

Preferences for working with people with dementia in undergraduate and newly qualified healthcare professionals

Molly Roseanne Hebditch

M.R.H

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Abstract

Background: With population ageing, an emergent issue in workforce planning is how to ensure that future healthcare professionals are both competent and willing to work with older adults with complex needs. This includes dementia care; which is widely recognised as a policy and practice priority. Yet research suggests that working with older people is unattractive to undergraduate healthcare students. However, how students view a career working with people with dementia is not well understood, in either related specialties (such as geriatrics or old age mental health) or as a general clinical interest. This thesis explores the factors associated with preferences for working with people with dementia.

Method: A sequential mixed-method design was used to develop a conceptual framework for understanding career preferences for working with people with dementia in student and newly qualified nurses and doctors. The framework was derived through the integration of the results from three sub-studies. First, a systematic review was conducted, including 62 papers on the factors associated with preferences of nursing and medical students for working with people with dementia and older adults. Second, a quantitative analysis (n=840) of longitudinal survey data on career preferences was performed. Third, qualitative interviews (n=27) were conducted with newly qualified healthcare professionals and analysed using grounded theory.

Results: A conceptual framework for understanding preferences is presented and indicates that the key factors related to dementia preferences include: student characteristics (e.g. gender, attitudes and knowledge) and whether students perceive their attributes are aligned with dementia care; the impact of experiences including dementia educational programmes; the importance of making a difference to patients' lives; the perception of working with people with dementia as a 'different type of care'; perceptions of people with dementia including care challenges; and career characteristics.

Conclusion: This thesis is the first study of career preferences for working with people with dementia in healthcare students in the UK. It adds to the literature by presenting a conceptualisation of these preferences that provides both a framework

for future research of career preferences and recommendations for undergraduate education in dementia.

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Abbreviations

ADKS: Alzheimer's Disease Knowledge Scale

ADQ: Approaches to Dementia Questionnaire

BSMS: Brighton and Sussex Medical School

DAS: Dementia Attitudes Scale

DKS: Dementia Knowledge Questionnaire

FY1 and FY2: Foundation years 1 and 2 in medical student training

HEE: Health Education England

HEI ('s): Higher Education Institution (s)

JSE: Jefferson Scale Empathy

LTC: Long-term care

MCRS: Medical Condition Regard Scale

MM: Mixed Methods

MMAT: Mixed methods appraisal tool

MM-GT: Mixed Methods- Grounded Theory

OAP: Old age psychiatry

QoL: Quality of life

QUAL: Shorthand for Qualitative

QUANT: Shorthand for Quantitative

SS1: Sub-study 1, 2, 3 etc.

TFD: Time for Dementia

TPB: Theory of planned behaviour

UEA: University of East Anglia

UoB: University of Brighton

UoS: University of Surrey

Key terms

Career pathways: the key choices and steps within medical and nursing progression through training and in practice.

Clinical interests: particular clinical areas of interests in the broadest sense; this could relate to preferred patient populations to work with, interest in a particular pathology/disease or clinical technique.

Recognised specialties: regulated, accredited courses leading to recognised status as a specialist in a clinical area or field. For doctors, this includes registered specialties with professional bodies, for nurses, this includes recognised professional roles such as district nurse, community mental health nurse, or gerontological nurse practitioner or specialist posts such as Admiral Nurse or memory clinic nurse.

Career choice: the preferred (first choice) recognised specialties of students, including registered specialties or recognised clinical roles.

Career preferences: within this thesis, these relate to preferences that individuals have for recognised specialties or clinical interests, including patient populations, settings or clinical features. Preferences may be positive or negative and assumed to be relative.

Career preferences related to working with people and dementia: preferences for recognised specialties with substantial work with people with dementia or a clinical interest in working with people with dementia. In this thesis 'career' is often dropped as preferences are referring to careers throughout and 'dementia preferences' is used as shorthand to refer to 'career preferences related to working with people and dementia'.

Mentors: in this thesis, this encompasses mentors, practice or academic preceptors, practice leads and tutors.

Placements: all educational training experiences in the clinical environment for medical and nursing students in training, commonly referred to as rotations in medical students or practice placements in nursing.

Patients with dementia: the preferred term is 'people with dementia'. However to make the distinction between doctors and nurses preferences or attitudes towards people with dementia in general and in the context of working with people with dementia as a healthcare professional, the term patients with dementia is used when appropriate.

Key people

MH: Molly Hebditch, BSMS. Doctoral researcher.

SD: Dr Stephanie Daley, BSMS. First supervisor. Specific research roles include the third reviewer for systematic review and qualitative supervision.

JW: Professor Juliet Wright, BSMS. Second supervisor.

SB: Professor Sube Banerjee, University of Plymouth. Third supervisor.

JS: Dr James Scott. BSMS. Second reviewer for the systematic review.

GS: Gina Sherlock. BSMS. Second reviewer for the systematic review, Secondary researcher on the content analysis in SS2.

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Finally, I dedicate this to my namesake, Molly Hebditch, my grandmother, who has given me so much, including inspiring my interest in dementia research.

Author's declaration.

I declare that the research contained in this thesis, unless otherwise formally indicated within the text, is the original work of the author. The thesis has not been previously submitted to this or any other university for a degree, and does not incorporate any material already submitted for a degree.

Signed:



Dated: 05/11/2020

1 Chapter 1 Introduction

1.1 Background

Career preferences are an expression of students' intentions to pursue certain careers or interest to work with specific patient groups or in particular settings. The term preference has a dualistic meaning; students may have a positive or negative preference. Research demonstrates that early experiences and training can shape preferences of healthcare professionals to working with certain patient groups (Neville et al., 2014, Cleland et al., 2014) and that preferences formed during undergraduate training may affect career choice (Cleland et al., 2014, Barshes et al., 2004). Career preferences have therefore been investigated as a means of understanding and utilising the opportunity of training to influence preferences as part of workforce planning. Workforce planning is integral to delivering healthcare services and particularly for underserved populations. The preliminary definition of 'career preferences for working with people with dementia' used here is of preferences towards careers which have a substantial component of the overall clinical workload with dementia (a recognised specialty) or preferences towards working with people within dementia within their choice of career (a clinical interest)

Dementia is the name given to a syndrome caused by diseases of the brain, the most common form being Alzheimer's disease. Symptoms include impairment of cognitive, behavioural, and physical functioning that is progressive and has a wide-ranging and significant impact on daily functioning (Department of Health, 2009). There is no curative treatment. While dementia may affect people across the lifespan, age is the most significant risk factor (World Health Organization, 2017); one in six people over the age of 80 is estimated as having dementia (Prince et al., 2013).

Career preferences of undergraduate and newly qualified healthcare professionals in relation to dementia are important to understand. The numbers of those affected are high; 850,000 people are estimated to have dementia in the UK (Prince et al., 2013). Globally, numbers of those with dementia are expected to reach 75 million by 2030 (World Health Organization, 2017). Dementia care will play a large part in any clinical role with older adults. People with dementia access a wide range of health services in the community, hospital, and long-term care. This is especially given that multiple comorbidities are associated with older age (Banerjee, 2015,

Barnett et al., 2012). Therefore, a large majority of healthcare professionals are likely to work with people with dementia regardless of their specialty or healthcare setting.

Improvement in dementia care has been identified as a priority due to it being underdiagnosed and poorly understood by both healthcare professionals and the wider community (Alzheimer's Disease International, 2019, World Health Organization, 2017). Health care systems have been underprepared for the growing number of people with dementia in need of specialist care and are now seeking to change to meet this challenge.

This challenge for healthcare services is recognised globally (World Health Organization, 2017). In the UK, this is acknowledged in government policy by the National Dementia Strategy (Department of Health, 2009) and more recently the Prime Minister's Challenge on Dementia (2015). This has resulted in key changes, such as Health Education England (HEE) mandating dementia education in the undergraduate curriculum of all healthcare professionals (Department of Health, 2013).

In addition to competency, the willingness and intent of healthcare professionals to engage with this patient group is integral to the delivery of good quality care. Current literature highlights serious issues of recruitment and retention in medical and nursing specialties related to working with older people and people with dementia (Meiboom et al., 2015b, Chenoweth et al., 2010, Neville et al., 2014). Furthermore, research suggests that careers working with older adults are least favoured for medical (Meiboom et al., 2015b) and nursing students (Neville et al., 2014, Garbrah et al., 2017, Sizer et al., 2016), with some indications that dementia care is also unpopular (Chenoweth et al., 2010, McKenzie and Brown, 2014).

In conclusion, preferences need to be understood for workforce planning. Both in terms of the number of healthcare professionals choosing to work in relevant specialised fields but also, in more general areas, to understand the interest in engagement with these patients and their specific needs. Furthermore, due to the magnitude of this issue, it is important to review the role of Higher Education Institutions (HEIs) in this task.

Currently, there is a paucity of research on preferences for working with patients with dementia. The purpose of this thesis is to explore the factors underlying preferences for working with patients with dementia in undergraduate and newly qualified healthcare professionals and to provide a conceptual framework for understanding them and changing them.

1.1.1 Note on scope of thesis

The focus of this thesis is the investigation of nursing and medical students and as such, they will be referred to jointly as healthcare students. The rationale for looking at these two student groups is that the preference for working with people with dementia is a joint and prominent concern for both areas of undergraduate healthcare professions, with older adult specialties being considered least favourable by both, and both professions recently undergoing changes in relation to their curriculum concerning dementia. Moreover, current literature suggests that influencing factors are similar for both medical and nursing students.

Therefore, the intent of this thesis is to identify what factors affect preferences for both medical and nursing students. However, it is acknowledged that their training pathways and therefore, career choices and timeframes in making choices are distinct. Accordingly, this research will employ different methods where necessary and the thesis will be split by these two student groups when necessary to offer clarity. The aim of the thesis is not to conduct a comparative study of medical and nursing students, but overall similarities and differences will be presented and explored.

It is also of note that the primary research in this thesis took place in the context of the UK healthcare system. Whilst international research was reviewed, and comparisons to an international context are made, it is recognised that the findings need to be interpreted in terms of the UK specific system of training and career choices.

1.1.2 Research setting and doctoral researcher

This research was nested in a large multi-faceted programme of research evaluating the Time for Dementia Programme (TFD). TFD is an innovative educational intervention that aims to enhance dementia education and increase positive attitudes to, knowledge about, and empathy for people with dementia (Banerjee et al., 2017). TFD involves healthcare students being paired with a family affected by dementia and visiting them over two years, with the person with dementia and the family carer being the teachers. The doctoral researcher was a research assistant on this programme from 2015 until 2017 and started her PhD in 2018. Working as a research assistant on TFD for three years, the doctoral researcher was responsible for data collection and data entry that has been used in Sub-study 2.

In this thesis, the doctoral researcher was responsible for:

1. Designing, assessing data, and undertaking the narrative synthesis in the systematic review in sub-study 1.
2. Further data collection beyond the scope of the TFD main study (T5), and planning, and undertaking the analysis in sub-study 2.
3. Designing, undertaking the data collection, and analysis in sub-study 3.
4. Producing the conceptual framework.

The doctoral researcher developed an interest in career preferences during her time as a research assistant on TFD. Further exploration of the literature revealed a paucity of relevant literature on student preferences for working with people with dementia. Therefore, a larger investigation of preferences was identified as needed, and the thesis project was developed. The doctoral researcher has continued interest in improving services for people with dementia. This has been a focus throughout her experiences while working at Alzheimer's society as a support worker in the community and through projects completed during her psychology BSc and Masters in research methods for psychology.

A list of presentations and publications from this thesis is presented in Appendix A.

1.2 Structure of the thesis

This thesis presents three sub-studies in a sequential mixed methods design and therefore is structured to reflect the progressive nature of the study. After the introduction, the overall methodology is outlined, followed by each sub-study in turn, concluding with the overall integration of results, and discussion.

Chapter 1, this introduction chapter, provides background information and summarises the scope of the thesis. It outlines the contextual literature and the rationale for this study. The aim of the thesis and its objectives are specified.

Chapter 2 outlines the overall methodology for the thesis including the rationale for the use of mixed methods and philosophical assumptions. This includes a description of the sequential mixed method design used, and how the three sub-studies are integrated.

The next three chapters detail each sub-study in turn including background, objective, methods, results, and discussion. For each sub-study, its objective is broken down into the individual research questions addressed.

Chapter 3 presents a systematic review of preferences of nursing and medical students for working with people with dementia and older adults.

Chapter 4 presents a longitudinal investigation of career preferences in undergraduate nursing and medical students.

Chapter 5 presents a qualitative study exploring the factors influencing undergraduate and newly qualified healthcare professionals' preference towards working with patients with dementia.

Chapter 6 outlines the findings of the mixed method integration and presents the conceptual framework, summarising its development and discusses its broader implications.

Chapter 7 provides a summary of the overall results and associated recommendations. The chapter evaluates the strengths and limitations of the thesis as well as its contribution to the literature.

1.3 Literature Review

This literature review aims to establish the context and rationale for this thesis. It argues why it is important to look at the career preferences of healthcare students in relation to dementia, and draws upon existing literature to inform the research questions of the thesis. It seeks to outline the key concepts of the thesis and to ground it in the current context of workforce planning in the UK. This literature review aims to answer three main questions:

- I. What is the definition of career preferences for working with people with dementia in medical and nursing students?
- II. Why is it important to understand career preferences in relation to working with people with dementia?
- III. What is already known about the factors associated with career preferences for working with people with dementia?

These questions guided the search strategy used, leading to three main components. First is an exploration of policy, regulations, and practice concerning health careers and career preferences. Second, the empirical literature on career preferences in healthcare students was reviewed. Third, policy and practice related to working with people with dementia and empirical studies were identified. The websites and publications of relevant government and regulatory bodies were searched for guidance and policy related to workforce planning or career structures or dementia.

1.3.1 What is the definition of career preferences for working with dementia in medical and nursing students?

This section outlines the career pathways of medical and nursing students and defines the terms 'career preferences' and 'careers working with people with dementia'.

Careers in nursing and medicine

The term career in this section is used to refer to the main post-graduate training choices and progression points through medical and nursing professions. The term career can have different meanings at an individual and group level and the definition of a career is complex. However, there are some clear progression pathways and training routes within medicine and nursing. Therefore, medicine and nursing career pathways are outlined here to give context to the preferences that students have and the choices they can make. While they are different professions, there are similarities regarding career pathways. First, both professions require undergraduate training leading to registration with a professional body and further training leading to specialisation. These specialties may relate to settings (e.g. general practitioner, community nursing etc.) or clinical features (e.g. neurology, palliative care etc.)

Second, the NHS is the main employer of both. The NHS (taken as an aggregate of its constituent NHS Trusts, primary care, and other service providers) is the single largest employer of doctors and nurses in the UK, with over 1,200,000 staff, with 37.1% being doctors or nurses and health visitors (NHS Digital, 2018). The Department of Health and Social Care (DHSC) and associated bodies are responsible for both nursing and medicine training and planning. Health Education England (HEE) supports and delivers training for all healthcare professionals, including medicine and nursing, and delivers over 100 different programmes focused on recruitment, training and planning, and commissioning (Health Education England, 2017).

Third, both professions have the ultimate goal of improving the health of the public and because their work is governed by the same bodies (e.g. DHSC and HEE), even if they have different regulators, the Nursing and Midwifery Council (NMC) for nursing and the General Medical Council (GMC) for medicine, there are often

parallel policies for both professions. For example, both professions have undergone extensive changes as a result of the modernising healthcare careers programme including the *Shape of Training* (Greenaway, 2013) and *Shape of Caring* (Willis, 2015) reviews, driven by many of the same concerns, including a change in patients' needs.

Nursing careers

To practice as a nurse, you must be registered on the NMC register. The NMC is the regulatory body for nursing and midwifery in the UK. Depending on the route of entry, training is in the form of a full-time degree (2-3 years minimum) or a part-time degree. The routes to access a pre-registration nursing course are diverse. The most common form is an undergraduate degree, but masters degrees are available as are routes through Nursing Associate apprenticeships with a two year top-up to Registered Nurse status.

There are four overarching specialisms that a nurse can register: adult, mental health, child, and learning disability. Most undergraduate pre-registration courses provide training in one branch of nursing. Registered nurses may apply for dual registration after a further period of training. However, there has been a growing trend in 4-year dual registration programmes. These programmes allow students to finish their training as eligible to practice in two branches.

These four branches of nursing are diverse in the range of settings and clinical features that they may work with after registration, but they are defined by the type of patient by either age (child or adult) or central health issue (mental health or learning disability). In practice, the line between these branches is not always distinct, with some jobs being appropriate for multiple branches especially for mental health and adult nursing.

First Posts. It is acknowledged that first nursing posts can be a difficult transition, with students feeling 'reality shock': a feeling of being underprepared for the expectations of working nurse life (Wareing et al., 2017). In 2010, the preceptorship programme was introduced to ensure better support for newly trained nurses (Department of Health, 2010). Preceptorship is defined as a period of support and supervision for a newly qualified nurse. It aims to increase confidence and

independence and support skill and behaviour development at this crucial transition. NHS employers are encouraged to use the guidelines to offer a preceptorship programme.

Career progression. Nurses must continue to show ongoing learning through continuing professional development (CPD) and practice for a minimum number of hours to maintain registration with NMC; this process is called revalidation and is undertaken every three years. Nurses may wish to further specialise or move into senior positions. Examples of specialist roles, requiring postgraduate education, include district nursing, practice nursing, Advanced Practice Nurse (APN) and Clinical Nurse Specialists (CNS).

To help nurses understand their choices and career development opportunities The Modernising Nursing Careers (MNC) programme produced a careers framework (Rafferty et al., 2015). The MNC outlines five areas defined by clinical characteristics: mental health and psychosocial care; supporting long-term care; first contact access and emergency care; acute and critical care; family and public health. These areas can then be divided by the type of work; education, research, clinical and management. For example, a clinical role in supporting long-term care could include community nurse or residential care home nurse (entry-level role) or district nurse (with further training). However, nurse career progression may not always be linear in one field but lateral, moving between settings and patient populations (Willis, 2015).

Summary. Nursing students have several choices when considering their career. Firstly, the initial branch they may register. Then, as a qualified nurse, what area to work in as a staff nurse. This can be led by clinical features of groups such as acute and critical care or long-term conditions. Nurses then have a choice to pursue specialist training such as district nursing or a clinical specialty. Work may also be characterised as clinical, research, education or management focused.

Medical careers

Medical education has three distinct phases: medical school, foundation years, and further training pathways. During which time, they are referred to as medical students, foundation doctors and specialist registrars, respectively. From the end of

medical school until specialty registration, they are referred to as trainee doctors (or junior doctors) inclusively.

Medical school. Students commonly apply for medical school programmes after secondary education. Similarly to nursing, there are other entry routes or graduate entry programmes (where students already hold a degree) or medicine with a preliminary foundation year (for those not having the required A-level subjects).

Standard courses last a minimum of five years. Many students 'intercalate' which means that they take an extra year to complete an additional degree (e.g. a BSc or MSc), often linked to a specialty interest or used to explore academic or education opportunities (BMA, 2018).

All medical school curricula in the UK contain theory and practice components with the content being the responsibility of sovereign universities but powerfully shaped by national governmental bodies for health education: HEE in England, NHS Education for Scotland, The Northern Ireland Medical and Dental Training Agency (NIMDTA) and the All Wales Postgraduate Medical and Dental Education (The Wales deanery). The GMC sets standards for education and reviews the quality of the training delivered. However, the primacy of individual universities in curriculum development and delivery means that way that teaching is delivered at the 33 UK medical schools (General Medical Council, 2020) varies greatly including in structure (e.g. clinical/non-clinical divide) or teaching methods (e.g. problem-based/lecture-based).

Foundation training. Foundation training lasts for two years and is a doctor's first employed post, as a foundation doctor. The UK Foundation Programme Office (UKFPO) is responsible for setting the curriculum, based on guidance from the GMC, and is delivered by 20 foundation schools. The aim is to provide a wide set of skill and competencies to prepare doctors for independent patient care in a range of clinical contexts. In addition, it exposes trainee doctors to a range of settings to help inform their further career choice. Over the two years, foundation doctors usually undertake six rotational posts, primarily in hospital and medicine specialties. In 2017, It was agreed that all foundation doctors should have a community

placement including at least 45% having a psychiatric placement (UK Foundation Programme Curriculum, 2016).

Full registration is granted after the successful completion of foundation year one (FY1). This is required for proceeding into foundation year two (FY2). At the end of FY2 trainee doctors are eligible to apply for specialist training. Previously the majority of trainees moved from foundation training directly to specialty training, however, in the last few years, more students have opted to not to do this. In 2018 only 37.7% of foundation doctors continued straight into training, the lowest ever recorded, marking a continuing decline from 2011 (The UK Foundation Programme Office, 2019). Reasons for this vary, including leaving medicine, but taking a year out after FY2 before commencing specialty training is common (often referred to as an 'FY3' year). Trainee doctors who do not move onto specialty training at this point may continue to work in medicine, either as non-career grade doctors or as locums.

Postgraduate training pathways. The majority of medical graduates continuing to work in medicine long term will choose to enter into specialist or GP training (The UK Foundation Programme Office, 2019). These training programmes lead to specialist registration and a certificate of completion of training (CCT), which is required for appointment to a specialist consultant position, or to GP registration to enable a doctor to practice independently in general practice.

