profession.
Estryng-Behar et al. (2008), ten European countries, longitudinal cross-national exploratory survey (NEXT)	To compare the nurses' responses regarding violence, its predictors and its outcomes.	13,537 nurses working in hospitals, nursing homes, home care, and outpatient care institutions.	Factors associated with intention to leave the profession were: <ul style="list-style-type: none"> • violence, • being a specialist nurse, male or younger.
Scott et al. (2008), United States, cross-sectional survey study	To investigate the influence of personal factors, orientation, continuing education, and staffing shortage on satisfaction and intent to leave the profession.	A total of 329 newly licensed nurses with BSN and ADN/ diploma education (mean age 29 years).	The only factor associated with intention to leave the profession was career dissatisfaction.
Hasselhorn et al. (2008), eight European countries, longitudinal cross-national exploratory survey (NEXT)	To investigate the impact of job strain on RNs' intention to leave their profession.	11,606 RNs working in hospitals, nursing homes, home care, and outpatient care institutions.	Prospective association was found between job strain and RNs' consideration of leaving the profession.
Kankaanranta & Rissanen (2008), Finland, cross-sectional survey study	To study how different factors (e.g. demographic, wage and workplace) were associated with RNs' intentions to switch from health care to non-health care roles.	2,866 RNs working mainly in the health-care sector.	Monotonous work, excessive duties, dissatisfaction with wages and dissatisfaction with the share of income from shift work were associated with RNs' intentions to leave the health-care sector. Possibility for specialization and a good community decreased the intention to change work sector.
Widerszal-Bazyl et al. (2008), six European countries, cross-national exploratory survey (NEXT)	To test the explanatory power of the Demand-Control-Support model in relation to intent to leave nursing, with employment opportunities taken into consideration.	16,052 female nurses working in hospitals with different educational backgrounds and positions.	Younger nurses, nurses with fewer children, those with a temporary employment contract, or those with higher education had a higher intention to leave nursing. Control and social support were more strongly related to intent to leave nursing: (1) in countries with low unemployment rate and (2) among individuals with high perceived employment opportunities.
Lavoie-Tremblay et al. (2008), Canada, cross-sectional survey study	To compare young RNs' perceptions of the psychosocial work environment with two groups of RNs (intending to quit/ having quit the profession).	309 RNs. Mean age 22.6 years.	Main factors associated with intention to leave the profession included: <ul style="list-style-type: none"> • significant effort/reward imbalance, • high psychological demands, • elevated job strain.
Chang et al. (2007), Taiwan, cross-sectional survey study	To investigate the reciprocal relationship between organizational and occupational turnover intention among nurses.	177 nurses working in hospitals; approximately 80% of nurses were 20–30 years old (mean age 29.88).	Affective occupational commitment was the strongest predictor to occupational turnover intention. Normative organizational commitment was indirectly reducing employee occupational turnover intention.
Enberg et al. (2007), Sweden, cross-sectional survey study	To study perceptions of new graduates towards health-care work and preferences for future careers.	840 graduate nurses (80%), occupational therapists (11%) and physiotherapists (9%); mean age 32 years (range 23–55 years).	The majority of graduate nurses (79%) who were negative or uncertain about their career choice had also considered leaving their profession.

Appendix 3 Measures concerning intention to leave the profession (updating Paper I)