To register in a specialty, a doctor must undergo recognised training pathways. These differ between and even within specialties and have different timescales. Some pathways allow trainee doctors to choose their specialty from the start of post foundation training (run through training) or to start with a broader initial training (uncoupled training) with the ultimate specialty decided later on. Some specialties offer both uncoupled and run through routes. Therefore, trainee doctors may not have chosen a final destination specialty at the outset of their post foundation training (Conference of Postgraduate Medical Deans of the United Kingdom, 2018). A new uncoupled route, internal medicine training, was introduced in 2019 to replace core medical training. One of the reasons for this was to produce a workforce more suited to needs of the population of acute patients (i.e. older, comorbidities and complex presentations) and includes mandatory training in geriatric medicine,

critical care and outpatients (Joint Royal College of Physicians Training Board, 2019).

Summary. Career pathways for medical students and doctors are structured, complex and relatively long. After the initial 5-6 years of medical school, further training lasts between 4-8 years as a trainee doctor. Therefore, if no breaks are taken or change in specialty choice, training lasts from 9-14 years.

Students therefore make decisions during training that will culminate in their registered specialty. These choices include intercalation during their undergraduate degree and other elective experiences, and choice of foundation programme and elected choices within these. The majority of students, continuing in medicine, will then go onto choosing a specialty. They may elect to complete a run through programme, with the ultimate intention for a particular specialty, or an uncoupled programme, with or without a particular intended outcome. Within registered specialties individual doctors many have specific clinical interests. Also, like nurses, they may consider careers in teaching, management, or research.

Medical training pathways have been said to be rigid (Goldacre et al., 2010) in that each decision can preclude you from changing to another specialty, making it important to understand career aspirations and fit early on. Also, applying for specialty training is a competitive process, therefore students preferences are not the only factor in choosing a particular pathway, lack of success in applying due to lower assessed achievement may prevent students from pursuing their original intention (Goldacre et al., 2010).

Definition of career preferences for working with dementia

Within nursing and medicine, there are structured choices that students can make. Nurses choose a branch of nursing and then might choose to continue with postgraduate training for a particular specialism. Doctors choose the type of specialist training and specialties or subspecialty they wish to work in. Out of these choices, there are broader choices such as areas or settings they wish to work in or to take a particular interest in a clinical population. They may also choose a type of work to focus on: clinical, education, or research. For this thesis, these overall areas of interest and choices of specialisation are the focus of the term 'career

preferences', as opposed to practical aspects such as financial preferences or the location of a job.

Concerning the career 'preferences' literature, there is no consistent terminology. Preferences, choices and intentions, and willingness to pursue are often used interchangeably to describe students' affinity for careers. In this thesis, the term preference is used to relate to the broadest sense of interests. The term preference is chosen, rather than choice or intent, as this thesis aims to explore not only why people have a preference for, but also a preference against specific careers. It is therefore used as a bi-modal term. This is because it is valuable to understand the attraction of working with people with dementia as well as the reasons against.

There are also different ways preferences related to careers can be directed. They can be for a particular 'recognised specialty', defined in this thesis as a registered specialty in medicine or a particular nurse specialty post or professional role that requires further training, or a particular clinical role. Or preferences can be focused on what could be perceived as aspects of a career, such as a particular patient group or disease. This is termed 'clinical interests' within this thesis.

Careers working with people with dementia

The section below outlines what career preferences mean in terms of working with dementia for doctors and nurses. This is in terms of recognised specialties, registered specialties and professional roles or specialist posts that have substantial amounts of work with patients with dementia, and clinical interest: preferences related to working with people with dementia as a patient population.

Recognised specialties in dementia care

Career choice associated with working with dementia is defined as areas that work specifically with patients with dementia as the main focus of their role or as a major component. In these roles, it would be considered that healthcare professionals have specialist knowledge and training for working with this group of patients. For medical students, related registered specialties include geriatric medicine, old age psychiatry, and general practice (Alzheimer's Society, 2020).

Specific recognised specialty roles in nursing that may work with people with dementia include community mental health nurses or district nurses. There are also dementia specialist roles such as dementia matrons and Admiral Nurses. Admiral Nurses are specialist nurses who principally support carers of people with dementia, a service run by Dementia UK (Bunn et al., 2016). Specific clinical roles can cover dementia care services in a range of settings: mental health services, community mental health services, elderly care medicine, acute settings, NHS continuing care services, and work in social care settings such as care homes.

However, the structure of career choices and roles related to dementia is very diverse and key dementia healthcare professional roles may depend on localised services, therefore this is only an indication. Furthermore, services are constantly developing, in that roles of professionals are being expanded and clarified. For example, the primary healthcare professional responsible for the management of dementia in the UK is the GP. However, their role has been recently expanded to include further diagnostics and post-diagnostic support (Department of Health, 2015), what is more, this varies considerably in practice and is still under review (Department of Health, 2018). Internationally, there is major variation in which speciality takes the lead in dementia diagnosis and care and a need for clarity is recognised on which specific healthcare professionals are responsible for the diagnosis, treatment and management of dementia (Hallberg et al., 2016).

Clinical interest in working for people with dementia

Regardless of career choice, working with people with dementia is likely to form part of the role of most healthcare professionals, as 1 in 14 people over the age of 65 are estimated to have dementia, rising to 1 in 6 over the age of 80 (Prince et al., 2013). People with dementia make up a sizable proportion of healthcare users; it is estimated that 1 in 4 hospital beds are occupied by people with dementia (Alzheimer's Society, 2009), and that more than two-thirds of UK care home residents have dementia (Knapp et al., 2007), while two-thirds of those affected by dementia live at home and access community health services.

Previous research has shown students will have a relative preference for the type of patients they will work with (Carmel et al., 1992). Therefore, healthcare staff may have positive or negative preferences for working with people with dementia

whatever their career choice, namely how they think and feel about working with this patient group within their careers. This relates to interest and satisfaction of working with this patient group and could develop into more active clinical interest. For example, within many careers, there are opportunities to pursue advocacy or special interests for dementia. This could include developing a specialty interest as a GP or taking a lead for dementia care in non-specialist settings. The concept of dementia champions has evolved in recent years, and these are professionals who take an active role in driving changes or implementing schemes targeted at the improvement of dementia care in non-specialist settings, with examples in both nursing and medicine (Wilkinson et al., 2016, Banks et al., 2014).

Conclusion

This thesis explores career preferences in terms of preference for recognised specialties related to people with dementia but also as a clinical interest. This is because it is a priority to understand preferences in specialties but also, preferences towards working with people with dementia in any clinical role, as most doctors and nurses will inevitably work with this patient group.

Career preferences for working with people with dementia is used broadly throughout this thesis, but the definition is explored further in the qualitative work presented in sub-study 3. One main aim of the thesis is to conceptualise career preferences towards working with people with dementia.

1.3.2 Why is it important to understand the career preferences of student and newly qualified healthcare professionals in relation to dementia?

This section outlines how current dementia healthcare provision is sub-optimal and how the demand for services is increasing. It is also recognised that interest in working with people with dementia is low, therefore it is important to understand how healthcare students' preferences are influenced and in particular, the role of HEIs in shaping these preferences.

Inadequate dementia care

The improvement of dementia care is a global concern (World Health Organization, 2017). A review by Chow et al. (2018) identifies 29 countries that have developed national action plans in response to this challenge. Examples include Australia (Australian Government Department of Health, 2015), Japan (Health Labor & Welfare Ministry, 2015) and the USA (U.S. Department of Health and Human Services, 2012). In England this was in the form of the National Dementia Strategy (Department of Health, 2009) and the subsequent Prime Minister's Challenge on Dementia (Department of Health, 2015) and dementia care was prioritised as an area for improvement in the Five Year Forward Review of the NHS (NHS England, 2014). More recently it was outlined as an important action in the NHS workforce strategy; outlining improvement of supporting people to age well, including the improvement of services for people with dementia as a priority (NHS England, 2019). A key domain for improvement is the development of an effective healthcare workforce (Department of Health, 2015, World Health Organization, 2017) and work to achieve this is ongoing (Department of Health, 2018).

It is acknowledged that improving dementia care will require the improvement in the attitudes and knowledge of the healthcare workforce. Globally attitudes and knowledge towards dementia are recognised as problematic (Alzheimer's Disease International, 2019, Evripidou et al., 2019).

In terms of attitudes, ageism in healthcare students has been consistently acknowledged as a potential barrier to improvement in the care of older people (Burnes et al., 2019, Wilson et al., 2017). However, older people with dementia may face additional stigma due to their condition (Brooker, 2003); there is global evidence of negative attitudes toward people with dementia in the public and healthcare professionals (Alzheimer's Disease International, 2019). In a large global survey of the general public, people with dementia, and healthcare professionals, poor attitudes were found to result in negative outcomes for people with dementia. For example, people with dementia reported unfair treatment including dismissive and impatient behaviour, feeling unsupported, lack of understanding, and feeling ignored. Furthermore, in the UK, 39% of health care professionals said that they thought doctors and nurses ignore people with dementia (Alzheimer's Disease International, 2019).

However, a study sampling medical students from the UK found that students had relatively positive attitudes towards people with dementia (Tullo and Young, 2014). Whilst these findings are limited due to the use of only one measure of attitudes, another study in the UK also found generally positive attitudes to people with dementia in medical and nursing students but lower clinical skills (De Witt Jansen et al., 2013). However, this was limited to the context of palliative care. This research indicates that healthcare students in the UK may hold positive attitudes to people with dementia, but research in this area is limited.

In terms of healthcare students' knowledge, in the UK a deficit was indicated (Department of Health, 2009) and has resulted in recent curriculum changes, most significantly a Department of Health (DH) mandate to include dementia education in undergraduate healthcare training (Department of Health, 2013). There is also evidence that students are aware of this need with students reporting being unprepared for working with people with dementia (Honan, 2016, Pair, 2019). One UK study reported that only 52% of final year nursing students agreed with the statement that they felt 'generally confident' to care for people with dementia (Baillie et al., 2015).

In addition to concerns about workforce competency, the workforce is also viewed as inadequate because there are not enough staff to meet demand (World Health Organization, 2017). This is because healthcare service demands are changing with population demographic shifts; people are living longer and more patients have chronic long term conditions, this is a challenge for current workforce capabilities internationally (World Health Organization, 2015) and in the UK (NHS England, 2019). The NHS workforce strategy, the Long Term Plan, was published in 2019 and recognises that there is a serious current issue for recruitment of healthcare staff and without action this will worsen as the population demographics and health needs of older people continue to rise. It highlights the need for more delivery of services with a community and interconnected focus (NHS England, 2019). Dementia is an exemplar of these concerns with healthcare services already problematic (Department of Health, 2015). The number of people affected by dementia is increasing; it has been estimated that over one million people in the UK will have dementia in 2025 (Prince et al., 2014). Therefore the expansion of an

appropriately skilled workforce is essential to meet the needs of people with dementia (World Health Organization, 2017). Furthermore, these issues have since been reinforced in the NHS People Plan which highlights how building workforce capacity is imperative due to the implications of COVID-19 on health services (NHS England, 2020).

In the UK it is established that there are not enough doctors and nurses currently within the NHS (The Health Foundation et al., 2018). This is particularly true for recognised specialties relating to dementia; the capacity of the workforce needs to be built in areas such as old age psychiatry, geriatrics (Oliver and Burns, 2016), and general medical practice (Gale et al., 2017) and older people's nursing (Age UK, 2019). There is also an argument for an increase in dementia specialist posts to improve patient outcomes (Rahman and Denning, 2016), in both the hospital (Griffiths et al., 2015) and in community settings, including the Admiral Nurse service (Bunn et al., 2016).

Furthermore, health and care services will increasingly need professionals to engage with the specialist needs of this patient group, that is, generalists and all specialties need to understand how to deliver their care so that it works for older adults and their specific needs (Meiboom et al., 2018, Oliver and Burns, 2016). This is important given the need for more generalist healthcare providers to take a clinical interest in dementia, including dementia leads to implement service improvements for people with dementia not just in specialised services but in general services, such as dementia champions (Wilkinson et al., 2016, Banks et al., 2014).

In conclusion, the current deficiencies in dementia care provision warrant an increase in staff who are competent and willing to deliver dementia care.

Low preferences for working with people with dementia

Despite the established need for appropriately equipped and willing staff to work with increasing numbers affected by dementia, a problematic disparity exists between this need and the preferences of healthcare students, which are low in this area. This may contribute to issues in building the capacity of the workforce. The factors that impact the supply of the healthcare workforce is complex and is affected by educational systems, labour markets, and health systems; healthcare training

and the choices of students identified as one contributing factor (McPake et al., 2015).

In undergraduate nursing students, there is an established literature on how working with older people is one of the least favoured career preferences (Garbrah et al., 2017, Neville et al., 2014, Sizer et al., 2016). This includes working with older patients as opposed to younger patients (Rathnayake et al., 2016, Carmel et al., 1992), and in different settings, for example care home nursing rated as the lowest preference (King et al., 2013). Research has also explored the preference for the nursing of older people compared to other areas of practice, and has been frequently found to be the least popular choice by students (Happell, 1999, Henderson et al., 2008, Kloster et al., 2007, Stevens, 2011, Xiao et al., 2013, Matarese et al., 2019, Hunt et al., 2020). A UK based study found that only 5% of students selected working with older people as their preferred career choice in their final year of undergraduate training, while acute care was the most popular (Ridgway et al., 2018). However, this sample included all branches of nursing (i.e. adult, children, learning disability and mental health) so it is unclear how this effects the distribution of preferences.

In medical students, there are also concerns about low preferences in students and difficulty in recruitment for specialties related to working with older people. In medicine, internationally this includes geriatrics (Meiboom et al., 2015b, Diachun et al., 2006b), old age psychiatry (Farooq et al., 2014), and primary care or general practice (Dall et al., 2017). This is also mirrored specifically in the UK in geriatrics (Fisher et al., 2014, Maisonneuve et al., 2014), old age psychiatry (Fazel and Ebmeier, 2009) and general practice (Gale et al., 2017). These are evidenced in lower competition ratios in the UK; with the number of foundation doctors applying for each available post within these specialties being some of the lowest (Health Education England, 2019).

In addition, the needs of older people are underrepresented across specialties, with older people seen as one of the least preferred patient groups to work with compared to other age groups, and medical conditions, compared to other conditions such as drug addiction, and cardiovascular diseases (Carmel et al.,

1992). Therefore there is a need to increase 'enthusiasm' for working with older people more generally (Meiboom et al., 2018).

In summary, there is a consistent body of literature on the relative unpopularity of clinical interest in working with older people and recognised specialties related to working with older people and people with dementia in nursing and medical students. In terms of preferences for working with people with dementia specifically, the literature is limited.

There are indications for issues of retention of staff who work with people with dementia (Cheloni and Tinker, 2019, Chenoweth et al., 2010). For students, there are only two studies regarding the popularity of working with people with dementia specifically. First, one study in Sweden investigated a range of health care students', including medical and nursing students and their intention to work with people with dementia and found only 22% stated an intention to work with people with dementia. Interestingly no male students stated an intention and between healthcare professions, they found intentions even lower in university trained healthcare students including doctors and nurses. Also, 77% of the students agreed that the care of people with dementia has a low status in the health care service (Aström, 1986). However, while this paper suggests a very negative perspective of student preferences for dementia, a significant limitation is that it was published more than three decades ago and since then there have been considerable changes in terms of dementia education in healthcare and understanding within the general public. More recently, in Australia, McKenzie and Brown (2015) found more moderate intentions to work in dementia care in undergraduate student nurses. However, this was based on the average neutral score on a scale of intentions to work with people with dementia, therefore, without comparing to other patient groups limited interpretations can be drawn on relative popularity. Students in this study also described numerous barriers to working with people with dementia and only a small number cited no barriers or positive aspects. Therefore, there is some evidence for lower preferences for working with people with dementia in students. However significant gaps in this literature are evident, there are no studies in the UK and preferences to work in dementia care are not conceptualised.

In conclusion, preferences for working with people with dementia appear low in healthcare students, as reflected in older adult literature, however, they have not been adequately explored in isolation.

These low preferences in students are a problem because they may indicate eventual career choice and behaviour towards patients. For instance, studies have shown that the career preferences of undergraduate students and new graduates are predictive of career destinations (Goldacre et al., 2010, Dunkle and Hyde, 1995). For example, Goldacre and colleagues analysed survey data collected over 10 years over successive graduating cohorts for all UK medical students. They found that eventual career destinations matched with preferences in first year of graduation for 54% of students. This shows that stated preferences are a good indication of eventual career choice (Goldacre et al., 2010). Further, students themselves feel undergraduate training is an influential time with one study indicating that 50% of students felt specialties were ultimately chosen during medical school (Ní Chróinín et al., 2013). This has also been found in nursing students, for example, one study found that recorded intention to work with older adults after graduation was predictive with their actual destination (Dunkle and Hyde, 1995). Therefore it is important to understand career preferences and how they may be changing at this time for workforce planning, to better fit newly qualified healthcare professionals' intentions to the needs of health and care services.

Student preferences for working with different patient groups (clinical interests) may affect the way they treat patients in practice. For example, Hanson (2014) in a review of the literature suggests that negative attitudes to older people and working with older people are common and can have direct detrimental outcomes for patients. For instance, one study suggested that older people may not be admitted to hospital for treatment as treatment may be perceived as being a waste of time (Higgins et al., 2007). Ageist attitudes affecting the care of older people have also been documented (Wilson et al., 2018). There is evidence that students do not prefer educational experiences with older people (Annear et al., 2016). Furthermore, it is suggested that negative attitudes, can result in stigma and discriminatory behaviours in healthcare professionals towards people with dementia (Alzheimer's Disease International, 2019). Together these findings indicate that low interest in engaging with this patient group may lead to poorer care. Therefore, preferences

are not just important to understand in terms of eventual career choice, but also in terms of clinical outcomes.

Cultivating clinical interest in dementia in students might mean they are more likely to dedicate time, interest, and resources to the needs of this patient group. For example, after qualification, they may seek ongoing professional development and training in dementia or take a clinical lead. Also, while an increase in clinical interest or interest in a dementia-related specialty as students may not lead to a specific career choice, they may carry this dementia-specific learning and appreciation forward into other areas of practice so improving their care for people with dementia they encounter in their normal practice (Maisonneuve et al., 2014).

In conclusion, given the predictive value of preferences and relationships with behaviour in care; and the low preferences of students for working with people with dementia, it is of value to understand how these preferences may form.

Role of education

It is important to understand the development of preferences during undergraduate training as it is an influential time. Understanding the impact of an HEI's curricular choices is also important due to the opportunity to stimulate interest. Previous research has shown choices are developed through training (McCann et al., 2010, Maudsley et al., 2010, Compton et al., 2008).

For example, one study in Australia followed a nursing cohort over three years. They found that approximately 40% of students were undecided at the start, reducing to 3% in Year 3. Career preferences changed over the three years with some specialties becoming increasingly popular (e.g. acute care of adults) and some increasingly least favoured (e.g. care of older people) with the authors suggesting an influence of the curriculum (McCann et al., 2010).

Similarly, it has been found that UK medical students report greater levels of certainty in their career choices in later training years (Maudsley et al., 2010). UK national surveys of medical students have found choices settled at the end of undergraduate training for the majority: 65.3% of students who went immediately

into specialty training, reported that the specialty choice at the start of FY1 did not change at end of FY2 (The UK Foundation Programme Office, 2019).

It is also recognised that preferences towards different clinical areas report differential changes depending on the specialties. That is, during education, some areas of practice may attract more students than others or different timings for preference development may be observed. For example, in the US a large survey of 15 medical schools at three time points, including first and final year, found that the majority of students changed choices during this time but also the likelihood of changes differed depending on the specialty; 30% of students initially interested in primary care remained interested over the three time points, compared to 68% of those who were initially interested in non-primary care specialties (Compton et al., 2008). This has also been reported in the UK, with the match rate for intentions and destinations also differing by specialty choice (Goldacre et al., 2010). For instance, the early choice of some specialties was highly predictive of career destination, such as general practice and psychiatry, but also a large number of doctors were also attracted at a later point who had not initially preferred them.

Previous literature suggests training could be a detrimental time for preferences for working with older people with a decrease in preference for medical (Diachun et al., 2006b, Diachun et al., 2006a) and nursing students (Gould et al., 2012, Stevens, 2011, Zisberg et al., 2015).

In terms of dementia education, key issues have been identified and changes implemented in the last ten years. International concern on improving education in dementia for healthcare professionals has been consistently expressed (Surr et al., 2017, Warshaw and Bragg, 2014) with significant gaps in the curriculum being documented in UK undergraduate and post-graduate education (Tullo and Gordon, 2013, Mayne et al., 2014, Knifton et al., 2019). In England, one of the most significant responses to this concern was the mandate for undergraduate dementia training in the curriculum (Department of Health, 2013) and development of the dementia training standards framework (Skills for Health et al., 2018), prompting a substantial time of change for undergraduate teaching in dementia. Dementia education in the UK has expanded considerably but there are still concerns with the

depth and consistency of coverage (Knifton et al., 2019) and calls for evidence of effective interventions (Surr et al., 2017).

As a result, there has been a rise in the development and evaluation of educational and training programmes for dementia. Alushi et al. (2015) conducted a literature review of dementia interventions for pre-registration healthcare students. They identified the most commonly cited aims of interventions were to improve students' knowledge, comfort level, and attitudes and perceptions of people with dementia (Alushi et al., 2015). One study was found to explore career preferences. However, the role of educational interventions in dementia on career preferences is limited so far.

In summary, undergraduate training is an influential time for the development of student preferences and these preferences are predictive of choices. Therefore, it is important to consider how undergraduate education plays a role in career preferences for working with people with dementia. Furthermore, because of the current drive to change educational practices in dementia, it is timely to understand how preferences may develop.

Conclusion

Due to the increasing demand for competent and willing healthcare professionals to work with people with dementia, it is important to understand how preferences may form. This is important for workforce planning, not just in terms of choices but also for attitudes or willingness to engage with this patient group positively.

While dementia is more common in older people it is not synonymous with older age. Therefore, while the previous literature has explored preferences for working with older people, working with people with dementia has unique issues to be addressed, and needs to be explored separately. Issues include the potential for double discrimination (i.e. against older people and against dementia); evolving dementia education; and the increased need for healthcare professionals in recognised specialties related to dementia and in those taking a clinical interest.

Consequently, there is a need to understand the factors associated with dementia career preferences. This is particularly important in students because these preferences are predictive of choices, they may relate to behaviour in practice, and undergraduate training is an influential, possibly even detrimental time for the development of preferences to this work.

1.3.3 What is already known about the factors associated with preferences related to dementia?

This section describes the literature on factors associated with healthcare preferences in general and the use of conceptual frameworks for understanding them. The paucity of research on factors associated with preferences for dementia is outlined.

Factors related to career preferences in general

General factors

There is a growing body of evidence for the factors associated with overall career preferences in medical (Smith et al., 2015, Spooner et al., 2017, Yang et al., 2019, Kumwenda et al., 2019, Querido et al., 2016) and nursing students (Matarese et al., 2019, Rognstad et al., 2004, Hayes Laureen et al., 2006).

A recent review on subspecialty preferences of medical students identified 12 main factors from a synthesis of 75 studies (Yang et al., 2019). They were: academic interests; competencies; controllable lifestyles or flexible work schedules; patient service orientation; medical teachers or mentors; career opportunities; workload or working hours; income; length of training; prestige; advice from others; and student debt. This study highlighted the differential priorities of factors depending on countries. Due to this, and the differences in education and training pathways of medical and nursing students internationally, it is suggested preferences of healthcare students need to be viewed in this context.

A systematic review, only including studies within western European training pathways (encompassing the UK but excluding the US and Australia), presented five main types of factors on medical specialty decision making based on a synthesis

of 57 studies (Querido et al., 2016). These were: medical school characteristics (e.g. curriculum); student characteristics (e.g. demographics and personal traits); student values (e.g. preference and positive attitude towards patients); career needs to be satisfied (e.g. work-life balance, status, salary); and perception of specialty characteristics (e.g. experiences and understanding). They found that career needs and perceptions of specialties were most associated with choice.

In the UK, a qualitative study used interviews with FY2 year doctors to explore the reasons/perceptions for career preferences. They defined them as considerations to 'career structures and pathways, the realities of work routines, considering job status and prospects, the impact of work on life, and the adequacy of preparation for choosing a specialty' (Spooner et al., 2017, p. 3). They concluded that individual values, motivations, and preference for generalist or specialist work influenced views of training pathways or specialties. Important considerations were competition for posts and work-life balance. Negative attitudes from others led to hesitancy and experiences of the team environment were influential. However, students also acknowledged that they did not have exposure to all specialties to form a complete picture of them. While this study was a small qualitative analysis (n=20), it provides perceptions of UK students on career preferences.

For nurses, similar factors are reflected for preferences in careers. Factors explored include: demographics (Matarese et al., 2019), educational environment including practice placements (Wareing et al., 2018, Kloster et al., 2007), lifestyle factors (Kloster et al., 2007), professional development (Rognstad et al., 2004), and perceptions of clinical interests or specialties (Hayes Laureen et al., 2006, Wareing et al., 2018, Kloster et al., 2007, Gould et al., 2012). However, while research has identified consistent patterns of popularity for career preferences in nurses, an exploration of factors are limited (Cottle, 2019, Wareing et al., 2017) when compared to the literature of factors for medical students.

One study to address this in the UK was a focused look at the influence of preferences of final year adult nurses (Wareing et al., 2018). Preferences were categorised as critical care, medicine, surgery, trauma and orthopaedics, care of the older person, end of life and community. This mixed-methods study found that placements, including elective placements and mentors, were identified by students as key influencers. They also summarised four key factors from student's

explanations of preferences: learning environment, such as the ability to acquire skills; working environment, particularly valuing a fast pace, good teams and leaders; clinical environments, such as direct patient contact, confidence in decisions and sufficient challenges and interest; and clinical specialty, including patient or clinical aspects of interest and variety.

In conclusion, both the literature on nursing and medical preferences shows them to be influenced by complex interlinked factors that are not static (Querido et al., 2016, Price, 2009). They encompass aspects of the broader social context, working and clinical environments, education influencers and personally held factors.

Factors associated with specific recognised specialties or clinical interests

While general factors influencing preferences have been identified, differences in factors between career preferences need to be explored to fully understand the complexity. This is illustrated in one study which used a retrospective questionnaire asking medical students (n=5,631) to rate 19 influencers on their choice of specialty. Using factor analysis they found three factors that explained 40% of the variance: work and time-related aspects, career related aspects, and patient orientation (van der Horst et al., 2010). These factors differed in importance for the individual depending on their specialty preference, illustrated in Table 1 below.

Table 1: Factors most and least important to students by specialty (Van der Horst et al., 2010)

Factor	Specialty least important	Most important
Work and time related aspects	Surgery and orthopaedic surgery	Psychiatry and radiology
Career related aspects	Psychiatry and general medicine	Surgery, orthopaedic surgery and 'others'
Patient orientation	Anaesthesiology and orthopaedic surgery	Child psychiatry, internal medicine, paediatrics, and general medicine.

This study demonstrated the strongest influencers on preferences and illustrates how they differ in importance by specialty choice of the individual. Therefore while

key factors have been identified that influence preferences in general, it is important to explore preferences at an individual specialty level to understand the motivations for that particular specialty. This is particularly useful in understanding preferences and intentions for underrepresented clinical needs or specialties for workforce planning. Previous literature has presented factors for the understanding of recognised specialties or clinical interests. There are many examples given the breadth and complexity of healthcare careers, but relevant examples include preferences for general practice in medical students (Gale et al., 2017) and primary care nursing (Bloomfield et al., 2018), psychiatry in medical students (Farooq et al., 2014) and mental health nursing (Happell and Gaskin, 2013) and working with older people (Neville et al., 2014) and geriatric medicine (Meiboom et al., 2015b).

Researchers have developed conceptual frameworks for understanding the career preferences of healthcare students. However, it is acknowledged that in general there is a lack of research in developing or using conceptual frameworks or models in career research in healthcare students (Bennett and Phillips, 2010, Lawson et al., 2004). Conceptual frameworks can be defined as a way to describe a linked set of concepts or ideas to create a greater understanding of a phenomenon and are distinct from theory as it does not lead to predicting an outcome. Models are the pictorial forms of conceptual frameworks or theories (Johnson and Walsh, 2019). However, in practice definitions vary and terms are used interchangeably. The utility of developing conceptual frameworks for career preferences is that it can bring together factors, help understand the relationships between them, be applied to education development, inform future research, and be used to create theories and predictions of preferences.

The Bland-Meyer model of medical student specialty choice (Bland et al., 1995) is one of the most comprehensive (Pfarrwaller et al., 2017, Querido et al., 2016) and has been applied to primary care choice in the US. The original model was derived from an analysis of existing literature and suggests a number of factors influence students eventual choice of career, most directly this includes student's needs to satisfy (e.g. personal or societal expectations) and their perception of specialty characteristics. Feeding into this are student characteristics, their medical school, and the characteristics of specialties. This model has subsequently been tested with mixed degrees of agreement of the predictive value of variables (Lawson 2004).

Further expansion of the model has become increasingly complex (Pfarrwaller et al., 2017).

Another model of primary care choice, by Bennet and Philips (2010), critiques the Bland-Meyer model for its over emphasis on formal education rather than exposure to practice environments and not considering the student's valuation of fit with interests and lifestyle considerations. A distinguishing feature of their model is that they do not treat students as a homogenous group and outline factors specifically for those who have previously identified themselves as committed or undecided towards primary care. They also do not limit factors to only those with evidence as to suggest further explorations.

These studies provide examples of how conceptual frameworks have been used in career preferences. Future recommendations for the improvement of frameworks include the need to understand the mechanisms behind influencing factors (Pfarrwaller et al., 2017) and to specify the interrelations between factors (Querido et al., 2016). Researchers agree on the value of qualitative and mixed methods research for this purpose (Querido et al., 2016, Price, 2009).

Factors related to preferences for working with people dementia

Within this literature review, a distinct scoping review was conducted to specifically identify the literature on factors associated with preferences of healthcare students in relation to working with people with dementia. It was established that there was a lack of relevant studies and identifying studies was difficult. Therefore, to explore comprehensively the previous literature and identify established factors a systematic review was conducted on the factors associated with dementia and older adult preferences in undergraduate healthcare students. This is presented in Chapter 3 as the first sub-study, a summary of this has been published (Hebditch et al., 2020).

Conclusion

In conclusion, previous research has outlined the factors related to general healthcare career preferences and for specific clinical interests or recognised specialties. This is important for workforce planning. It is understood that some

factors are recognised to be country-specific and there are underlying differences between students. Conceptual models are useful taking into account these contexts. There is little research relating to preferences for working with people with dementia and no conceptual frameworks have been developed.

1.4 The rationale for the study

Understanding the career preferences of healthcare students is integral to workforce planning, in relation to both recognised specialties and clinical interests. Undergraduate training is a critical period in preferences development, therefore the role of HEIs is important and offers an opportunity to influence preferences. Previous literature has shown the utility of developing conceptual frameworks for understanding these preferences.

It is important to understand preferences for working with people with dementia due to the unpopularity of related specialisms, the increasing demand for services and the priority for improvement of dementia services.

Therefore, there is priority in understanding better preferences for dementia. A conceptual framework would be valuable to understand the factors influencing preferences, particularly to consider for educational practices.

1.5 Aims and Objectives of the thesis

Aim: the aim of the thesis is to identify and explain what factors influence undergraduate and newly qualified doctors' and nurses' preferences for working with people with dementia and to develop a conceptual framework for how these factors impact (positively or negatively) upon preferences.

Purpose statement: this thesis describes a mixed methods study and therefore it is good practice that its intention should be stated as a purpose statement (Creswell and Clark, 2017). A sequential mixed method design (Creswell and Creswell, 2017) was used and consisted of a quantitative phase and qualitative phase. In the first phase, two sub-studies were conducted: a systematic review and quantitative analysis of longitudinal survey data. This first phase explored and identified factors associated with career preferences for working with people with dementia in

healthcare students. The second qualitative phase sought to build on this knowledge by expanding and seeking to explain factors. This third sub-study used semi-structured interviews with newly qualified healthcare professionals sampled from the survey results. Together these sub-studies, through integration, meet the overall thesis aim.

There were three main objectives relating to each sub-study and one objective of the integration:

Objective 1 (SS1): to identify and consolidate the existing literature on factors associated with career preferences of medical and nursing students specifically in relation to dementia and to older adults generally.

Objective 2 (SS2): to assess student career preference of undergraduate nursing and medical students, in relation to changes over time, preferences for working with people with dementia, and identify the factors related to these preferences.

Objective 3 (SS3): to explore factors that influence career preferences in relation to working with people with dementia; to understand how these factors relate to medical and nursing students' preferences and how they influence decisions and perspectives on their careers.

Objective 4 (Mixed methods integration): to synthesise the results from each sub-study to develop a composite conceptual framework and provide a comprehensive understanding of what factors are identified and how they may influence career preferences for working with people with dementia.

This chapter has presented the background and contextual literature to the thesis, provided the rationale of the research and its main aim and objectives. The next chapter focuses on the overall mixed methods methodology in the thesis.

2 Chapter 2 Methodology

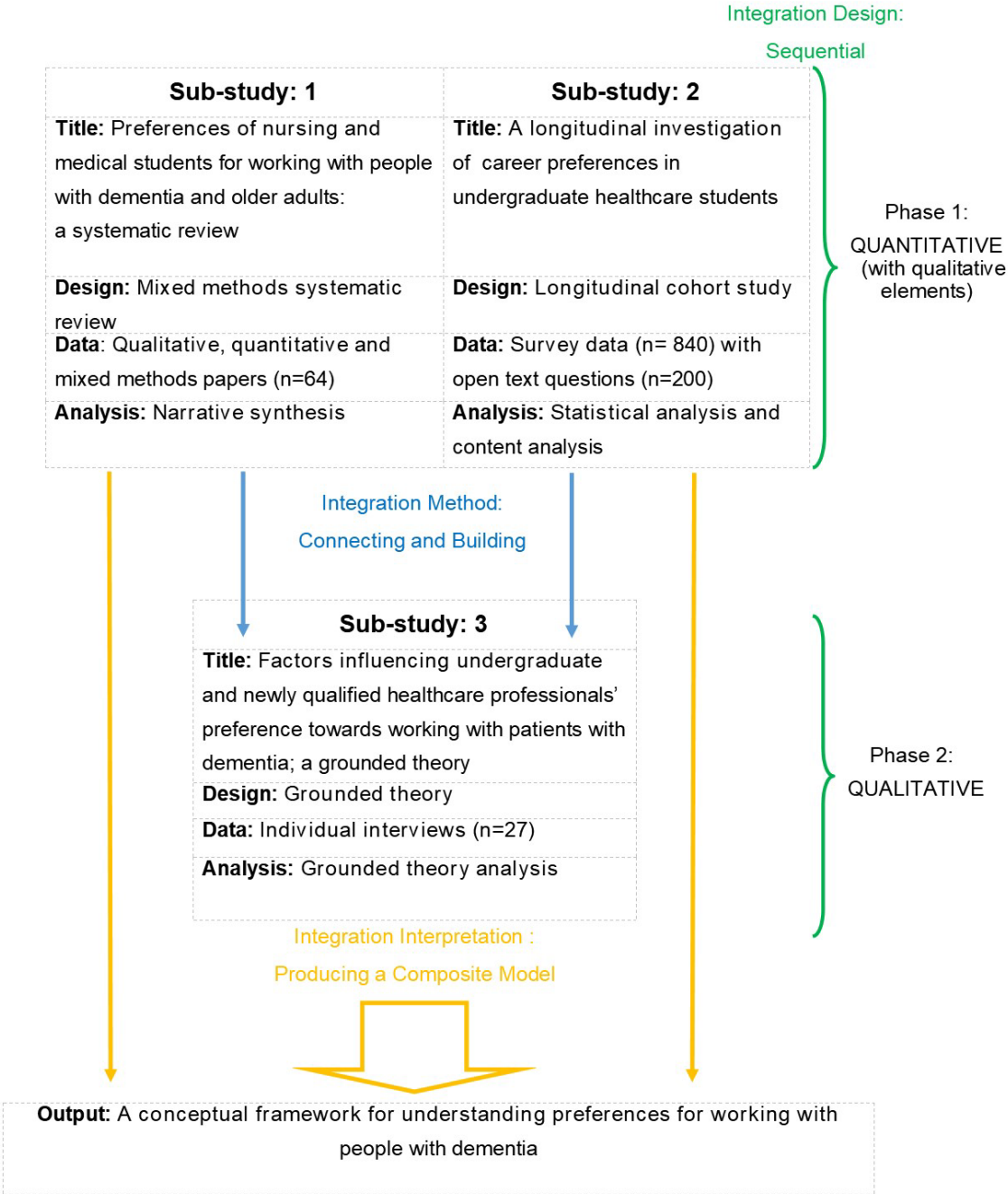
The research presented in this thesis uses a mixed method design with three sub-studies. In this chapter, the overall mixed methods methodology is presented. Detail of the design and methods for each sub-study is detailed in its corresponding chapter.

2.1 Mixed methods design

Mixed methods can be defined as a combination of qualitative and quantitative approaches. Pluye and Hong (2014) specify that to be considered mixed methods qualitative and quantitative research must be combined, used rigorously, and must include integration in either data collection, analysis or results (Pluye and Hong, 2014). This study integrates three sub-studies that have both quantitative and qualitative components and is, therefore, a mixed methods study.

A summary of the three sub-studies and how they are integrated is outlined in Figure 1.

Figure 1: Thesis mixed method design



The coloured arrows on the figure signify the types of integration used in this thesis in terms of design, methods and interpretations, as outlined by the definitions in Fetters, Curry, and Creswell (2013). These are described in more detail below.

2.1.1 Types of integration

Types of integration by design

Integration by design means that the research design comprises of quantitative and qualitative components that are linked. This thesis employs a sequential design as defined by Creswell and Clark (2017) as the qualitative strand (SS3) follows quantitative work (SS1 & SS2). This could also be defined as an explanatory sequential design as the qualitative phase follows the quantitative phase. However, unlike the standard approach whereby the quantitative work is the core focus with the qualitative component providing narrative to help explain the findings (Creswell and Clark, 2017), in this thesis, the quantitative and qualitative strands have separate objectives, it is, therefore, more in line with equal status or mixed status priorities research (Johnson et al., 2010, Creamer, 2018).

Also, further nuances are introduced by the fact that there are qualitative elements in phase 1. Namely that qualitative papers are included within the systematic review and there is a content analysis of open questions in survey data. However the quantitative elements take dominance; for the systematic review, themes are 'quantified' into factors and the content analysis of open questions within the survey is secondary to quantitative data, so neither in isolation would fit the criteria for mixed methods as defined by Pluye and Hong (2014). Favouring simplicity, it has been defined as a quantitative phase, rather than breaking down into an advanced mixed methods design.

Types of integration by method

Fetters et al. (2013) outline four types of integration methods: merging, embedding, connecting, and building. 'Merging' involves the integration of data at analysis. 'Embedding' involves connecting data collection and analysis at many points. 'Connecting' refers to the linking of participants and data through sampling, for example, where new data is taken from a subsample of participants selected from a larger sample. 'Building' is characterised by data collection which is informed by the results of a previous study. In this thesis, building and connecting, are used:

Building: The first quantitative phase of work (SS1 & SS2) identified possible factors associated with preferences for working with people with dementia, which were then used to help inform SS3 including questions in the topic guide.

Connecting: In SS3, participants were sampled from the survey data collected in SS2, allowing for purposeful sampling, identifying individuals with high/low preferences for working with people with dementia and characteristics of interest such as participation in TFD (an educational programme).

Types of integration by interpretation

Interpretations refer to the point researchers draw conclusions. Interpretations as a type of integration include narrative, data transformation, and joint display (Fetters et al., 2013). Joint display refers to summarising the data or results of both quantitative and qualitative studies by figure or table, to provide an overview of integration at a visual and descriptive level. Joint displays can help to produce greater knowledge by allowing contrast and collaboration of data to bring new conclusions or meanings (Fetters et al., 2013).

Bazeley (2017, p. 2) advocates the benefit of analysing data together from multiple sources suggesting:

Data from different sources and of different types, each with different strengths, beneficially come together in a complementary way. Each contributes unique aspects and differing perspectives on a subject to produce a more refined and more rounded understanding, thus giving a better sense of the whole.

The purpose of combining data in this thesis aligns with the idea of ‘creating a coherent picture or account built of elements from a variety of data sources’ (Bazeley, 2017, p. 4), which is the main aim of the thesis. In this thesis, results from each sub-study were summarised in stages. These results are then integrated together by exploring the evidence for each factor using a joint display, to create a composite conceptual framework. The conceptual framework is then presented as both a narrative description and a model (Fetters et al., 2013).

The aim of the conceptual framework is not to simply summarise the results by 'factors' associated and to confirm findings by triangulation, but to expand on the themes and add further meaning and understanding to the phenomena in question, namely career preferences towards working with people with dementia. The qualitative data expands on the nature of the associations of the factors found in previous studies (Fetters et al., 2013) while the quantitative data adds additional knowledge to the framework such as factors not explored by qualitative work. Methodologically, this study sits within the new literature on mixed methods grounded theory as a distinct method, that uses 'mixing' types of data to form a composite model (Johnson et al., 2010), which is explored further in the next section.

2.2 Grounded theory in mixed methods

Grounded theory can be characterised as a methodology encompassing a paradigm, or as several methods for analysis for qualitative data (Guetterman et al., 2017). The aim of grounded theory is to create a theory or framework derived from the data by the systematic application of methods to analyse qualitative data. It was originally developed by Glaser and Strauss (1967), who then split to form their own distinct approaches (Glaser, 1992, Strauss and Corbin, 1998) and others have now taken these ideas forward, for example, Charmaz (2006). The methods of grounded theory are outlined further in Chapter 5, the use of grounded theory in mixed methods research is outlined here.

There are strong advocates for the use of grounded theory with mixed methods research (Babchuk, 2015, Charmaz, 2006, Glaser and Strauss, 1967, Johnson et al., 2010; as cited in Guetterman et al., 2017). Mixed methods grounded theory can be characterised as an overall methodology that uses mixed methods to produce a theory grounded in data, using grounded theory methods (Johnson and Walsh, 2019), or a mixed method study that uses grounded theory in the qualitative strand (Guetterman et al., 2017). Key recent literature on the use of grounded theory in mixed methods is summarised below.

Johnson et al. (2010) argue that grounded theory as a method works well with mixed methods because classical grounded theory: a) can use mixed data sources; and b) is epistemologically compatible and so in keeping with classical pragmatism.

Classical pragmatism is an underlying philosophy justifying the use of mixed methods with the key tenet being that methods of study should be chosen based on the research questions and ‘when judging ideas we should consider their empirical and practical consequences’ (Johnson and Onwuegbuzie, 2004, p. 17).