Authors, Year	Questionnaire/Instrument(s)/Scales used	Measures concerning intention to leave the profession
Gurková et al. (2013)	McCloskey/Mueller Satisfaction Scale (MMSS).	Nurses were asked to rate how often they considered leaving their actual workplace, the nursing profession and working abroad. Scales ranging from 0 ('never') to 4 ('very often').
Heinen et al. (2013)	Nursing Work Index Revised (PES-NWI), Maslach Burnout Inventory (Emotional Exhaustion Scale), Perception of Quality of Care (1 item), Perception of Patient Safety (1 item).	Nurses were asked if they intended to leave their job in the next year due to job satisfaction. If response was affirmative, nurses were asked to differentiate between leaving the hospital and leaving the profession.
Lee et al. (2013)	The Chinese version of the Quality of Nursing Work Life scale (C-QNWL), a three intent to leave item scale questionnaire, and a demographic questionnaire for individual- and work-related variables.	Intent to leave profession was measured by one item: 'giving up nursing completely'. (1 = never, 2 = yearly, 3 = monthly, 4 = weekly and 5 = every day).
Mohamed & Mohamed (2013)	Intention to leave scale, Karasek job content scale.	Propensity to leave the profession.
Rudman & Gustavsson (2013)	Oldenburg Burnout Inventory (OLBI). Items concerning sex, age, burnout during nursing, education, occupational preparedness during nursing education and burnout during employment.	"1. I think a lot about leaving the profession, 2. I am actively looking for another job outside the nursing profession, and 3. I will leave the nursing profession as soon as possible." (1 = Strongly disagree, 5 = Strongly agree).
Unruh & Zhang (2013)	Survey questionnaire developed for the study.	Are thinking about leaving the nursing profession, intend to look for a new profession, intend to stay in nursing for a long time, plan to have a job that requires an RN license next year.
Clendon & Walker (2012)	Survey questionnaire was not described.	Consideration of leaving the nursing profession.
Derycke et al. (2012)	Questionnaires developed by the NEXT (Nurses Early Exit)–Study team.	Three items concerning intent to leave the current ward for another in the same organization, intent to leave the current organization and intent to leave the nursing profession to start a different kind of job.
Cortese et al. (2012)	44 items of Work Satisfaction Index, intent to leave measured with three different questions.	"Do you intent to give up nursing profession?"
Laschinger (2012)	Areas of Worklife Scale (AWS), Conditions for Work Effectiveness Questionnaire (CWEQ-II), Authentic Leadership Questionnaire (ALQ), Core Self-Evaluation (CSE).	4 items measuring career turnover intent.
Salminen (2012)	Organisational commitment scale, Work Ability Index, Development opportunities scale, The job control scale, job satisfaction question.	"How often have you thought about giving up nursing completely? (never, sometimes a year, sometimes a month, sometimes a week, every day)."
Hinno et al. (2012)	Nursing Work Index–Revised.	How often nurses have considered leaving their unit, organization or profession during the last 12 months (never considered at all, or considered monthly, weekly, daily or more often).
Rudman & Gustavsson (2012)	Oldenburg Burnout Inventory, Major Depression Inventory, Satisfaction with Life Scale, Questionnaire for Psychological and Social factors at work.	Occupational turnover intention scale (1 = fully agree to 5 = fully disagree).
Wang et al. (2012b)	Chinese Nurses Job Satisfaction Scale developed for this study (subscales: satisfaction with extrinsic rewards, scheduling, family/work balance, co-workers, interaction, praise/recognition and control/responsibility), Chinese version of the Occupational Commitment Scale, adapted Intent to Quit and Job Search Scales.	"I will consider leaving nursing profession in the future."
Milt et al. (2011)	The Misener NP Job Satisfaction Scale (MNPJSS), The Anticipated Turnover Scale (ATS).	Intent to leave nursing profession: in the next 1–11 months, in the next year, after 1 year but within 2 years, in 3–5 years.
Lavoie-Tremblay et al. (2011)	31-item practice environment scale of the nursing work index (PES-NWI).	Individual's intention to leave his or her employment or profession. Dichotomous items (yes/no).
Li et al. (2011)	Questionnaires developed by the NEXT (Nurses Early Exit) Study team. The effort–reward imbalance (ERI) questionnaire.	"How often during the course of the past year have you thought about leaving nursing?": (never, some times a year, some times a month, some times a week, every day).
Rudman & Gustafsson (2011)	Burnout inventory, questions concerning demographics and individual factors, lifestyle, health and stress, educational outcome.	Intention to quit: "I often think about leaving the profession or health care" (yes vs. no).
Zeytinoglu et al. (2011)	Items measuring support at work, subjective flexible employment, work and individual characteristics.	"I am seriously considering leaving the nursing profession in the near future."

Appendix 3 Measures concerning intention to leave the profession (updating Paper I)