Johnson and colleagues (2010) propose the use of grounded theory in mixed methods can be seen as a distinct method, known as Mixed Method-Grounded Theory (MM-GT). They suggest that the dominance of which method, quantitative or qualitative, for mixed methods, determines the associated epistemology and suggests that MM-GT, where each method takes equal dominance, is linked to classical pragmatism and dialectical pluralism. Dialectical pluralism is a term used to describe a metaparadigm where multiple worldviews or paradigms are considered together (Johnson et al. 2010). They suggest that MM-GT is useful in mixed methods research that seeks to connect nomological (universal, objective) and idiographic (contextual, subjective) knowledge including theory related to causation, stating ‘MM-GT explicitly emphasizes that researchers should position themselves to focus on dynamically fusing these conflicting demands’ (Johnson et al., 2010, p. 72). They suggest MM-GT suits research questions that seek to generate theory about complex phenomena that integrates knowledge from both quantitative and qualitative approaches.

Guetterman et al. (2017) systematically reviewed how grounded theory was being used in mixed methods studies. They built on the definitions of Fetters et al. (2013), Creswell (2015) and Johnson et al. (2010). They identified 61 studies they classified as using MM-GT. They stated that grounded theory is a useful qualitative approach in mixed methods because it ‘provides an effective technique to integrate or develop theory from practice as data are emergent, contextual and situation-specific across settings’ (Guetterman et al., 2017, p. 13). They summarised the key features of previous work and from this, they outlined advantages of this method and recommendations for practice. A key output of their review was to provide best practice guidance for MM-GT, which is outlined in Figure 2.

Figure 2: Mixed Methods-Grounded Theory Checklist (Guetterman et al., 2017, p. 14)

- Read and cite appropriate mixed methods methodological literature
- Read and cite appropriate grounded theory methodological literature.
- Describe the reason for using mixed methods and specify which design.
- Ensure methods match the research question from both mixed methods and grounded theory perspectives.
- Describe the reason for using grounded theory and specify which approach.
- Clearly identify the mixed methods procedures being used.
- Clearly identify the grounded theory procedures being used.
- Employ mixed methods legitimation strategies to address potential threats to validity.
- Employ strategies for validating the grounded theory findings.
- Use standards for evaluating quality of the mixed methods components.
- Use standards for evaluating quality of the grounded theory components.

Cremer (2018) developed these ideas further by suggesting that MM-GT may be used not just in the integration at the inference stage, the point of drawing conclusions, but that integration may occur at multiple stages. For instance, in: a) designing research questions; b) analysing data; and c) generating and testing a model. They characterise this as a holistic methodology, which they name, Fully Integrated Mixed Method-Grounded theory (FIMM-GT). In this, they state the weighting of quantitative and qualitative data is not of equal status but of mixed-priority. They detail four examples, from health intervention or education studies, which use MM-GT to create a classical grounded theory and illustrate the different methods of integration. They advocate the use of such work because it often investigates factors on a micro (individual) and macro (contextual) level which suits MM-GT as it allows for different types of knowledge. They suggest that future researchers should 'anticipate detours' as previous authors have found that findings from quantitative and qualitative methods may appear contradictory and the process should be viewed as iterative. In this way, contradictory or unexpected findings should be viewed as helping to illuminate the complexity and drive innovative thinking.

Johnson and Walsh (2019) have further contributed to the field by summarising designs of MM-GT which they simplify to mixed grounded theory (MGT), where the

objective is to produce a grounded theory. They define three classic designs: parallel or concurrent, sequential explanatory, and sequential exploratory. They suggest specifying the point in which grounded theory methods are used. However, they encourage the creative use of grounded theory in mixed methods and suggested that ultimately more 'hybrid' designs will be useful in practice.

One key example that has been cited by both Creamer (2018) and Guetterman et al. (2017) is a study by Kawamura et al. (2009) which highlights the use of MM-GT in producing a composite model. They characterised their study as a 'concurrent triangulation mixed methods design'. Their model aimed to explore the mechanisms behind an educational programme's effect on peoples change in physical activity. They first created a hypothetical model based on previous theory and empirical work. They then tested this theory using survey data and structural equation modelling (the quantitative strand) and created a grounded theory based on interviews (qualitative strand). This was then brought together to form a composite model in which they visually depicted what strands (Quantitative/Qualitative) each construct was derived from and signified if they were supported by both strands.

In the work reported here, the sequential mixed method design uses grounded theory methods for the qualitative study which is integrated with the results from the quantitative phase (SS1 and SS2) to form a conceptual framework grounded in the data (i.e. a grounded theory). This could be defined simply as a sequential design that can be written in shorthand as: QUANT→QUAL GT (Johnson and Walsh, 2019). However, this could also be described as a hybrid design for the reasons previously outlined in section 2.1.1.

2.3 The rationale for the use of mixed methods and grounded theory in this research

The main rationale for using a mixed methods approach is that the subject of interest has not been previously researched and therefore multiple methods need to be used to provide a comprehensive understanding and build theory in this area. This is one of the main reasons for using mixed methods: '[researchers may] concomitantly need both methods to better understand a new phenomenon (qualitative methods) and to measure its magnitude, trends, causes, and effects (quantitative methods)' (Pluye and Hong, 2014, p. 30).

Within this thesis, due to the lack of empirical evidence, a systematic review was chosen to ensure a thorough understanding of existing relevant literature. Survey results from the TFD evaluation offer an opportunity to look at career preferences longitudinally and with several potential factors. However, this alone does not directly address the subjective account of students and newly qualified medical and nursing staff sufficiently and limits the enquiry only to those factors that have been explored previously. The qualitative sub-study therefore allows further exploration of potential factors as well as explaining how these factors may influence preferences, thereby allowing a more nuanced understanding.

On a practical level, the use of mixed methods allows further expansion on existing work as this thesis was developed from survey data as a starting point, with the addition of the systematic review and qualitative study. The sequential design allows the participants to be sampled from the survey (i.e. connecting) allowing students' preferences to be identified and purposefully sampled and allows further exploration of the findings of the survey and review (i.e building, Fetters et al., 2013).

In this thesis, grounded theory is used as a method of analysis for the qualitative strand (SS3) but also characterised as the wider methodology for the integration of quantitative and qualitative data to create a conceptual framework that is, creating a composite framework grounded in the data from the three sub-studies.

Grounded theory was chosen for the qualitative work because it is a method that allows the generation of new theory (i.e. the building of a conceptual framework) and, is an inductive and highly systematic approach, which is compatible with mixing data (further discussed in Chapter 5) and enhances rigour. For these reasons, it also suitable for an overall aim to the integration of results from each sub-study, and therefore an MM-GT approach is used for integrating the results. This is because it supports the integration of two types of knowledge, allows building a comprehensive picture, and is a flexible and emerging approach that allows for anticipated complexity. Guetterman and colleagues (2017) specify a number advantages of taking a MM-GT approach, in relation to this thesis this includes: 1) utilising strengths of both methods to build theory; the quantitative study gives the ability to generalise findings and the qualitative adds depth to the findings; 2) grounded

theory offers a rigorous approach to qualitative analysis and; 3) using GT with quantitative results, allows the generation of a framework that is embedded within students views, and considers context, important for exploring the complexity of preferences.

There are a number of approaches to grounded theory, but no ideal type has been identified for use in mixed methods (Guetterman et al., 2017). The grounded theory approach drawn on to guide this thesis is Charmaz's (2006) constructivist approach. This is because it emphasises flexible techniques and does not aim to produce a formal classical theory with only one core category. This is compatible with this thesis for two main reasons. First, it suits a mixed methods study, where a flexible approach is needed. Second, when exploring complex phenomena such as preferences, trying to identify a single core category and the use of structured theory dimensions may restrict the interpretation of data rather than aid explanation (Charmaz, 2006).

2.4 Philosophical assumptions

The underlying interpretive framework is pragmatism and its associated philosophical assumptions, in line with Creswell (2013). A pragmatic approach is taken because this thesis aims to use multiple sources of knowledge to develop an understanding of healthcare students' career preferences for working with people with dementia. There is limited knowledge on career preferences with dementia and this thesis aims to bring together previous research, use existing data, and further exploration. Therefore different types of knowledge (that reflect deductive and inductive evidence) will be integrated, enabling a comprehensive framework that has practical implications.

This chapter has outlined the mixed methods methodology for this thesis. Outlying the sequential design, comprising three sub-studies, and the rationale for a MM-GT approach. The next chapter describes SS1.

3 Chapter 3 Sub Study 1: Preferences of nursing and medical students for working with people with dementia and older adults: a systematic review.

This chapter presents a systematic review of preferences for nursing and medical students for working with people with dementia. A shorter version of this review has been published (Hebditch et al., 2020).

3.1 Background

3.1.1 Previous systematic reviews

As noted before, there is little research on the preferences of medical and nursing students for working with people with dementia, and the doctoral researcher has identified no systematic reviews on this topic.

One review, related to dementia, synthesised studies relating to recruitment and retention in nurses for working with older people and people with dementia (Chenoweth, 2010). It concluded that intrinsic rewards, such as the opportunity to practice quality nursing care and recognition of professional skills, was the most important factor for attracting nurses. While not focusing primarily on students, it outlined the importance of placements for students and ongoing supervision. However, it did not clearly distinguish the literature between working with patients with dementia and older people. It was therefore unclear as to what was found directly in relation to dementia.

This is also repeated in the literature exploring preferences for working with older people; whereby dementia may be mentioned by the authors or by quotes of students but not explored in itself. As outlined in Chapter 2, whilst understanding perceptions on preferences towards working with older adults is pertinent to working with dementia, it is also important to understand it specifically, due to the increasing prevalence and particular complexities of the condition.

There is an established literature on student preferences for working with older people, and systematic reviews have been conducted synthesising this literature on

nursing students (Neville et al., 2014, Sizer et al., 2016, Garbrah et al., 2017) and medical students (Meiboom et al., 2015b).

In the most recent review, Garbrah and colleagues (2017) conducted an integrative literature review on nursing students' career preferences for working with older people. They presented four key themes for low preference: socio-demographic factors; experiences, perceptions and knowledge about ageing; perceptions concerning the nature or status of careers working with older people; and theoretical studies and practical education of nursing curriculum (Garbrah et al., 2017). Their main conclusion was that current curricula may be hindering students taking up a career in older people's nursing. A limitation of the review was that the inclusion criteria were restricted to preferences towards long-term care (LTC) and excluded intervention studies.

Neville, Dickie and Goetz (2014) systematically reviewed the literature on students' career preferences for working with older people and concluded that nursing students had a low preference for four key reasons: societal values about ageing; undergraduate nursing curriculum; clinical placements; and working conditions (Neville et al., 2014). Similarly, to Garbrah et al, (2017), the studies included were limited to those exploring preferences for working in LTC.

Sizer et al. (2016) conducted a thematic analysis of research looking at attitudes towards working with older people in registered and student nurses and identified factors relating to the practice and university environment. The review highlighted the importance of faculty members, mentors and other students in influencing perceptions (Sizer et al., 2016). However, while this review related some factors to preferences (as attitudes towards working in this field) they included studies that looked at attitudes in general.

A systematic review of medical students' interest in geriatrics was conducted by Meiboom and colleagues (2015). This review concluded that geriatric medicine is not a popular choice because: medical students prefer to work with younger patients; view geriatric cases as too complex; and view it as having a perceived lack of status and financial rewards. The authors suggest that increased clinical education may increase interest (Meiboom et al., 2015b).

In summary, these reviews outline factors that are associated with a low preference of working with older adults including perceived low status, the type of work and environment, as well as the influence of education and educators. Common factors can be seen for medical and nursing students.

3.1.2 The rationale for this review

There are no systematic reviews that have been identified by the author, that explore student preferences in relation to working with patients with dementia. A systematic review was undertaken as the first sub-study in this mixed methods thesis for two reasons. First, to provide an overview of existing knowledge (and identify gaps in, and the quality of, existing literature) as a foundation and direction for the research. Second, to meet the wider theses aim of creating a conceptual framework, by ensuring that all known or possible factors are comprehensively addressed.

This review included the literature on preferences towards both older adults and people with dementia. The rationale being that selecting literature only related to dementia would be too narrow as there is limited research in this area, and it would not take into account learning from the broader, relevant, older adult literature. Information specifically relevant to dementia was identified within studies of older adults.

Previous reviews have focused on preferences related to a single type of healthcare student. This thesis aims to explore both medical and nursing students therefore both have been included. A preliminary review of the literature suggests some factors may be influential across medical and nursing students. Therefore preferences of both these healthcare professionals were explored together in order to develop a comprehensive understanding and allow for differences and commonalities between student groups to be identified. Consequently, this review is novel in its cross-disciplinary nature.

This review is more inclusive than previous reviews in the types of preferences and factors it explores. Previous reviews have been limited to LTC, or geriatric medicine. This review encompassed clinical settings and specialties related to working with older adults and people with dementia as well as patient groups (older adults and

people with dementia) and included studies of interventions. This is because it aims to cast a wide exploratory net. While all variants are included, attention was made to specifying the definitions of preferences measured.

3.1.3 Objective and research questions

The objective of this sub-study was to identify and consolidate the existing literature on factors associated with career preferences of medical and nursing students, specifically in relation to dementia and to older adults generally. The research questions were:

Q1. What factors are associated with preferences for working with older adults and people with dementia?

Q2. What is known about the career preferences of healthcare students specifically in relation to working with people with dementia?

Q3. What are the differences and similarities between medical and nursing students?

3.2 Method

3.2.1 Protocol and registration

A protocol was written adhering to PRISMA-P guidelines and registered on Prospero (CRD42018104647, Booth et al., 2012). A narrative synthesis was employed based on the guidance of Popay and colleagues (2006) and a data-based convergent method was used to synthesise quantitative and qualitative results (Hong et al., 2017).

3.2.2 Eligibility criteria

Studies included were those that investigated factors associated with career preferences related to working with older adults or patients with dementia in nursing or medical students. A summary is presented in Table 2.

Table 2: Summary of Inclusion Criteria

Inclusion

1. Career preferences AND
2. Older adults OR dementia, AND
3. Medical or Nursing students

Topics:

- Factors associated with career preferences OR
- Career preferences as an outcome of an educational intervention (i.e. where the intervention is considered the factor)

Exclude

- Postgraduate training and professionals
- Studies that do not measure career preferences related to either older adults or dementia.

Population

The population of study included medical and nursing students and excluded all other healthcare disciplines. Studies conducted in any country were included. Students in advanced training courses such as postgraduate courses after registration were excluded. Medical student populations were included up to specialist training or equivalent (in the UK, this included FY1 and FY2 years). Where more than one student group was investigated the study was included if all participants were medical and nursing students, regardless of whether the results for each group are presented together or separately. However, if not all participants are either medical or nursing students or the relevant data is not presented separately for each group it was excluded.

Construct of interest

The construct of interest was student preferences (positive or negative) for working with older adults or people with dementia. Due to variability in terms, this included measures of 'intent to work', 'career choices' 'specialty choice' or 'specialty interest'. Measures of attitudes towards working with people with dementia or older people were included where they were clearly measuring attitudes towards work or careers, as opposed to general attitudes.

Only preferences of students, as opposed to registered healthcare professionals, were investigated. Future career destinations or applications (as a measure of preference) were included only if student factors were being explored. This excluded studies looking at applications compared to eventual destinations but included studies that look at educational or individual characteristics upon workforce entry. There was no restriction on the type of measures of career preferences. Qualitative explorations of preferences were included.

The types of preference being measured required direct relevance to older adults or dementia to be included. This included preferences measured in relation to patient populations, specialties and settings; an overview is presented in Table 3.

Table 3: Relevant types of career preferences

	Include	Exclude
Patient populations	Older people, people with dementia, older adults with memory loss, Younger people with dementia	Long-term conditions
Specialties	Geriatrics, old age psychiatry, older adult mental health, stroke (older people), Palliative care (older people)	Neurology
Settings	Long-term care, care homes, community (older people), memory services, community mental health (older people), Stroke ward (older people)	Practice nurses

Types of studies

All empirical articles were included, including quantitative, qualitative and mixed method studies and theses. Conference reports or opinion pieces were excluded. Systematic reviews were not included but their references were scanned for studies that meet the inclusion criteria. Studies must have been published in English. Only studies published from 1995 onwards were included. This cut off was a pragmatic decision based on being expansive but not exhaustive (22 years), excluding papers before key changes in nursing and medical education in the UK. This includes the modernising healthcare careers programme (Greenaway, 2013, Willis, 2015) and changes in specialist training pathways implemented in 1995 (Calman et al., 1993).

There was no restriction on the topic of studies but they needed to explore career preferences (as defined) with associated factors (variables associated with high/low preferences for working with older adults or dementia) or educational interventions (assessing the impact of an intervention on the popularity of field). If a study only explored the relationship between an intervention and career preferences, it was only included if it had a comparison group, such as a control group or a pre/post design.

3.2.3 Information sources

The initial search was conducted on the following online databases: MEDLINE, PsycINFO, CINAHL, BNI, ERIC and google scholar. To identify further possible relevant articles, the references of included articles were searched (snowballing) and 'related' and 'cited by' functions of online databases were used (lateral searching).

3.2.4 Search strategy

Several exercises were conducted to inform the search strategy to ensure it was both inclusive and relevant. Firstly, a scoping review was undertaken looking at dementia and career preferences. This established that only including research on career preferences specifically related to dementia would be too narrow. A second scoping exercise was conducted identifying previous literature reviews related to older adults or dementia to look at common constructs and search terms. Initial search terms were formed and used for a preliminary search to see the number of results returned. A medical school specialist librarian was then consulted to inform the final search strategy. An outline of each concept and example of search terms is below in Table 4. Index terms (e.g. MeSH) were also used alongside these key terms. An example search strategy and returned results can be seen in Appendix B.

Table 4: Example Search Terms

General term	Search terms
Career preference	(preference adj3 work*) "career preference" or "career choice" or "intent* to work" or speciali*ation or "career intent*" or "special*ty choice" or "special*ty interest" or (Special* adj4 interest*)
Older adult/dementia	"older adult*" or "older people" or elder* or dementia or geriatric* or aged
Healthcare student	(student* ad j3 nurs*) or "medical student*" or "allied health* student*" or "health* student*

3.2.5 Study selection

Identified references were added to EndNote (version X7). This software was used to remove duplications and share reference lists between researchers. After duplicates were removed, articles were screened against eligibility criteria independently by two reviewers (MH & JS) in two stages. First, by title and abstract, and second, all full texts were retrieved and independent screening continued. If there was disagreement, a third reviewer was consulted (SD).

3.2.6 Data extraction and analysis

An extraction template was developed and discussed with the team. It was piloted by the four researchers using three papers. These were cross-referenced, all divergences were discussed, and guidance produced for clarity. The final template and guidance are presented in Appendix C.

Key features of the data extraction template included:

- Only relevant data to preferences was extracted and only data related to nursing or medical students (if paper included other data).
- Statistical probability was set at $p < 0.05$, or else recorded as non-significant.
- For qualitative studies, only major themes (with description/quotes), clearly related to preferences, were included as factors.

The remaining papers were extracted independently by two reviewers: MH and either GS and JS, with disagreements resolved by SD. Data extraction records were entered into Microsoft Word (2016) and then a template in Microsoft Excel (2016), for easier manipulation of data for synthesis.

During the screening, multiple papers that appeared to present results from the same study were noted, to avoid conflation of results. During extraction, the relationship between papers was assessed, the approach agreed and data extracted by two researchers (MH and SD). The following points were agreed upon: a) if papers present the same data and results, they were extracted as one study; b) when extracting results from published sub-studies from a thesis, results in thesis take priority; and c) where there was an unclear relationship between papers both were extracted. A record of duplicates, relationships and the approaches taken were kept.

3.2.7 Quality assessment

Risk of bias was explored using the Mixed Methods Appraisal Scale (MMAT) (Hong et al, 2018). This scale is widely used for an appraisal where mixed method studies are included, as it takes particular consideration of mixed method studies (Hong et al, 2017).

Each paper was rated during extraction by two independent reviewers. Papers were not excluded based on MMAT ratings as recommended (Hong et al 2018). Instead, the ratings were used to provide a narrative description of the overall quality and to present common limitations and strengths of the literature. This was due to the exploratory nature of the review, and the aim of assessing the overall quality of the current literature.

The MMAT requires reviewers to identify the category of study design to appraise. For this systematic review, a number of considerations were given. First, some studies which reported using both quantitative and qualitative methods, or self-described as mixed methods did not meet the definition of mixed methods, namely that each method is used rigorously in own right prior to integration (Pluye and Hong, 2014). Therefore, the questions in the mixed methods category were not appropriate

to assess the quality of these papers. For example, cross-sectional surveys, which included open questions, were often classed by the reviewers as quantitative descriptive (rather than mixed methods) where the analysis of open text questions was supplementary and would not be considered a rigorous qualitative study.

Second, the type of data being extracted was considered. For example, if a paper presented a multi-staged project in which only one phase/study was relevant to this review (i.e. career preferences), the methods in that single study were used to define the type of study.

In practice when choosing the appropriate category for a study, decisions were based on what MMAT questions would be most appropriate to review the study and by agreement of the two reviewers (with the third reviewer where needed).

When addressing each of the five quality questions consideration of the whole paper was given, not just the extracted data, but issues central to the measurement of career preferences were recorded and weighting given to these issues; such as measures used, and data used in the analysis of preferences.

3.2.8 Synthesis

A narrative synthesis approach was used as it allows integration of qualitative, quantitative and mixed method studies and a quantitative meta-synthesis would not be possible due to the variability of definitions and measurements for career preferences.

Popay and colleagues (2006) outline four elements of a narrative synthesis: consideration of theory, preliminary synthesis, exploring relationships, and robustness of synthesis. In relation to theory, this systematic review did not start from a theoretical framework, as it was exploratory in nature.

In terms of the robustness of the synthesis, this was addressed using the MMAT (as described above) and by a reflective approach, namely reviewing findings and synthesis of factors in academic supervision.

In relation to the preliminary synthesis and exploring relationships, this was dictated by the three research questions as follows:

Q1. What factors are associated with preferences towards working with older adults and people with dementia in healthcare students?

The inclusion of mixed method studies means that a data-based convergent synthesis was used (Hong et al., 2017), where both quantitative and qualitative data were considered together and qualitative data was quantified by labelling qualitative themes under relevant factor headings. This allowed supporting studies for each factor to be presented.

Factors were identified by researchers inductively, using the most consistently used terms by the authors of papers where possible. The labelling of factors for both quantitative variables and qualitative themes were considered during extraction, and allocated by MH during synthesis, but discussed in supervision with the team to assess fit. Factors were then grouped into categories and the relevance of fit assessed between MH and SD.

Q2. What is known about the career preferences of healthcare students specifically in relation to working with people with dementia?

During extraction, studies that specifically looked at preferences related to dementia were highlighted and any information related to dementia extracted from all other studies. These results were collated and a distinct narrative summary was produced of these studies.

Q3. What are the differences and similarities between medical and nursing students?

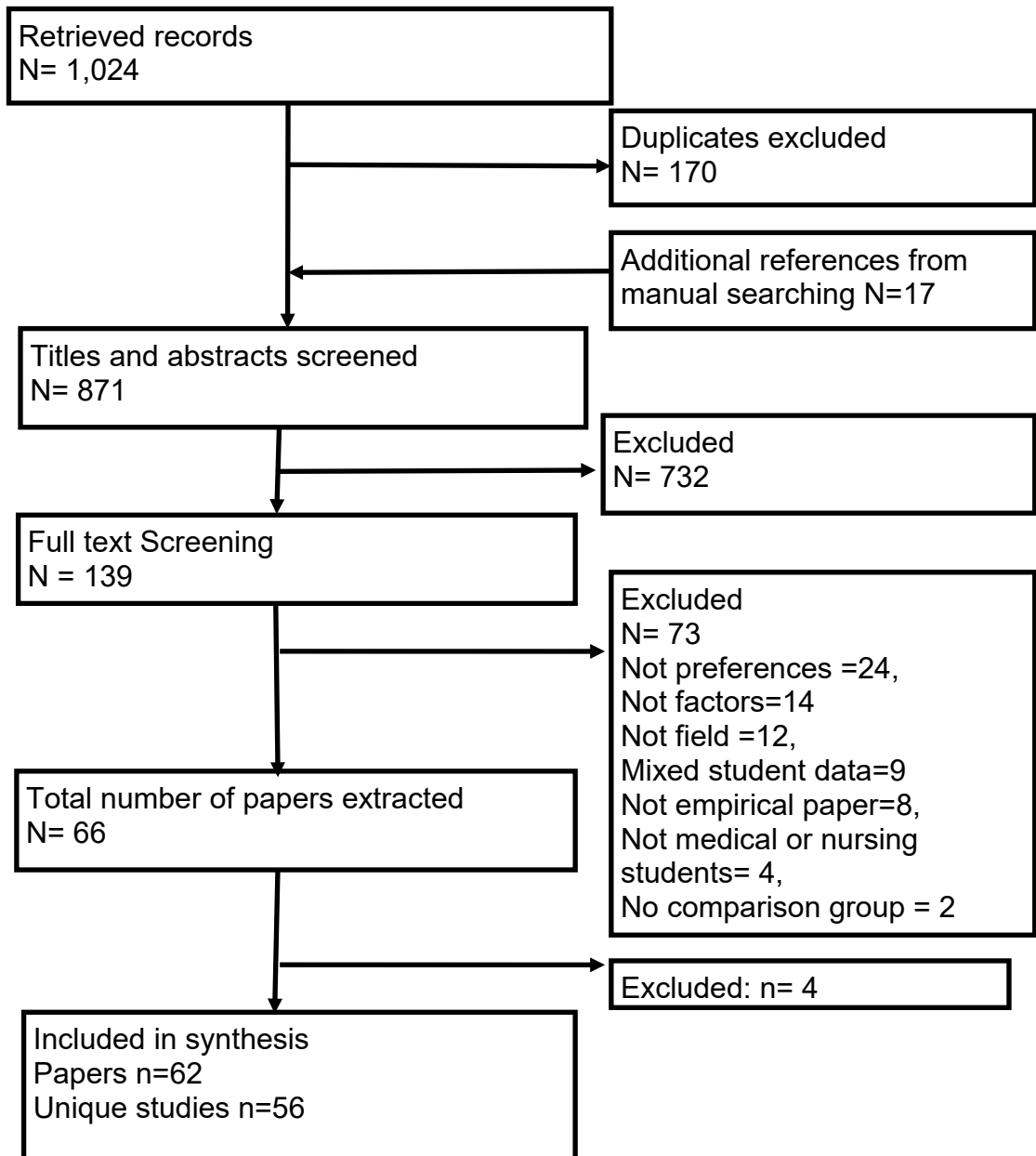
The literature relating to medical or nursing students was made explicit and presented separately for each factor. A comparison was made and a narrative description was produced.

3.3 Results

3.3.1 Study selection

The search was conducted on 20.09.2018. Searches were saved and alerts reviewed for possible new papers. Figure 3 below outlines the number excluded at each stage.

Figure 3: Study Selection



After duplicates were removed, there were 871 papers to be screened by title and abstract. 66 papers were included in extraction. Four studies were excluded during extraction because they did not meet the inclusion criteria. This was due to the significance of factors being unclear or not reported (Torrible et al., 2006, You et al., 2015) or qualitative themes not being separately presented for student participants, where staff also included (Smith, 2014). This comprised 56 unique studies (62 papers) after considering the multiple publication of data.

Studies characteristics

An overview of the 56 studies is presented in Appendix D

The majority of studies were cross-sectional in design (n=30). There were nine quasi-experimental studies, seven qualitative, seven longitudinal studies and three mixed method designs. The use of open questions was commonly used in both cross-sectional and longitudinal surveys to explore preferences (n=12).

Five studies were from the UK. The highest number was from the USA (n=14) followed by Australia (n=6), Canada (n=5), Israel and China (n=3). There were two papers each from Hong Kong, Turkey, Taiwan, Saudi Arabia, Sweden, and one from Finland, Ireland, Jordan, New Zealand, Norway, Malaysia, Philippines, Singapore and Sri-Lanka. One paper compared results from Australia and China.

38 studies investigated the preferences of nursing students, 17 of medical students; with only a single study exploring both.

Research quality

Research quality was variable. Out of a possible score of five on the MMAT, with one being an indicator of the poorest quality, 6 studies scored two, 21 scored three, 22 scored four and 7 scored five. Individual MMAT scores can be seen in Appendix D. Common issues included the use of non-standardised measures, and poor construct definition. Additionally, where educational interventions were evaluated, these often lacked comparison groups or did not allow for confounding variables. Finally, longitudinal studies had constantly low follow up rates (<60% for follow up), this appears characteristic of cohort studies using questionnaires with students.

Career preference definitions

Of the 18 studies that explored preferences of medical students, 16 investigated interest, willingness or likelihood of pursuing geriatrics, one studied preferences for working with older people and a single study explored preferences towards working with people with dementia.

The type of career preferences explored for nursing students varied and was often inconsistent within studies. Only one study investigated the intention to work in dementia care (McKenzie and Brown, 2014). The majority of studies looked at preferences for working with older people. Terms used included 'willingness', 'intent', 'likelihood', and 'considering working with older people'. These were often used interchangeably. Six studies specified preferences towards clinical settings such as care homes, LTC or working with older people in a hospital or community settings (Zisberg et al., 2015). Some studies used working with older people and clinical settings interchangeably, however one study specified settings and age group of patients and distinguished preferences for both (King et al., 2013).

Measurement of career preferences

The most common type of quantitative measure of preferences was a single item measured on a Likert scale (n=23) such as "In the future I would consider a career in geriatric medicine" with responses ranging from (1) strongly disagree to (5) strongly agree (Hughes et al., 2008). Eleven studies used a variation of a ranking scale, with the most common based on the work of Stevens and Crouch (1998), which ranks nine preference options in nursing, including working with older people. Other versions included 10 choices or had two rankings based on patient age group and clinical settings (King et al., 2013). Seven studies reported using scales developed for individual studies, including one measure of dementia preference (McKenzie and Brown, 2014).

Seven studies recorded career preferences with named measures including:

- Motivation to choose Gerontological Nursing Career (MGNC). Developed by researchers for individual study (Cheng et al., 2015).

- Willingness to care for older people scale (Liu, 2001, used in (Chi et al., 2016)).
- The Students' Interest in Nursing Older People Scale (SINOPS), Researcher developed scale (Koskinen, 2016).
- Students' intent to work with the elderly scale and Willingness to Take Care of the Elderly Inventory (Zakari, 2005).
- Care Willingness scale (CW), developed by researchers (Zhang et al., 2016).

In the seven qualitative studies methods of investigating preferences included focus groups (n=4), individual interviews (n=2), and a semi-structured questionnaire (n=1). Other qualitative methods used included reflective essays (of placements) and open text questions (to explain choices, reasons or barriers).

3.3.2 Q1. What factors are associated with preferences towards working with older adults and people with dementia?

A summary of synthesised factors associated with preferences for working with older people or people with dementia can be seen in Appendix E. Factors are represented by either quantitative variables or qualitative themes. These factors were grouped into seven categories, which are discussed as follows:

1. Student characteristics
2. Experiences of students
3. Course characteristics
4. Career characteristics
5. Patient characteristics
6. Work characteristics
7. Theory of planned behaviour

Category 1: Student characteristics

This category encompasses characteristics of the students such as demographics. It also includes their family characteristics and their knowledge and attitudes in relation to older people.

Age

There was limited support for an association with age. This was one of the most frequently investigated demographic factors, but only three studies related to nursing found a significant relationship. Two found that younger students were more likely to want to work with older people (Shen and Xiao, 2012, Lee et al., 2006), whereas one found that older students had a higher level of intention to work in dementia care (McKenzie and Brown, 2014).

Gender

There was evidence that female gender may be associated with a higher preference in medical students (Rathnayake et al., 2016, Boyle et al., 2014, Chua et al., 2008, Diachun et al., 2006b) and nursing students (Koskinen, 2016, Che et al., 2018). However, one study found higher preferences in male students, with the suggestion that this may be due to cultural differences, as opportunities in other settings might be limited due to traditional roles (Ben Natan et al., 2015).

Ethnicity and nationality

Ethnicity and nationality were not explored in many of the studies relating to preferences but when assessed, associations were found. Nursing students in China held higher intentions than students in Australia (Xiao et al., 2013) and Jewish students less intention than Arabs in Israel (Zisberg et al., 2015). In medical students, preferences were higher in white groups (vs other ethnic groups) in the USA (Voogt et al., 2008) and Irish (vs non-EU) in Ireland (Ní Chróinín et al., 2013). In nursing students in Malaysia, the greatest preferences were found in Indian, then Malay, then Chinese students (Che et al., 2018). In medical students, no association was found between the same nationality comparisons in Singapore (Chua et al., 2008).

Religion

This has only been explored with nursing students. The quantitative literature on religion was inconsistent: two studies show a relationship (Alsenany, 2010, Ben Natan et al., 2015), whilst two do not (Chi et al., 2016, Haron et al., 2013). In the qualitative literature, one study in Saudi Arabia found that student's value for caring for older people was positively influenced through ideas of religion, culture and family in positive regard (Zakari, 2005).

Year of training

The research indicates that preferences are associated with earlier years in training in nursing students (Zisberg et al., 2015, Stevens, 2011, Lee et al., 2006, Gould et al., 2012, Happell and Brooker, 2001) and in medical students (Diachun et al., 2006a, Diachun et al., 2006b). However, this is made less clear by two contradictory studies in nursing students. One study found that the mean ranking for working with older people increased throughout training (King et al., 2013), and another found nursing students in year three of training held significantly higher preferences than previous years, however, the mean preference was recorded at its lowest in the 4th year of training (Che et al., 2018).

Family characteristics

Characteristics of students' families have been identified which appear to influence student preferences and there is moderate support for an association. In nursing, this includes students whose parents have a positive attitude to older people, not being an only child (Cheng et al., 2015), and having a close relationship with an older adult (Cheng et al., 2015, Chi et al., 2016). In medical students, no association with close relationships was found (Voogt et al., 2008, Fitzgerald et al., 2003) but those with higher intentions to work with older people reported a positive influence of a friend or family member (Boyle et al., 2014).

Qualitatively, one study In the USA identified a theme 'family ties' which describes a link to family and ethnic culture. They state that those who were more interested in geriatrics described caring for family members out of love. Those who were not interested described showing respect for elders and caring for the family as inappropriate. In summary, they suggest those interested and those not describe

different relationships and perspectives on the role of the family in caring (Schigelone and Ingersoll-Dayton, 2004).

Knowledge

In the quantitative literature, there was limited support for an association with knowledge. Knowledge was measured in seven studies using variations of the Facts on Ageing Quiz (Palmore, 1988). Only two nursing studies found a positive association (Zhang et al., 2016, Lee et al., 2006). Non-significant associations were also found with students' knowledge of community resources for older adults (Lee et al., 2006) and self-assessed knowledge (de Guzman et al., 2013).

Qualitatively, five themes relating to knowledge were identified in nursing students (Zakari, 2005, Shen and Xiao, 2012, King et al., 2013, Fagerberg et al., 2000, Happell and Brooker, 2001). These represented clinical skills and attributes of the students rather than objective knowledge. Together they suggest that students may feel a personal deficit in their ability to work with older people that influences preferences, with examples of students describing lack of confidence and ability, feeling underprepared, and not personally suited because they lack necessary attributes.

In medical students, one qualitative study found that a lack of knowledge about academic careers and experience with older people was the most cited barrier to pursuing geriatrics or an academic geriatric career.

Attitudes

Aside from the demographic variables, attitudes were the most researched construct in both nursing and medical studies, with strong evidence of a link between positive attitudes towards older people and preferences. Two main types of attitudes were found: those towards older people in general and those towards patients. General attitudes to older people were found to be positively associated in 13 studies of nursing students (see Appendix E) and in the one study of medical students and nursing students (Ayoğlu et al., 2014). Concerning attitudes to patients, a positive relationship was found for both medical (Voogt et al., 2008, Hughes et al., 2008,

Fitzgerald et al., 2003, Chua et al., 2008) and nursing students (Pan et al., 2009, Cheng et al., 2015, Chi et al., 2016).

Category 2: Course characteristics

With one exception, there was no support in the quantitative literature for a relationship between course characteristics and preferences. The exception was, a nursing study where a relationship between public (vs private) institutions was found (Che et al., 2018). Course setting for nursing (College or Diploma vs University) was found to be associated in one study (Haron et al., 2013), but not in another (Che et al., 2018) making the relationship unclear. A lack of association was found in studies looking at the content of geriatric teaching for both medical (Robbins et al., 2011) and nursing students (Dunkle and Hyde, 1995, Che et al., 2018).

Category 3: Experiences

Experiences of students emerged as a substantial category, with quantitative data supporting the phenomena described in qualitative studies. This includes previous experiences prior to training, experiences in training (clinical placements and educational interventions) as well as experiences in general.

Previous experience

Experiences with older people before training in both medical and nursing students were explored repeatedly as a variable. This included any previous experience (undefined), paid work or voluntary experience.

There was only a single study of medical students that found an association with previous experience (Robbins et al., 2011), the majority did not (Voogt et al., 2008, Hughes et al., 2008, Fitzgerald et al., 2003, Diachun et al., 2006b, Chua et al., 2008). Qualitatively, one theme relating to students previous experience of working with older people was identified as affecting their decision on where to work after graduation, with negative experiences discouraging students from working with older people (Fagerberg et al., 2000). While not directly related, there was some evidence that medical students entering the course at graduate level entry had a stronger preference than those without (Ní Chróinín et al., 2013).

For nursing students, evidence of an association is stronger. A significant relationship was demonstrated for previous experience (Zhang et al., 2016, Haron et al., 2013, Brown et al., 2008, Cheng et al., 2015), paid work (Zisberg et al., 2015, Koskinen, 2016, Henderson et al., 2008) and volunteering experience (Chi et al., 2016). Yet equally, some studies found no association (Shen and Xiao, 2012, Che et al., 2018, Carlson and Idvall, 2015, Dunkle and Hyde, 1995). Three studies suggest that the amount of experience is a factor (Stevens, 2011, Koskinen, 2016, Chi et al., 2016).

Clinical placements

A relationship was found between positive placements and preferences in nursing (Lea et al., 2016, Cheng et al., 2015), and medical students (Boyle et al., 2014). In addition, there was a relationship between medical students who perceived that placements affected their preference choices, and their actual preferences (Diachun et al., 2006b).

Qualitative nursing studies have identified clinical placements as influencing preferences (King et al., 2013, Brown et al., 2008, Abbey et al., 2006). One study outlined how good quality placements led to positive perceptions of working with the elderly, whilst poor quality placements led to negative perceptions of working with the elderly, citing the 'transformative nature of placements' (Brown et al., 2008). Another study reported that placements that challenged their assumptions about working with the elderly and affected their choice by either confirming or challenging their expectations of what practice would be like (King et al., 2013).

Quantitatively, nursing studies explored the aspects of placements that are associated with preference. They found several factors including the pedagogical atmosphere and rating of supervisory relationship (Carlson and Idvall, 2015); usefulness of feedback; supportiveness of nurse mentors and care workers (Lea et al., 2016); and setting of placement, for example, care home versus general ward (Che et al., 2018). The role of mentors in placement was also supported qualitatively, in which they described those in a mentoring role in older people's or care home placements as less effective than in acute care (Fagerberg et al., 2000).

Educational interventions

In this systematic review, educational interventions were classed as any type of educational programme that was purposely evaluated with a comparison group. There was some evidence that positive preferences were associated with taking part in these tailored programmes for medical (Ní Chróinín et al., 2013, Lu et al., 2010, Jefferson et al., 2012, Hughes et al., 2008) and nursing students (Koehler et al., 2016, Fox and Wold, 1996, Alsenany, 2010). A table with details of the interventions reviewed, and results for associations with preferences, is presented in Table 5.

Table 5: Summary of educational interventions

Intervention	Intervention Details	Comparison	
Podcast on geriatrics (Byszewski et al., 2017)	Develop and evaluate an informational podcast on geriatrics	pre/post	ns
'Vital Visionaries' (Gonzales et al., 2010)	An intergenerational art program	pre/post with a control group	ns
Clinical geriatric training program (Hughes et al., 2008)	An intensive 8-day clinical geriatric training program was delivered to fourth-year medical students	pre/post	sig +
PAIRS Program (Jefferson et al., 2012)	Medical students are paired with an older adult with a diagnosis of dementia for visits over a year	n/a	Theme: influence on specialisation
Senior Teacher Education Partnership (STEP) program. (Lu et al., 2010)	Medical students are paired with older adults living in the community and participate in activities together.	pre/post with control group	sig+
Medicine in community module (Ní Chróinín et al., 2013)	6-week module in 4 th -year medical students, including clinical attachments and various formal teaching.	pre/post	sig +
Experiential education vs didactic approach (Diachun et al., 2006a)	3-hour didactic lecture or a 3-hour experiential learning session that included simulation of experiencing visual and physical impairments and participation of older adults in teaching.	Didactic vs experiential After intervention and Year later (no pre-test).	ns
Gerontological course in final year (Fox and Wold, 1996)	15 hours theory (workshops) and 67 hours clinical in senior student nurses.	pre/post	sig+
Gerontological course (Koehler et al., 2016)	Stand along gerontological course for year 4 nursing students, includes formal teaching and partnerships with older adults.	pre/post	sig+

Intervention	Intervention Details	Comparison	
Clinical hospital placement (Alsenany, 2010)	32 weeks clinical experience caring for older people in a hospital setting.	pre/post	sig+
The Learning with Older People Programme (LOPP) (Koskinen, 2016)	Five-day learning programme focused on health promotion and wellbeing of older people, with older people participating with teaching.	pre/post	ns
Aged care placement (McKenzie and Brown, 2014)	Aged care placement (clinical placement)	Participated Yes/No	ns

General experiences

This factor covers literature pertaining to how experiences, not attributed to a particular context, influenced preferences. Qualitatively whether experiences with older people had been positive or negative (in various settings) were considered influential and regarded as a central theme for nursing (Zakari, 2005, Henderson et al., 2008) and medical students (Schigelone and Ingersoll-Dayton, 2004, Curran et al., 2015). Quantitatively, one study found that if nursing students' previous experience was reported as positive, they were more likely to prefer working with older people (Brown et al., 2008).

A dichotomy was found by a study that suggested interactions with elderly were described positively in work and personal contexts. However, students did not wish to work with older people because of their negative experiences of the work, particularly in LTC (Gates et al., 2009).

Category 4: Career characteristics

This category encompasses positive aspects of a career generally and not only within a healthcare career.

Professional development

This was a pertinent factor for nursing students. Qualitatively it was suggested that nursing students viewed the potential for development in careers with older people negatively (Stevens, 2011) and as having limited opportunities for progression (Abbey et al., 2006). It was also suggested that students are more likely to seek new and different experiences post-qualification (Happell and Brooker, 2001) and view older people's services as an area to work later in their careers (Herdman, 2002, Abbey et al., 2006). One study found that those with higher preference also rated that the potential opportunity to pursue a Clinical Nurse Specialist role (within older people's services) would be an influencing factor in their decision (Haron et al., 2013).

No support was found for medical students relating to concerns for professional development; in fact, one study noted that students mentioned that a positive was

the increased demand for geriatric care as a positive aspect of the career (Herdman, 2002).