Authors, Year	Questionnaire/Instrument(s)/Scales used	Measures concerning intention to leave the profession
Derycke et al. (2010)	Effort-reward imbalance (ERI) measured by a 23-item questionnaire.	ITL profession was measured by three items: 'How often do you think about': (1) further qualification outside nursing; (2) giving up nursing; (3) giving up nursing and starting a different kind of job.
Estryn-Behar et al. (2010)	Questionnaires developed by the NEXT (Nurses Early Exit) Study team.	"How often during the course of the past year have you thought about leaving nursing?" (never, some times a year, some times a month, some times a week, every day).
DiMaggio et al. (2010)	A survey of demographics and practice patterns was designed for this study. Practice Environment Scale of the Nursing Work Index (PES-NWI).	Nurses were asked if they intended to leave the hospital within the next 3–5 years, and reasons for their intentions to leave. Nurses were also asked their reasons for pursuing graduate education in either nursing or another discipline.
Jourdain & Chenevert (2010)	Survey questionnaire developed for this study. Examples of scales: quantitative overload scale, work interference with family scale and hostility from physicians and patients scale.	Three items concerning intention to leave the profession developed by Meyer et al. (1993) and adapted for an agreement–disagreement scale.
HRSA (2010)	National Sample Survey of Registered Nurses (NSSRN), 72 items concerning demographics, education, employment and intentions regarding nursing work.	"Do you plan to leave or have you left the principal nursing position you held on March 10, 2008?" If 'yes': Do you plan to work in nursing after you leave that position?
Li et al. (2010)	The Copenhagen Psychosocial Questionnaire (COPSOQ), a psychosocial work environment measure.	"How often during the course of the past year have you thought about leaving nursing?" (Never, some times/year, some times/month, some times/week, every day).
Eley et al. (2010)	Survey questionnaire developed for this study. Items including; age, sex, nurse designation, main job, length of time as a nurse and anticipated time in nursing.	Nurses were asked to identify up to three of nine offered factors that would influence them to leave nursing.
Fitzpatrick et al. (2010)	The Conditions of Work Effectiveness Questionnaire revised.	Two questions concerning intent to leave their current position and intent to leave the nursing profession. If nurses answered yes to either of the intent-to-leave questions, they were asked to indicate the time frame for their intent to leave.
Kuokkanen et al. (2010)	Questionnaire developed for this study: demographics and items concerning ethical problems in nursing work.	Willingness to remain in the nursing profession (yes/no).
Li et al. (2010)	Short version of the Copenhagen Psychosocial Questionnaire (COPSOQ). A psychosocial work environment index developed for this study.	"How often during the course of the past year have you thought about leaving nursing?" (Never, some times/year, some times/month, some times/week, every day).
Rudman & Gustavsson (2010)	Major Depression Inventory, Oldenburg Burnout Inventory, Life Satisfaction scale, Nordic Questionnaire of Psychosocial factors at work, items of the National Survey of Student Engagement.	Reasons (and/or intentions) for leaving a position or the profession.
Simon et al. (2010)	Questionnaires developed by the NEXT (Nurses Early Exit) Study team.	"How often during the course of the past year have you thought about giving up nursing completely?" (Never, some times/year, some times/month, some times/week, every day).
Van Bogaert et al. (2010)	The Revised Nursing Work Index, Maslach Burnout Inventory.	Intention to stay in nursing.
van der Heijden et al. (2010)	Questionnaire developed by the NEXT (Nurses Early Exit) Study team.	"How often are you thinking of leaving the nursing profession?" (Never, some times/year, some times/month, some times/week, every day).
Laine et al. (2009)	Questionnaires developed by the NEXT (Nurses Early Exit) Study team.	"How often during the course of the past year have you thought about giving up nursing completely?" (Never, some times/year, some times/month, some times/week, every day).
El-Jardali et al. (2009)	McCloskey Mueller Satisfaction Scale, items concerning demographic characteristics and intent to leave.	Plans to leave the job within the next 1 to 3 years and potential plans after leaving.
van der Heijden et al. (2019)	Questionnaires developed by the NEXT (Nurses Early Exit) Study team.	"How often during the course of the past year have you thought about giving up nursing completely?" (Never, some times/year, some times/month, some times/week, every day).
Estryn-Behar et al. (2008)	Questionnaires developed by the NEXT (Nurses Early Exit) Study team.	"How often do you think of leaving the nursing profession?" (Never, some times/ year, some times/month, some times/week and every day).
Lavoie-Tremblay et al. (2008)	The Job Content scale, the Job Strain scale, the decision latitude scale, the psychological demands scale, social support from superiors scale.	Intent to quit the nursing profession/No intent to quit the nursing profession.
Hasselhorn et al. (2008)	Questionnaires developed by the NEXT (Nurses Early Exit) Study team.	"How often during the course of the past year have you thought about leaving nursing?" (Never, some times/year, some times/month, some times/week, every day).

Appendix 3 Measures concerning intention to leave the profession (updating Paper I)

Authors, Year	Questionnaire/Instrument(s)/Scales used	Measures concerning intention to leave the profession
Kankaanranta & Rissanen 2008	Questionnaire developed for the study; items measuring sociodemographic variables and variables in relation to, work, satisfaction, dissatisfaction and intent to leave.	Nurse's likely working organization in the year 2010. Response categories: 0 = in the health-care sector, 1 = outside the health-care sector.
Scott et al. (2008)	Survey instrument developed for this study; items concerning job satisfaction, career satisfaction and intent to leave current position/profession.	Intent to leave nursing (≥ 3 or < 3 years).
Widerszal-Bazyl et al. (2008)	Questionnaires developed by the NEXT (Nurses Early Exit) Study team.	"How often during the course of the past year have you thought about . . .?" (1) "a further qualification outside nursing?" (2) "giving up nursing?" (3) "giving up nursing and starting a different kind of job?"
Chang et al. (2007)	Organizational commitment scale, Occupational commitment scale (both Meyer's), items concerning organizational and occupational turnover intention.	"I frequently thought about getting out of nursing" (1 = strongly disagree to 7 = strongly agree).
Enberg et al. (2007)	Questionnaire developed for this study (measuring working conditions, satisfaction and career preferences).	Nurses were asked about their preferred working area in 5 years' time.