Financial and prestige considerations

There was supporting evidence for this factor in both medical and nursing students. While financial and prestige considerations are distinct factors and not intrinsically linked, they are often grouped together in the literature. The negative impact of perceived limited financial rewards and professional status was found with quantitative variables (Lea et al., 2016, Diachun et al., 2006b) and qualitative themes (Shen and Xiao, 2012, McKenzie and Brown, 2014, Abbey et al., 2006, Bagri and Tiberius, 2010, Curran et al., 2015). For example, medical students described how being a geriatrician was seen as less glamorous (Bagri and Tiberius, 2010) or 'sexy' (Diachun et al., 2006b) and nursing students perceived working with older people as having less professional status, that they felt was reflected in pay and respect (Abbey et al., 2006).

Lifestyle considerations

One study investigated how lifestyle considerations may affect preferences for geriatrics; they found a non-significant association for general lifestyle considerations but found students who reported length of training as not being a barrier held higher preferences (Diachun et al., 2006b). Another study found preferences higher in those who rated opportunities to travel as important when considering career (Ní Chróinín et al., 2013).

Category 5: Work characteristics

This category includes predominantly qualitative studies where students described the nature of the work (consistently in negative terms) in relation to preferences. The overall impression was that working with the elderly is seen as both boring and complex, emotionally and physically challenging, set within poor working environments, with the focus on patient's quality of life (rather than cure) being a deterrent. Limited positive attributes were described such as the ability to form long-term relationships with patients, and the rewarding nature of work.

Boring and unchallenging

This theme appears as a distinct factor in both medical and nursing groups. For nursing studies, perception of clinical work with older people was discussed as boring and lacking challenge (Shen and Xiao, 2012, Kloster et al., 2007, Herdman, 2002, Henderson et al., 2008, Fagerberg et al., 2000, Carlson, 2015). One study found that students mostly described the elderly in a positive way; however, positive views of the elderly were outweighed by negative views of the actual work. Reasons for not wanting to work with this client group were that the work was too monotonous and there was little to learn (Fagerberg et al., 2000).

In medical students, 'lack of intellectual stimulation' in which students reported that geriatrics did not pique interest in students or challenge them, was described as their most common concern in one study (Bagri and Tiberius, 2010). Another found that regardless of their preferences, students described the work as boring (Schigelone and Ingersoll-Dayton, 2004).

In nursing, those who rated working with older people as having diversity (in clinical practice) had a higher preference (Haron et al., 2013) and low preferences were related to a perception of exposure to limited variation in illness and experiences (McKenzie and Brown, 2014, Happell and Brooker, 2001).

Complexity

In medical students, one study identified the complexity of managing multiple problems in older people, with most seeing this as a negative aspect of the role, whereas others believed that it could bring opportunities for innovation (Bagri and Tiberius, 2010). Two other themes around the complexity of work included difficulty with ethical issues (Bagri and Tiberius, 2010) and the requirement to have a large generalist knowledge base (Samra, 2013). In terms of quantitative variables, one quantitative study found that the complexity of patients was not associated with preferences but students who agreed that a lack of comfort with ambiguity was a barrier to pursuing geriatrics, also held lower preferences (Diachun et al., 2006b).

Emotional nature of work

This was another distinct factor for both medical and nursing students within perceptions of working with older people. In nursing students, the work was described as emotionally challenging due to the nature of conditions (Swanlund and Kujath, 2012). This was also regarded as a barrier to dementia care (McKenzie and Brown, 2014). For medical students, caring for older people was seen as being emotionally draining and having an impact on psychological wellbeing, yet some felt that managing end of life care could be rewarding (Bagri and Tiberius, 2010).

Fear of death and ageing was a recurring theme for both nursing (Henderson et al., 2008, Happell and Brooker, 2001) and medical students (Schigelone and Ingersoll-Dayton, 2004). Students cited fears, discomfort, and distress with death and ageing both in relation to witnessing patients dying and in confronting their own fears (Henderson et al., 2008, Happell and Brooker, 2001). One quantitative study found that student nurses with less anxiety of ageing were associated with higher preferences (Cheng et al., 2015).

However, this was contrasted in the medical literature; with the authors of one study suggesting that students may be drawn to the area they most fear. They found that those more interested in geriatrics were more likely to discuss the fear of death or elderly, whereas those less interested described more emotional impact from other conditions, for example in young patients (Schigelone and Ingersoll-Dayton, 2004).

Control and autonomy

One quantitative study found that nursing students with higher preferences also rated nursing professionals as having greater professional powers in elderly care. This was also reflected qualitatively in themes around lack of control being a deterrent, suggesting that nursing students feel they had responsibility yet did not have the agency to act and influence practice (Fagerberg et al., 2000, Abbey et al., 2006). Additionally, students were more motivated to work with older people if they could see a way to make a difference in their patients' lives (Gates et al., 2009). Students described how they felt they had autonomy in the workplace, but feared this, due to a lack of appropriate support (Fagerberg et al., 2000, Abbey et al., 2006). This independence was also described as a positive attribute by some students (Carlson, 2015). It appears that for nursing students, working with older people can

be associated with autonomy, which can be seen as a positive, if they have the control, with power and support, to effect change.

Environment

For nursing students, an association was found between preferences and those who rated working conditions higher (Haron et al., 2013). This was also reflected qualitatively as a reason for positive preference due to less stress and a more 'harmonious environment' (Carlson, 2015). Conversely, a negative working environment (Shen and Xiao, 2012) and the poor quality of work-life (Gates et al., 2009) was cited as reasons against working with older people. Other factors included staff being unskilled and unmotivated (Carlson, 2015) and lack of financial resources affecting care (Fagerberg et al., 2000). Medical students also described a lack of staff and a strained work environment as negatively affecting upon preferences (Samra, 2013).

The focus of Quality of Life (QoL) as a barrier

Student perceptions around the impact they can have on patients and their role was a factor, especially if QoL, rather than cure is the goal of treatment.

One study noted the differences between those with interest in geriatrics and perceptions of the role of doctors; with those who hold negative perceptions about geriatrics tending to highlight the frustration of not being able to 'treat' patients, whereas those interested in geriatrics focused on improving patient QoL and how the work can be rewarding (Schigelone and Ingersoll-Dayton, 2004). Medical students who were more interested in geriatrics were more likely to agree that the focus of patient QoL (as opposed to cure) was not a barrier to pursuing geriatrics (Diachun et al., 2006b).

Nursing students recognised the need for person-centred care but felt they would not be able to work holistically and promote quality of life due to the realities of working practices, particularly for residents in LTC (Gates et al., 2009, Fagerberg et al., 2000).

Heavy workload/physicality

The physically demanding nature of the work was a factor for nursing students including manual handling and workload (McKenzie and Brown, 2014, Kloster et al., 2007).

Technical procedures

Higher preferences for geriatrics in medical students was associated with less importance of procedures (Ní Chróinín et al., 2013) however this was not related in another study (Diachun et al., 2006b).

Positives of work

Work characteristics were most frequently described in negative terms; however, some distinct positive factors were identified. For nursing students, a positive variable was the ability to provide continuity of care (Haron et al., 2013), and this was reflected qualitatively in the theme of 'long term relationships' (Carlson, 2015). For medical students, one study looked at perceptions of geriatric medicine in medical students (Schigelone and Ingersoll-Dayton, 2004). They found those interested described positives such as a slower pace with increased and longer-term patient contact.

Nursing students described work could be 'meaningful and enjoyable' (Kloster et al., 2007, Carlson, 2015) and could gain enjoyment, wisdom from older people, a sense of giving back to the older generation and satisfaction in promoting independence and spiritually rewarding (Zakari, 2005). One study described how nursing students felt that preferences would be encouraged by 'developing a value for gerontology' through developing relationships with patients in order to see them as individuals, and appreciating the complexity in aged care (Swanlund and Kujath, 2012).

Category 6: Patient characteristics

Multiple characteristics of patients were examined as quantitative variables and in qualitative data. There was an overall impression that students held a negative view of older people or the characteristics of their healthcare needs and this contributed to a lack of preference. One distinguishable quantitative factor was the age of the

patient. Negative perceptions of patients were described in the qualitative literature and three factors emerged: communication issues, nature of patients' illnesses, and disposition of patients.

Age of patient

Unsurprisingly there was a positive association found with preferences for working in fields related to older patients and; students wishing to work with older people (Lea et al., 2016, Diachun et al., 2006b) and; students who did not feel that working with younger patients were more satisfying (Diachun et al., 2006b).

Communication difficulties

Difficulties communicating with patients was distinguished as a theme in nursing qualitative studies (Herdman, 2002, Henderson et al., 2008). This was also found in medical students; one theme highlighted that taking a medical history from older adults was a challenge (Bagri and Tiberius, 2010). Communication difficulties were identified as a prominent barrier to working with patients with dementia (McKenzie and Brown, 2014).

Nature of patient's illnesses

The nature of patients' illnesses, specifically chronicity and progression, was a recurring theme for nursing (Zakari, 2005, Carlson, 2015, Happell and Brooker, 2001) and medical students (Samra, 2013, Bagri and Tiberius, 2010, Schigelone and Ingersoll-Dayton, 2004, Curran et al., 2015). Nursing students cited patients' lack of clinical recovery (Happell and Brooker, 2001) and feeling of hopelessness in care (Zakari, 2005, Carlson, 2015) as deterrents. For medical students, one study found working with older people was not popular because of the complexity of care, nature of health conditions, such as progression and that this was depressing (Curran et al., 2015). This was also explored quantitatively in medical students; lower preferences were found in students who stated they would rather not work with chronically ill patients or perceived chronicity of patients as a barrier to pursuing geriatrics (Diachun et al., 2006b). One study found that medical students described how older patients were often responsible for their health problems, and therefore less rewarding (Schigelone and Ingersoll-Dayton, 2004).

Disposition of patient and family

One study found that nursing students cited conflicting views about working with older patients, including enjoying working with older people because they were independent, easy to communicate with and generally amenable, whereas other students reported that they did not want to work with older people because they were difficult and would complain (Zakari, 2005). Another theme from this study found those that indicated they would prefer to work with the elderly demonstrated empathy with and understanding of the difficulties of ageing (Zakari, 2005).

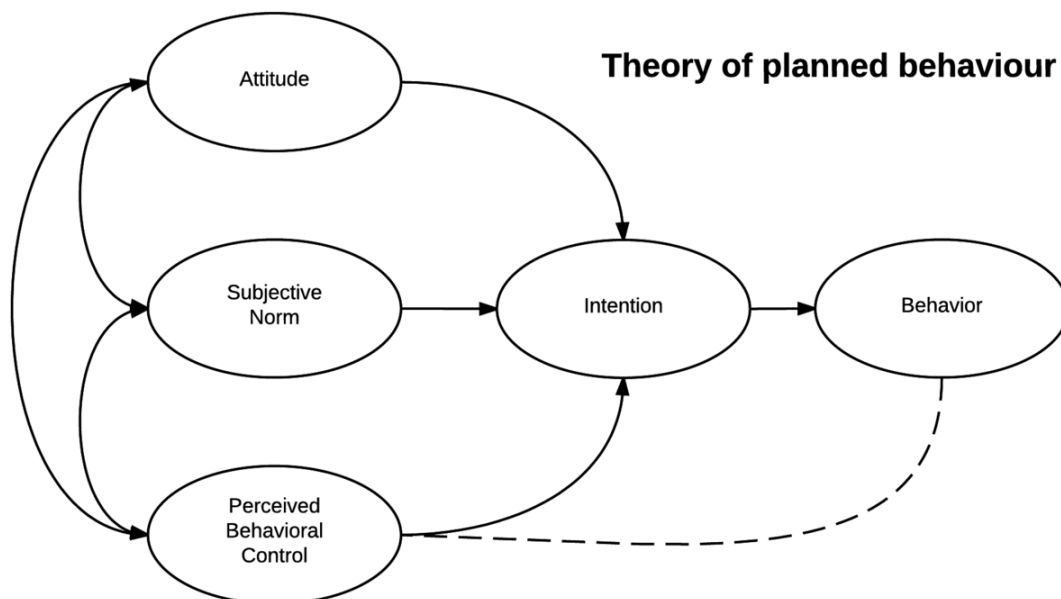
Negative perceptions of older people were also found in nursing students and gave stereotypical descriptions when describing lack of preference, such as 'creepy', 'smelly' (Stevens, 2011) and 'wrinkled and annoying' (Happell and Brooker, 2001). A unique issue within intentions to work with people with dementia was safety, as patients were described as potentially violent (McKenzie and Brown, 2014).

Qualitatively, medical findings indicated that students felt that older people may have unrealistic expectations of treatment outcomes (Bagri and Tiberius, 2010) and may be frustrating to work with due to non-compliance (Schigelone and Ingersoll-Dayton, 2004). Difficult family dynamics were explored as a factor for medical students but were not found to be associated (Diachun et al., 2006b).

Category 7: Theory of planned behaviour

The theory of planned behaviour (TPB) was used as a theoretical model in four studies of nursing preferences. TPB is a model which seeks to explain influencing factors on behaviour (Ajzen, 1991). It suggests that people's behaviour is a rational outcome of considering their ability to perform the behaviour (perceived behavioural control), their beliefs in society and significant others opinions on the behaviour (subjective norms) and individual attitudes to the behaviour (see Figure 4).

Figure 4: Theory of Planned Behaviour (Ajzen, 1991)



1

In this reviewed literature, the ‘behaviour’ is a career working with older adults and ‘intention’ is the preference for working with older people. The majority of these studies looked at preferences as the primary outcome rather than behaviour. Only a single study looked at actual behaviour, which was associated with preferences (Dunkle and Hyde, 1995). There was support for attitudes (to behaviour), subjective norms and perceived behavioural control as factors associated with preferences (de Guzman et al., 2013, Dunkle and Hyde, 1995, Che et al., 2018, Ben Natan et al., 2015).

Attitudes (towards choosing to work with older people)

All studies exploring TPB showed support for a relationship between students’ attitudes towards working with older people and preferences (de Guzman et al., 2013, Dunkle and Hyde, 1995, Che et al., 2018, Ben Natan et al., 2015) this is in line with literature exploring attitudes in general as previously outlined.

Subjective norms

All studies exploring subjective norms indicated a relationship (Ben Natan et al., 2015, Che et al., 2018, Dunkle and Hyde, 1995). This suggests that students held

¹ Figure 4 ‘Theory of Planned Behaviour (Ajzen 1991)’ By Robert Orzanna - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=42261999>

beliefs about other people's perceptions of a career working with older people are associated with their preferences.

Perceived behavioural control (PBC)

The association with PBC was conflicting; one study found an association (de Guzman et al., 2013), one found an association with PBC but not a related construct: control beliefs (Ben Natan et al., 2015) and one did not (Che et al., 2018). Therefore, it is unclear if students' perception of their ability to pursue a career working with older people is related to preferences.

3.3.3 Q2. What is known about the preferences of healthcare students specifically in relation to working with people with dementia?

Only two studies explored preferences specifically in relation to working with people with dementia. Additionally, 11 papers were found to refer to dementia in the context of preferences. These findings are summarised as follows:

McKenzie and Brown (2014) was the only identified study to measure preference in relation to dementia quantitatively. The researchers developed a scale for this purpose with six items (see Figure 5) rated on a 7 point Likert scale (strongly disagree to strongly agree).

Figure 5: Intention to work in dementia care (McKenzie & Brown, 2014, p.624)

"I would be willing to work in dementia care."
"I am interested in working in dementia care."
"It is likely that I will work in dementia care."
"I would dislike working in dementia care."
"I plan on working in dementia care."
"I would enjoy working in dementia care."

They investigated student nurses' preferences for working with people with dementia and the association with participation in an age care placement, student age, and ageism (student attitudes to older people). Completion of an aged care placement was not significantly associated with preferences, but age and positive ageism (positive attitudes to older people) were positively associated. Additionally,

they found a significant interaction with higher positive attitudes associated with higher preferences but only in older students. They also asked students to identify barriers to working with people with dementia and found through thematic analysis that students described characteristics of patients and the work, which were classified into four main themes: profession (conditions, culture, diversity), personal demands (physical and emotional), patient contact (communication and safety), and experience (lack of, previous). They found that the most frequently cited barriers apart from lack of general interest were the emotional personal demands and communication difficulties with patients. This gives some indication of what might be pertinent factors for working with people with dementia.

In the second study directly related to dementia preferences, an educational intervention in dementia was evaluated. While it did not investigate specifically the impact on preferences, they found a theme within their qualitative data around the influence of specialisation (Jefferson et al., 2012). This suggests that the intervention, consisting of spending time with a person with dementia, had encouraged medical students to consider specialisms related to working with people with dementia.

One study, investigating preferences for geriatrics, asked students to rate whether they agree or disagree with statements related to geriatrics (Diachun et al., 2006b). Three items pertaining to cognitive capacity of patients were assessed in this review as being relevant to dementia. These items are outlined in Table 6.

Table 6: Items relating to cognitive capacity (Diachun et al., 2006b, p. 516)

<p>'I anticipate I would find treating an older adult who is cognitively intact more satisfying than caring for a patient who is confused'</p> <p>'Cognitive capacity of patients' (is a barrier to pursuing geriatrics)</p> <p>'I think doing a diagnostic procedure (e.g., lumbar puncture) would be more satisfying than doing a cognitive procedure (e.g., Mini-Mental State Examination) in evaluating a confused patient.'</p>
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They found no relationship between intent to pursue geriatrics and ratings of these items in medical students. It is interesting that no association was found with geriatrics, as treating older adults with cognitive impairments (including dementia) would be a large part of the role. They also investigated year of training and found a significant difference on all three items, with students in year 2 (compared to year 1) preferring to work with 'cognitively intact' patients. In another study by the same researchers, male first-year medical students were more likely to agree to prefer working with 'cognitively intact' older adult patients than female students (Diachun et al., 2006a). These two studies suggest, similarly to working with older people, gender and year group could be a factor in preference for working with people with dementia. It is, however, unclear how these factors relate to the relationship of preferences for geriatrics and working with those with patients with cognitive impairments.

Two studies mentioned dementia in relation to the importance of exposure to healthy adults to reduce stereotypical prejudices and promote working with older people (Che et al., 2018, Swanlund and Kujath, 2012). The authors suggested that that student's exposure to dementia might decrease preference for working with older people more generally.

Four studies mentioned dementia in relation to themes about not wanting to work with older people. In one study the authors report that students viewed working with people with dementia as a 'challenge' and recommended that interventions should aim to show how work can be complex as well as equipping them with specialist skills, such as how to manage aggressive patients with dementia (Gould et al., 2012). Another study found students cited communication and emotional difficulties when working with people with dementia as a negative aspect of working with older people (Gates et al., 2009). One study suggested how students witnessing poor dementia care in clinical placement was in contrast to the holistic philosophy of care they are taught to value (Duggan et al., 2013). In medical students in the theme of 'fear of death and ageing,' the authors stated, "For many, losing cognitive functioning was their greatest fear". As discussed previously the authors, contrary to other literature, suggest that students were drawn to the area that they most feared (Schigelone and Ingersoll-Dayton, 2004).

Three studies were found to refer to dementia in individual comments by students: in terms of difficulties with patients (Bagri and Tiberius, 2010); in nursing colleagues' lack of knowledge (Brown et al., 2008); and the need for lectures in dementia before clinical placements as part of a theme concerning inadequate education (Fagerberg et al., 2000).

3.3.4 Q3. What are the differences and similarities between different types of healthcare students?

The aim of this section is to make explicit the key similarities and differences found in factors between medical and nursing students. The quantity of research is a point of disparity as more research was found regarding nursing students and with more variations in the types of preferences examined.

Key similarities

There was mixed evidence for an association with gender but female gender was the most consistent relationship for both medical and nursing students. There was also convergent evidence that preferences are higher in earlier years of training. There were no associations with course characteristics for both groups. However, the relationship between positive attitudes was clear and consistent.

Experiences were a fundamental factor. This includes both positive and negative experiences, particularly in clinical placements and the role of interventions. However, while there was strong evidence that previous experience has an impact for nursing students this was not the case for medical students.

Negative characteristics of patients were described as a factor for non-preference in both medical and nursing students and mutual reasons included difficulties with communication and the nature of patients' illnesses. Both described what they felt were unfavourable dispositions of patients.

Collective negative characteristics of the work included that it would be boring and emotionally challenging. There was a tentative relationship for the focus of patient QoL (instead of clinical recovery) being a negative of the work.

In terms of career characteristics, there was only one common factor, namely concern with financial rewards and prestige.

Key differences

There was a clear divergence in career characteristics. This might be expected due to the different career pathways and aspects of the job. A unique and prominent theme for nursing students was professional development. They felt that working with older people lacked the potential for progression and saw it as an endpoint for later in their career. Another exclusive factor for nursing students, in terms of work characteristics, was a negative environment and lack of control, and autonomy without support. For medical students, a unique factor that researchers examined was aspects of the work that may affect lifestyle; however, there was limited evidence.

There was support for the role of cultural differences in preferences with ethnicity and nationally explored in both, but religion was only examined in nursing. Family characteristics were hypothesized to play a role in both nursing and medical students but were only found to be associated with preferences of nursing students.

No studies on medical students used the theory of planned behaviour to predict preferences, whereas there was support in nursing literature for a relationship between preferences and attitudes, subjective norms and PBC.

Evidence for a link with objective knowledge was limited for both groups. In the qualitative literature, there was evidence for nursing students not feeling prepared, that was not replicated in the medical literature.

3.4 Discussion

One of the novel aspects of this systematic review was to explore career preferences for working with people with dementia in medical or nursing students. It was found that while there is a wide and varied literature relating to older adults, understanding of factors associated with working with dementia specifically is limited. The main factors associated with working with older people or people with dementia were grouped into seven categories including characteristics of the:

student, course, patients and work, and experiences of students. Constructs from TPB were also examined. The principal findings are summarised below and the specific implications for factors associated with preferences for working dementia are outlined.

3.4.1 Key findings

Attitudes

Student attitudes are one of the most researched constructs in career preferences and were found to be consistently associated with preferences for working with older people, suggesting it is a factor. However, It is also acknowledged that positive attitudes towards older patients in both nursing and medical students are relatively high (Neville and Dickie, 2014, Hughes et al., 2008) yet it is still one of the least favoured clinical preferences (Sizer et al., 2016). It may be reasoned that attitudes, as an overarching construct measured quantitatively, may be related but it is not the only factor. There is also variation in definitions of attitudes leading to a limitation in conclusions that can be drawn. In this review, attitudes were separated into two types: attitudes to older people in general and attitudes to older patients. This distinction was suggested by Samra (2013) who comments that this clarification is often not made, nor is the content of attitudes often outlined. This is supported by a review on measures of attitude to older people that specified the weakness in measures and definitions used (Wilson et al., 2018). The most common attitude measure identified in this sub-study, used in relation to preferences, was Kogan's Older People Scale (Kogan, 1961); this is described as lacking clarity and measures beliefs towards and knowledge of older people rather than attitudes to patients (Wilson 2018). Future studies looking at the relationship with preferences should be specific about the contents of attitudes they are attempting to measure rather than treating it as a unified construct.

While attitudes to dementia have been the recent focus of research for healthcare professionals (Kimzey, Mastel-Smith, & Alfred, 2016; Tullo & Young, 2014) the link between them and career preferences has not been established. Evidence can only be found in one study and this is for attitudes towards older people; Mckenzie & Brown (2014) found that positive ageism was linked with intentions to work with people with dementia (but not negative ageism). However, this relationship was only

significant in students over 25 years old. The authors suggest that there may be more influential factors other than attitudes for younger students.

Related to attitudes is the TPB. Support for the TPB was found in nursing studies, these suggest attitudes to working with older people, PBC, and subjective norms are predictors of preferences for working with older people. However, inconsistent definitions found for constructs give uncertainty about what conclusions can be drawn. For example, attitudes to behaviour were measured as attitudes to working with older patients (Dunkle and Hyde, 1995, Ben Natan et al., 2015) or attitudes to older people in general (de Guzman et al., 2013, Che et al., 2018). PBC was equated with knowledge in geriatrics, thought to be proxy of ability to perform the job (de Guzman et al., 2013) or about individuals perspective on their ability to pursue working in with older people (Ben Natan et al., 2015) while other definitions were unclear (Che et al., 2018). Uncertainty in construct definitions was evident in studies where researcher-developed measures were used and limited descriptions were provided. While attitudes and PBC (in the form of knowledge or preparedness) has been explored for older adults the TPB was not explored in medical students, or in relation to preferences for working with people with dementia. The role of subjective norms and the influence of society and significant others is a direction for future work.

Characteristics of work, patients and career

The specific characteristics of the work and patients, identified in the direct context of influencing preferences, provide insight into the perceptions of students affecting preferences. This includes the perception of the work as boring, emotionally challenging, the focus on patient quality of life as opposed to cure as a barrier, the nature of patients' illness, and communication difficulties, as well as perceived negative aspects of older patient's disposition.

Together this indicates a perception that working with older people and dementia is less valued. The description of 'boring' appears derived from the perception that the work lacks diversity and is low skilled. This is tied to the understanding of patients' illnesses being progressive and chronic, with a focus on the quality of life of the patient. This refers back to the cure-care dichotomy, with the value of healthcare being placed on 'cure' rather than care (McKenzie and Brown, 2014). Within nursing

students, there was an indication that students wanted to promote QoL in patients but felt unable to deliver this, and that the working environment was a facilitating factor to achieve this. Without the ability to recognise these goals, there is a feeling of hopelessness and less professional value. While these are in the context of preferences for working with older people, they are distinct features of dementia; and could be a more definitive factor in preferences for working with dementia. This is also supported by Chenoweth and colleagues (2010) who outline intrinsic rewards such as professional value and ability to perform quality nursing care as integral to the recruitment and retention of nurses in care for older people and people with dementia.

There is also a perception of working with older people as a less valued career. Finance and prestige was a concern for both medical and nursing students. Interestingly this may be not only a perception in students but across the wider profession. For example, one study found that geriatrics was ranked the least prestigious out of 22 specialties by senior doctors, general practitioners and fifth-year medical students (Album and Westin, 2008). They also found differential ratings of the prestige of diseases. Dementia was not included but psychological disorders and diseases with long onsets were found to have the lowest prestige. It is reasonable to suggest that both working with older adults and patients with dementia is seen as less prestigious.

There were also career concerns for nursing students in terms of professional development. This is supported in the wider literature (Gillespie, 2013, Gillespie, 2017).

Knowledge and feeling prepared

There was limited evidence for a relationship of preferences for working with older people and objective knowledge of ageing, but there were themes in nursing around how lack of perceived competence and skill was a deterrent. This level of 'preparedness' has been explored in relation to working with older adults and dementia. The literature suggests that students feel ill-prepared to work with older adults and that the curriculum has not equipped them with the necessary skills. For instance, Drickamer and colleagues (2006) conducted an examination of medical student curricula and found that students felt they lacked the skills to deal with the

complex nature of cases, understanding of interconnecting services and wider social considerations (Drickamer et al., 2006). Notably, one key skill deficit students recognised was in their difficulty in communicating with cognitively impaired patients and their families.

In relation to dementia care, a cross-sectional survey in the UK found that only 52% of 3rd year nursing students said they felt prepared to care for people with dementia (Baillie, Merritt, Cox, & Crichton, 2015). Together this indicates that preparedness might be a factor for student preferences for working with people dementia. Moreover, as medical and nursing students have reported communication difficulties and emotional challenges as a barrier to choosing a career in older people and people with dementia, inferring that further support to develop these skills could reduce these barriers. In addition, safety was a unique concern related to working with people with dementia (McKenzie and Brown, 2014) and suggested to be targeted by education (Gould et al., 2012). However, it is not clear whether this would also be a concern in UK students due to differential care practices.

Cultural context

The link between culture, family ties, and religion is interconnected and needs to be viewed within a cultural context; the results from this systematic review suggest that it should be considered in student preferences for working with older people. However, few studies explored the effect of cultural backgrounds within western settings. In the UK, only one study looked at ethnicity in medical students and this was not significant, and there is no research looking at religion or nationality comparisons.

There were five studies conducted in the UK. Two papers on nursing students focused on placements and aspects of placements (Duggan et al., 2013, Brown et al., 2008) with no student characteristics explored, except previous experience in which a positive association was found (Brown et al., 2008). Three studies on medical students were found. One qualitative thesis found that medical students reported geriatrics was an unpopular choice because of patient characteristics such as progression in patients, and characteristics of work including being a generalist and negative environment (Samra, 2013). Two looked at a range of variables (Robbins et al., 2011, Hughes et al., 2008), but only a few associations were found;

preferences were associated with a positive attitude to older people (Hughes et al., 2008), and previous experience was found significant in one study (Robbins et al., 2011) but not another (Hughes et al., 2008). It is unclear whether the differences between these results and other studies reflect real differences between the UK and other countries or reflect a lack of literature; further research is needed to explore this area further.

Role of HEI

Student preferences for working with older people appear to decrease over training. One explanation is this is because of the role HEIs have in shaping perspectives of the field as low status with emphasis on technical specialties; this socialisation process is seen as a deterrent for working with older people (Stevens, 2011, Happell, 2002). This has been referred to as a 'hidden curriculum' (Meiboom et al., 2015a). However, there is limited research on how these preferences are changing during training. One study found differences in the reasons given for low preference between year groups. Students earlier in training were more likely to state stereotypical comments about older people whereas students later in training were more likely to cite challenges in difficulty of work and perceived lack of technical medicine in relation to working with older people (Lee et al., 2006). However, this research is cross-sectional using different year groups, and therefore it is not possible to assess the differences within individuals over time. Future research should explore career preferences longitudinally to identify how and why preferences are changing. It is also of note that no studies looking longitudinally at preferences have been conducted in the UK.

These results highlight the importance of the HEI's role in preferences for working with older people. Students' year of training has not been explored in relation to dementia preferences. However, one study found students in year 2 (compared to year 1) prefer to work with 'cognitively intact' patients (Diachun et al., 2006b). This gives tentative support for a role with preferences with dementia.

A key impactful area during education is clinical placements and educational interventions; the literature suggests these experiences can be key to forming preferences. Nevertheless, quality placements, not simply exposure, appear important for promoting professions related to older adults. Examples of quality

placement characteristics are found in descriptions of 'enriched environments' (Brown et al., 2008). These are identified by delivering a sense of security and belonging for the students at the start of their placement, creating purpose and achievement through learning, and reinforce their sense of significance and gerontology as a profession.

Knowledge on the mechanisms by which placements can influence preferences is limited, but they are suggested to influence the factors already outlined: attitudes, perception of the field, and student preparedness and confidence (Brown et al., 2008, Garbrah et al., 2017). This may constitute the object of future investigation.

Of importance was the finding that exposure to dementia was described as having a potential negative effect of preferences for working with older people (Che et al., 2018, Swanlund and Kujath, 2012) with the authors describing the need for exposure to healthy adults to promote working with older people. This is an indicator of the perceived challenges of improving preferences towards dementia. In addition, this leaves the question of how to deliver positive clinical experiences of working with people with dementia.

Educational interventions for dementia are increasingly being developed to address the lack of undergraduate dementia education (Alushi et al., 2015, Banerjee et al., 2017, Tullo and Allan, 2011). They aim to increase knowledge, attitudes, and confidence in working with patients with dementia. This, in turn, may influence career preferences. Yet only one study has previously explored the link between a dementia intervention and career preferences; in a qualitative evaluation of the PAIRS Program, where medical students are paired with an older adult with a diagnosis of dementia for visits over a year, they found increased student interest in geriatrics and neurology (Jefferson et al., 2012). McKenzie and Brown (2014) found no relationship between an aged care placement and intention to work in dementia care, but this was not a dementia-specific placement. It is important to understand how dementia education interventions can influence preferences, as they may offer an opportunity for educators to help future workforce planning by the promotion of specialisms, or at least reduce the negative perceptions of such fields.

Positive factors

There were limited positive aspects of working with older people identified as factors. This is likely to be an artefact of the majority of the research exploring why students have a low preference (as the majority of students express a low preference) and questions being framed as such. These positives include the ability and value of building long-term relationships with patients, enjoyment from patient interaction and for nursing students, autonomy in the workplace. Future work should not only explore why the field is unattractive but what makes students actively prefer working with older people or people with dementia. That is, not only identify factors associated with low preferences but also what makes it a first choice; this may provide the most effective strategies to promote clinical interests.

Student characteristics

In terms of student characteristics, female gender was found to be positively associated with preferences for working with older people, with some indication it is also related to dementia preferences. There was conflicting evidence on age as a factor. In terms of dementia, one study suggested that older students might have higher intentions for working in dementia care. Differences in the qualitative data suggest that younger students are more concerned with emotional challenges, with older students highlighting negative working conditions, with both outlining difficulties with communication as a barrier (McKenzie and Brown, 2014). This result warrants further investigation.

Comparisons of medical and nursing students

In summary, many of the factors are comparable for nursing and medical students in relation to preferences working with older people, and therefore most likely with dementia. Specifically, these included perceptions of patients and characteristics of the work, as well as attitudes. The main divergence around was aspects of career pathways leading to differences. There was more literature on nursing students with more diversity in the types of nursing preferences explored, this is likely due to the nursing career paths being relatively unstructured comparatively to medicine.

Quality of literature

In terms of the quality of literature, a consistent limitation was the lack of high quality and appropriate measurement tools. Che and colleagues (2017) conducted a systematic review on measures of intention to work with older people and identified that measures ranged from low to good quality and are yet to be validated. They found that ranking measures were used most frequently; this systematic review is representative of this finding, as this was the most frequent measure used after single items.

3.4.2 Strengths and limitations

There are four main strengths of this review. First, quantitative and qualitative work was included. This allowed triangulation between different sources and the qualitative data to add meaning to some of the quantitative results. Second, the inclusion of mixed methods papers and wide inclusion criteria means that it was comprehensive. The aim was to establish any relevant literature relating to dementia preferences and this was achieved. Third, this review is novel both in its approach to understanding factors associated with dementia as well as the inclusion of both medical and nursing students. A comparison of literature leads to greater understanding about differences between healthcare groups that can be considered when implementing education interventions, and by identifying factors explored in one healthcare professional but not another, provides directions for future research. Fourth, this systematic review took a comprehensive approach to screening, extraction and synthesis with two reviewers at each stage.

There are five main limitations to this review. First, in terms of exclusion criteria, only studies published in English were included, this may have introduced bias. Second, studies were not excluded based on quality, while this is the approach recommended by Hong et al. (2018) it could introduce bias to the review or weaken links that have been made. However, this was an exploratory review looking at possible factors with the aim to be comprehensive. Third, some literature may have been missed in the search; though, consultation with a librarian and multiple search strategies should have reduced this risk.

Fourth, a limitation of this review is that different types of preferences have been grouped together, however as many studies did not define either what they meant

by working with older adults or equate particular settings with working with older adults, this was the most comprehensive approach available. Future work should provide definitions of types of preferences, including considering interpretations of student responders. For instance, students may have a low preference for working with older people in acute settings, but not in the community; medical students may prefer working with older people but not geriatrics. One study where students rated preferences for patient group and settings (work environment) found that working in care homes was ranked in the last place compared to other settings but that working with adults aged 65-85 was relatively high, in 3rd place compared to other aged groups (King et al., 2013). This highlights the importance of considering settings as well as patient groups in career preferences.

Fifth, the analysis was restricted to a narrative synthesis and therefore the magnitude of associations was not examined, giving no indication on the relative weighting of factors. Future work should identify methods to conduct this. A data-based convergent design was used, with qualitative themes labelled under factor headings; however, this is not the only way to use qualitative evidence. For example, a more comprehensive thematic analysis could have been conducted. This was not appropriate due to the volume of data for this review. Furthermore, we did not make a distinction between univariate links and multivariate analysis; given that many of studies explored preferences not as the primary outcome, with multiple correlations being presented, there is the risk of type-1 error.

3.5 Conclusions

The main objective of this sub-study was to identify and consolidate the existing literature on career preferences on medical and nursing students specifically in relation to dementia and to older adults generally; to identify factors associated with dementia and future directions of study to build on.

It demonstrated that there is a clear gap in the literature in relation to understanding factors associated with dementia. Potential factors associated with dementia preferences were female gender, year group, age, and characteristics of the work such as communication and emotional challenges. There was an indication that educational interventions could influence preferences positively in dementia-related fields, with educational interventions and clinical experiences key factors for

preferences for working with older people. Additionally, some researchers have suggested exposure to people with dementia in clinical training can be a deterrent.

Of the factors related to older people, those specifically of relevance include the value of work that appears to stem from the negative perception of chronic and progressive illness and the role of healthcare professionals facilitating QoL rather than cure. This is pertinent to working with people with dementia.

Further exploration of the positive aspects of dementia care and defining preferences in terms of students' understanding of careers is warranted and will be explored further in SS3.

The lack of UK research, longitudinal studies, and assessment of change in preferences during training remain a gap in the literature. The next chapter will address this in SS2. This explores data from Time for Dementia (TFD), a UK longitudinal study, to explore the change of preferences towards dementia during training in medical and nursing students.

4 Chapter 4 Sub-study 2: A longitudinal investigation of career preferences in undergraduate healthcare students.

This chapter presents SS2, which is a longitudinal investigation of career preferences in nursing and medical students.

4.1 Background

4.1.1 Previous literature

The literature review in Chapter 1 outlined that students have a low preference for working with older people, and by extension people with dementia. However, there is little research on preferences for working with people with dementia, and none in the UK. To identify factors associated with preferences for working with people with dementia, a systematic review was undertaken as SS1 and is described in Chapter 3, the following findings are highlighted:

- i. Previous studies suggest preferences towards working with older adults decrease during training and, this is potentially a factor for preferences for working with people with dementia. This suggests training is an influential time, but one where a negative influence is exerted.
- ii. While several studies have looked at the factors associated with preferences for working with older adults or the specialty of geriatrics, there is a marked lack of studies based in the UK and of longitudinal studies. None of the studies investigating dementia preferences were conducted in the UK.
- iii. Factors associated with preferences for working with people with dementia were female gender, older students and characteristics of the work such as communication and emotional challenges. There was an indication that educational interventions could influence preferences positively in dementia-related fields. Furthermore, one study indicated that preferences may differ between year groups for working with 'cognitively intact' older patients (Diachun et al., 2006b). Possible factors associated with preferences for working with older people are various, those pertinent to working with people with dementia include the low value of work that appears to stem from the

negative perception of chronic and progressive illness and the role of healthcare professionals in facilitating QoL rather than cure.

In summary, previous research has built profiles of healthcare student preferences for working with older people and associated factors. There is a lack of research looking at preferences for dementia and associated factors. The systematic review identified possible associated factors that should be considered, including educational interventions. The Time for Dementia (TFD) programme is a dementia education intervention with a large scale evaluation. Data from this research was used to explore student preferences in this sub-study.

4.1.2 Time for Dementia

TFD is an innovative intervention that aims to enhance dementia education and improve attitudes to, knowledge about and empathy for patients with dementia (Banerjee et al., 2017). TFD consists of healthcare students being paired with a family affected by dementia and visiting them regularly over two years. It is based on promising initiatives such as the US PAIRS Program and Buddy Program (Jefferson et al., 2012, Morhardt, 2006), that have been shown to positively influence attitudes towards dementia and indicate a change in preference or perceptions of specialties related to dementia in small selected groups of students. TFD is delivered to all students as a compulsory part of the curriculum; reflecting that all healthcare professionals must be able to respond to the needs of this patient group and understand it is important to their practice. Results from the primary analysis for phase one of the TFD evaluation indicate that students participating in Time for Dementia improved in terms of their attitudes towards dementia (becoming more person-centered) and having greater social comfort with those with dementia and gains in knowledge (Banerjee et al., 2020). Given that these constructs may be related to preferences, participation in the TFD programme may affect student career preferences towards older adult and dementia fields. Early analysis of TFD data includes a preliminary indication of such a possible link. First, a qualitative study of the outcomes for healthcare students revealed that some disclosed an increased interest or reduced apprehension in working with people with dementia (Daley et al., 2020). Secondly, a longitudinal study of the influence of TFD on nursing students found that students were more positive about working in the community as a result of TFD (Grosvenor, 2019). However, these findings are tentative, due to

appearing as minor themes in the main analysis and small samples. This thesis further explores TFD as a factor in preferences. This sub-study conducts secondary analysis with data collected as part of the TFD evaluation. These TFD data offer an opportunity to look at career preferences longitudinally and with a number of potential factors.

4.1.3 Objective and research questions

The objective of this sub-study was to assess the career preferences of undergraduate nursing and medical students, in relation to changes over time for preferences for working with people with dementia and to identify the factors related to these preferences. The research questions were:

Q1. Where do undergraduate students want to work? In particular, how popular is working with people with dementia and related specialties?

Q2. Do career preferences for medical and nursing students change over time in undergraduate training?

Q3. What factors (including TFD) are associated with a preference for working with people with dementia?

Q4. What do students report as the reasons for their preferences for working with people with dementia?

4.2 Method

4.2.1 Study design

This is a secondary analysis of data collected from 2014-2018 as part of the TFD evaluation (Banerjee et al., 2017), which is a longitudinal cohort study. Baseline (T1) was completed before the start of the TFD visits, and at equivalent times for comparison groups (i.e. students not completing the intervention). For nursing students, this was their first year of study and second year of study for medical students.

Data has been collected over three time points approximately 12 months apart during participants' undergraduate training referred to as T1 (baseline), T2 & T3. A single nursing cohort was approached at a further time point, T4, because their TFD visits continued past T3. An additional data collection point was added to the TFD evaluation for medical students only; this was in their final year, referred to as T5. This was to capture their career preferences in their final year of study. Table 7 presents the detail of the year of assessment. The main outcome measures included dementia knowledge, attitudes, and empathy, but additional measures were including of career preferences which are described below (4.2.3)

4.2.2 Study setting and sample

The sample for this sub-study included eight student cohorts (n=840), including nursing students at the University of Surrey (UoS) and University of Brighton (UoB); and medical students from Brighton and Sussex Medical School (BSMS) and University of East Anglia (UEA). Four of these cohorts took part in the TFD programme; four were comparison groups, see Table 7.

Table 7: Nursing and medical student participants in the TFD evaluation

Cohort name (HEI and month in practice)	TFD	Student			T1	T2	T3	T4	T5
		type	In training						
BSMS Aug-18	Yes	Medical	2013-2018	Yr.2	Yr.3	Yr.4	-	Yr.5*	
BSMS Aug-19	Yes	Medical	2014-2019	Yr.2	Yr.3	Yr.4	-	Yr.5*	
UEA Aug-19	No	Medical	2014-2019	Yr.2	Yr.3	Yr.4	-	Yr.5*	
BSMS Aug-17	No	Medical	2012-2017	-	-	-	-	Yr.5*	
UoS Sep-17	Yes	Nursing	2014-2017	Yr.1	Yr.2	Yr.3	Yr.3*	-	
UoS Sep-18	Yes	Nursing	2015-2018	Yr.1	Yr.2	Yr.3	-	-	
UoS Feb-18	No	Nursing	2015-2018	Yr.1	Yr.2	Yr.3	-	-	
UoB- Sep-18	No	Nursing	2015-2018	Yr.1	Yr.2	Yr.3	-	-	

*Data collected at end of year

Deviations from the timeline

The core evaluation consisted of three follow up time points but some deviations are of note. The BSMS Aug-17 cohort only completed T5, this is because they were the cohort preceding the start of the TFD evaluation, but were sampled to act as a comparative control group and to be approached for future research. Only UoS Sep-17 was sampled at T4 because their TFD visits continued past T3.

4.2.3 Measures

Career preferences

Nurses

Participants were asked to complete a ranking exercise of career preferences, adapted from a design used in longitudinal studies on nurse career preferences (Stevens, 2011). Students were asked to rank 11 specialties from one (most preferred) to 11 (least preferred). As well as the 10 categories commonly used in previous studies, 'people with dementia' was added as a career choice.

In addition, free text questions were added at the final time point for each of the cohorts, asking students to explain reasons for selecting their first and last choice as well as their choice of rank for working 'with people with dementia' (Appendix F).

Medical students

Specialty preferences were recorded in the Jefferson Scale of Empathy (JSE, Hojat et al., 2001). This allowed the student to pick the one specialty they plan to pursue out of 21 categories (or indicate if undecided) and to define further if a medical or surgical career is chosen (Appendix G).

At T5, medical students were asked only to complete a short career preference questionnaire. This asked for their preference for working with people with dementia and preferred and least preferred specialties (completed by BSMS Aug-17). This study-specific question was developed to capture the preferences of medical students in relation to working with people with dementia, as no standardised

measures were available. This was subsequently amended to include open text questions to allow students to qualify their answers, completed by the remaining three medical cohorts (Appendix H).

Time for dementia

Each participant was recorded as either taking part in the TFD programme or as a comparison group, labelled as TFD or Non-TFD.

Socio-demographics

Demographic data were recorded at baseline:

- i. Experience of dementia: students were asked to indicate if they had previous experience with dementia (yes/no) and whether this was through work, personal experience or both.
- ii. Age
- iii. Gender
- iv. Ethnicity
- v. Student type: students were either medical or nursing students. Nursing students were further classified by branch: adult or mental health.

Knowledge and attitudes toward dementia

A series of standardised questionnaires were chosen as outcome measures for the evaluation of TFD programme based on their relation to main outcomes of interest and psychometric properties (summary available in Appendix H):

- i. Alzheimer's Disease Knowledge Scale (ADKS), 30-item questionnaire to assess students' knowledge of Alzheimer's disease (Carpenter et al., 2009);
- ii. Dementia Knowledge Questionnaire (DK-20), 20-item questionnaire to assess dementia knowledge (Shanahan et al., 2013);
- iii. Approaches to Dementia Questionnaire (ADQ), 19-item questionnaire to assess attitudes towards dementia; (Lintern et al., 2000);
- iv. Dementia Attitude Scale (DAS), 20-item questionnaire to assess attitudes towards dementia (O'Connor and McFadden, 2010);
- v. Medical Condition Regard Scale (MCRS) a measure of biases, attitudes and emotions to specific medical conditions (Christison et al., 2002);

- vi. Jefferson Scale of Empathy (JSE): Health Professional/Medical Student Version (Hojat et al., 2001), a 20-item questionnaire of empathy in healthcare students; and career preferences (as described above).

4.2.4 Procedure

Overview of the Time for Dementia evaluation procedure

Details of the TFD evaluation methodology have been published in a protocol paper (Banerjee et al., 2017). NHS Health Research Authority committee approval was obtained (REC ref: 15/LO/0046). Students were invited to participate in the TFD evaluation during timetabled lectures by researchers working on the TFD programme. Students were emailed information sheets ahead of the session for their consideration, and written consent was obtained for those students who agreed to take part in the study. All participation in the TFD evaluation was voluntary. This is distinct from the TFD programme itself, where participation in the TFD educational programme was a mandatory component of the curricula for those cohorts taking part in the programme. Measure packs took approximately 20-30 minutes to complete.

Data collection for all cohorts and data entry for seven of the eight cohorts was undertaken before the start of the thesis project. The doctoral researcher entered the remaining data and the data for T5, which was collected and entered during the doctoral study.

Data extraction

A data management and analysis plan was developed by the doctoral researcher for this sub-study. A statistician was consulted at key points including the creation of the data analysis plan for this sub-study and during analysis.

Data for use in this thesis was extracted from the final TFD evaluation dataset and further cleaned and prepared for analysis by the doctoral researcher. This included ensuring that further validation checks were completed on preference measure variables, as these would be the primary variable of interest in these analyses. Responses to rankings and medical 'other categories' were checked to ensure they

were logical as well as within allowable ranges. Qualitative data (open questions) were cleaned. New variables for this analysis were computed.

The strategy for missing items for the primary measures (preference measures) for each group was as follows:

For the nurse ranking measure, if ranks were not used as intended (e.g. a participant ranked more than one area as their first choice or missed out rankings) they were treated as missing, as the meaning of ranks would change. However, where qualitative statements were given, ranks were noted to provide meaning i.e. to see what specialty they were referring to when explaining their top choice. Two data files were saved, one with rankings re-coded were 'missing' and one full data file used for qualitative analysis.

For medical preference measures, the logic of responses was checked between first-choice options (e.g. medical specialty) and choice of 'other' options (i.e. medical sub-specialities). If they were not logical responses, they were not included, as it was not clear which answer was erroneous.

4.2.5 Analysis

Nurse and medical student data were analysed separately. This was due to different career pathways and the use of different measures. For both datasets, the first analysis explored the overall popularity of each career choice and changes in preferences during training (research questions 1 & 2). Further analysis looked at the relationship between career preferences related to dementia with variables of interest, such as attitudes to dementia and socio-demographic information including previous experience and participation in TFD programme (research question 3). The data were analysed using SPSS (version 24). Qualitative data, collected from open questions within the questionnaires, were analysed using content analysis (research question 4).

Nursing students -quantitative data

Descriptive data and frequencies were calculated as well as the mean rank for each career destination at each of the time points. Only T1-T3 was assessed due to only

a small number of one cohort completing T4. The sample was split by branch type, as it was assessed that students selecting mental health or adult nursing by definition would have different preferences; which was reflected in the distribution of ranks.

The normality of distribution of all career preferences for the sample was explored, split by student type. Histograms suggest that the distribution of data was skewed for some specialty choices (i.e. some choices are more commonly positively or negatively rated). However, older people, people with dementia and community health appeared approximately normal in distribution (i.e. there are a variety of rankings used, with most people ranking in the middle). Values for skewness and Kurtosis were all acceptable values for adult nurses (between -1.5 and +1.5), for older adults and dementia preferences, values of skewness were between 0 and -0.5 (Field, 2013). There was a similar pattern for the career preferences of mental health nurses, except for community mental health and psychiatry nursing which were highly skewed. Therefore, as not all preferences had a normal distribution, a non-parametric test was used to assess for change over time; the Wilcoxon Matched Pairs Signed-Ranks test.

Further analysis included a multiple variable linear regression that assessed predictors for rankings of working with dementia at T1 and T3. The predictor variables included were selected from the database *a priori* based on theorised relationships as outlined in the background (p. 106). This included age, gender, ethnicity (White British/European vs Other ethnic group), type of nursing branch (Adult/Mental health), university, measures of attitudes and knowledge to dementia, previous experience of dementia (at baseline) and participation in TFD.

Assumptions for multiple linear regressions

For each model, three assumptions were explored to ensure that the data was suitable for performing a multiple linear regression. These assumptions are described below.

- i. **Multivariate normality** (normality of residuals): histograms of residuals showed that errors between observed and predicted values (i.e., the residuals of the regression) were approximately normally distributed.

- ii. **Homoscedasticity:** a scatter plot of residuals for the dependent variable showed that the variance of error terms were similar across all values of the independent variable.
- iii. **Multicollinearity:** correlations between all predictor variables were explored. Tolerance and VIF values were in allowable ranges (Field, 2013): all VIF values were <2.5.

Nursing students- qualitative data

Content analysis was undertaken on the answers for the open questions presented with the ranking exercise. The three questions were:

- *Please explain why your Rank 1 is your most preferred career choice*
- *Please explain why your Rank 11 is your least preferred career choice*
- *Please explain your choice of Rank for a career working with 'people with dementia'.*

The answers to these questions were analysed in relation to their ranking of dementia. The analysis was split into three parts: the reasons given for high preferences (defined as ranks 1-3), low preferences (ranks 9-11), and middle ranks (4-8). The unit of analysis was each student's response to each of the three questions. Each meaningful unit of text was condensed and given a code; codes remained close to the text and represent the manifest content (Graneheim and Lundman, 2004). Condensed units were then sorted into meaningful categories. These categories were inductive and remained broad. Due to limited responses of open questions, a higher level of interpretation and use of themes was not used. Frequencies of categories were tabulated to provide an indication of the most common responses.

Two researchers (MH and GS) independently coded the transcripts using NVivo 12 (QSR International, 2018). Researchers met to discuss coding and to reach a consensus of the codes used for condensed units and categories employed. The final analysis was discussed with an experienced qualitative researcher (SD) to

enhance reflexivity. Independent coding and group agreement were employed to increase the validity of the results (Graneheim and Lundman, 2004).

Medical students- quantitative data

There are two parts to the analysis of medical student data. Part 1: which included data collected at T1, T2 and T3 (JSE specialty preferences) and Part 2: which was collected at T5 (Dementia preference question). The analysis of T1-T3 allows changes in preferences over time to be explored but is limited as there is no dementia-specific question. A new measure was added at T5 to address this but could only be cross-sectional. These two analyses are presented separately; as while they include some of the same participants, an additional cohort was invited to participate at T5 and different measures were collected at this time point.

Part 1 (T1-T3)

Descriptive data and frequencies were calculated for JSE specialty preferences in terms of most preferred by students i.e. what specialties was the most chosen area of interest at each time point. Geriatric medicine was coded as an additional category as students recorded this under 'other' specialties choices more than once and was of interest for this analysis. The JSE categories of specialties were collapsed and individual specialties are presented grouped based on UK definitions of medical and surgical specialties (Appendix J). Differences over time were explored by looking at profiles of student preferences over time.

Part 2 (T5)

Descriptive data and frequencies were calculated for students' preferences for working with people with dementia. The five-point Likert items in response to the question 'do you want to work with people with dementia when you qualify?' were recoded into three categories: low preference included the responses 'Not at all' and 'Unlikely'; Neutral that included 'no opinion'; and high preference that included 'possibly' and 'very likely'.

Descriptive data and frequencies were also calculated for students' preferred choice of specialty. This was recorded as an open text response and therefore was

categorised using the JSE definitions outlined above. Due to the structured nature of specialty choices, the majority fell within these existing categories. Where it was not clear what JSE categories responses would fit under, two researchers (MH & JW) agreed whether to code them under the most appropriate existing category; record them as 'other'; or if they were recorded more than once, give them their own category. Where students gave more than one specialty this was recorded as 'undecided' (full coding of open responses in Appendix J).

A logistic regression of preference for working with people with dementia and demographic variables was conducted. The demographic variables included age at T5 (≥ 25 vs ≤ 24), ethnicity (White British/European vs Other ethnic groups), gender and involvement in TFD. Age was categorised based on the assumption that mature students, who have had a substantial gap between college and university with more than a gap year or intercalation year, would be over 25 years old by year five of their medical training. The variable 'previous experience of dementia' was excluded because it was not recorded for those only completing T5, as experience before training was only included at baseline.

Considerations for the logistic regression

For the logistic regression a number of considerations and assumptions were explored:

- i. **Multicollinearity:** correlations between all predictor variables were explored. Tolerance and VIF values were in allowable ranges (Field, 2013); all VIF values were 1.1 or below.
- ii. **Empty cells:** contingency tables were explored to assess if there were values of the predictor variables at all levels of the dependent variable. Due to the low response rate of a comparison group at UEA, there was only one value in the low preference category. All other predictor variables were acceptable as each had at least five responses at each level (Field, 2013). It was decided that university should be removed as a predictor variable as it led to 'complete separation' in that it was a perfect predictor. It was felt this would be appropriate as although the university is a potential confounder in

looking at the impact of TFD, within the non-TFD sample there were students from BSMS as a control group.

- iii. **Assumption of independence of errors:** the dispersion parameter was calculated to test for overdispersion which is calculated by dividing the Chi-square goodness of fit statistic by degrees of freedom, with values over 1 indicting overdispersion (Field, 2013). In this case, there was no indication of a violation of the assumption as values were <1 ($19.26/22 = 0.87$).

Medical Students- qualitative data

Content analysis was undertaken for the open question responses, presented with the Likert question at T5 (part two). The question was 'do you want to work with people with dementia when you qualify?' and students were asked to 'please explain why'. Each statement was analysed in relation to the five Likert item options and presented in three categories of preference: low, neutral and high. The content analysis proceeded in the same manner as with nursing data (see p. 115). Key elements include independent coding by two researchers (MH & GS), supervision from an experienced qualitative researcher (SD) and frequencies of categories were tabulated to provide an indication of most common themes.

4.3 Results- student nurses

4.3.1 Response rate

589 nursing students were approached to take part in the TFD study. A total of 528 nurse participants were consented in the main TFD sample (90% response rate). The sample for this study is 488 and includes those that completed the career preference ranking exercise (at any time point).

Out of the 488 participants that completed the ranking exercise: 433 (89%) completed at T1, 295 (60%) at T2 and 122 (25%) at T3. The decreasing numbers at follow up is due to a high number of students leaving the nursing course after the commencement of the study and the reduced attendance at lectures in later years of study, where follow up data were collected. The demographics of this sample is presented in Table 8.

Table 8: Participant demographics- student nurses

Characteristic		Adult Nursing (n=386)		MH Nursing (n=102)	
		Median	IQR	Median	IQR
Student Age		21	19-27	24	19-32
		N	%	N	%
University	UoS	320	82.9%	80	78.4%
	UoB	66	17.1%	22	21.6%
Gender	Male	37	9.6%	26	25.5%
	Female	348	90.4%	76	74.5%
Marital Status	Never Married	280	75.1%	70	70.7%
	Currently Married	56	15.0%	19	19.2%
	Cohabiting	22	5.9%	4	4.0%
	Separated/Divorced	15	4.0%	6	6.1%
Experience of knowing Someone with Dementia	Yes	214	56.8%	54	54.5%
	No	163	43.2%	45	45.5%
Dementia Experience	A Family Member/ Friend	50	23.4%	22	40.7%
	Paid/Unpaid Work	116	54.2%	21	38.9%
	Both	48	22.4%	11	20.4%
Ethnicity	White British/ European	306	80.5%	79	79.8%
	Other Ethnic Group	74	19.5%	20	20.2%
TFD Group	Non-TFD	105	27.2%	22	21.6%
	TFD	281	72.8%	80	78.4%

4.3.2 Q1. Where do student nurses want to work?

Adult branch

The most preferred specialty at T1 for adult nurses was medical (27.5%) and this was consistent at T2 (23.6%), at T3 was joint first with intensive care (25.2%). Community mental health was the least popular choice with only one student ranking it as their first choice at T1.

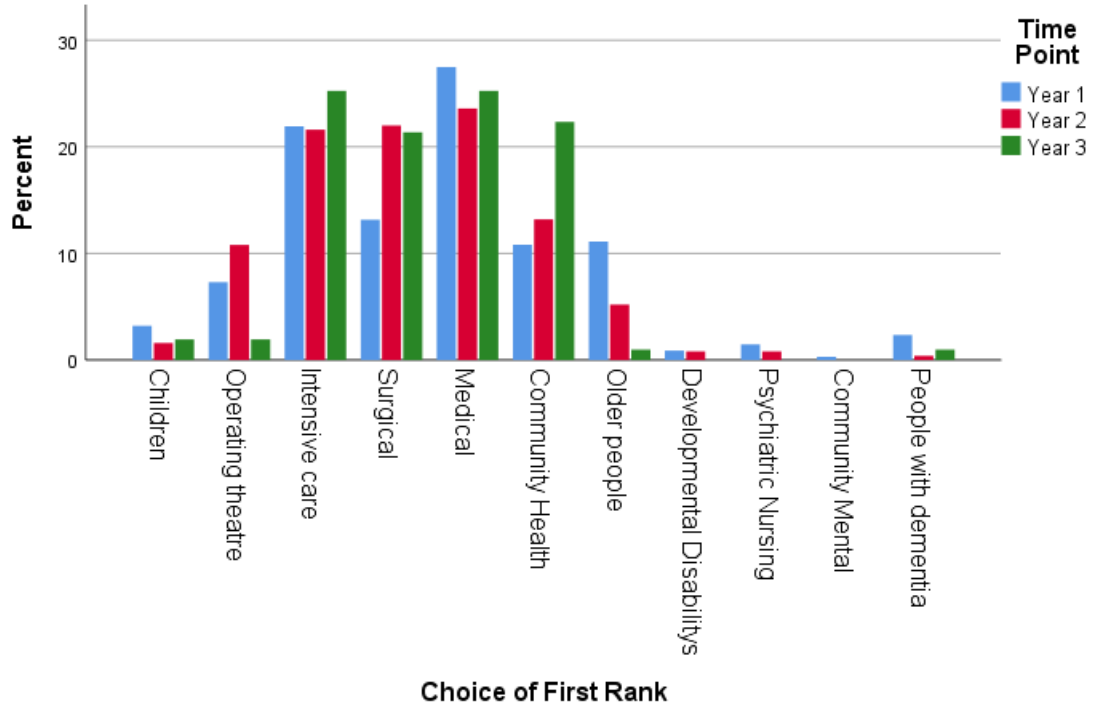
Working with older adults was ranked in first place by 11.1% of students at T1, by 5.2% at T2 and by 1% at T3. Only 2.3% of students ranked working with people with dementia as their first choice at T1, and only one student ranked it first at T2 and T3 (0.4%, 1%).

The number of students selecting each career as their first choice are shown in Table 9 and these percentages over time are illustrated in Figure 6.

Table 9: Choice of first rank for adult nursing students

	T1 n=342		T2 n=250		T3 n= 103	
	n	%	n	%	N	%
Medical	94	27.5	59	23.6	26	25.2
Intensive care	75	21.9	54	21.6	26	25.2
Surgical	45	13.2	55	22.0	22	21.4
Older people	38	11.1	13	5.2	1	1.0
Community Health	37	10.8	33	13.2	23	22.3
Operating theatre	25	7.3	27	10.8	2	1.9
Children	11	3.2	4	1.6	2	1.9
People with dementia	8	2.3	1	0.4	1	1.0
Psychiatric Nursing	5	1.5	2	0.8	0	0.0
Developmental Disabilities	3	0.9	2	0.8	0	0.0
Community mental	1	0.3	0	0.0	0	0.0

Figure 6: Choice of first rank (%) at each time point for adult nursing students



In terms of least favoured choices, children and psychiatric nursing were the careers most frequently ranked last by students studying adult nursing. Working with older people was ranked last by 5.8% of students at T1, by 6.4% at T2, and by 5.8% at T3. Working with people with dementia was ranked last by 4.4% of students at T1, by 8% at T2 and by 4.9% at T3.

Students choices for each last rank (least preferred) is presented in Table 10.

Table 10: Choice of last rank for adult nursing students

	T1 n= 342		T2 n=250		T3 n=103	
	n	%	n	%	N	%
Children	102	29.8	68	27.2	34	33.0
Psychiatric Nursing	62	18.1	40	16.0	15	14.6
Community mental	56	16.4	35	14.0	15	14.6
Developmental Disabilities	42	12.3	26	10.4	11	10.7
Older people	20	5.8	16	6.4	6	5.8
Operating theatre	16	4.7	21	8.4	12	11.7
People with dementia	15	4.4	20	8.0	5	4.9
Community Health	14	4.1	13	5.2	3	2.9
Surgical	8	2.3	6	2.4	0	0.0
Medical	5	1.5	3	1.2	2	1.9
Intensive care	2	0.6	2	0.8	0	0.0

Mental health branch

The specialties ranked first by each mental health student were less variable than the rankings of adult nurses. The majority of students chose psychiatric nursing as their first rank at all three time points (61.5%, 61.7%, and 64% respectively). The second most popular was community mental health at 25.3% at T1, 20% at T2 and 24% at T3. Working with older people was only ranked first by one student at T3. Seven (7.7%) students ranked working with people with dementia as their first choice at T1, but after that only one (4%) student ranked it as their first choice at T3.

The first ranked (most preferred) career choice of the mental health nursing students at each time point is presented in Table 11.

Table 11: Choice of first choice ranks for mental health nursing students

	T1 n= 91		T2 n=60		T3 n=25	
	n	%	N	%	n	%
Psychiatric Nursing	56	61.5	37	61.7	16	64.0
Community mental	23	25.3	12	20.0	6	24.0
People with dementia	7	7.7	0	0.0	1	4.0
Community Health	2	2.2	2	3.3	1	4.0
Children	1	1.1	5	8.3	0	0.0
Operating theatre	1	1.1	2	3.3	0	0.0
Developmental Disabilities	1	1.1	2	3.3	0	0.0
Intensive care	0	0.0	0	0.0	0	0.0
Surgical	0	0.0	0	0.0	0	0.0
Medical	0	0.0	0	0.0	0	0.0
Older people	0	0.0	0	0.0	1	4.0

4.3.3 Q2. Do student career preferences change over time in undergraduate training?

Adult branch

The profile of rankings for each career choice, at each time point, and significant changes as indicated by a Wilcoxon signed-ranks test is outlined in Appendix K.

The results show that medical, intensive care and surgical careers were the top three mean ranked (rank-ordered by mean rank), and remained so at each time point. Working with children, psychiatric nursing, developmental disability, and community mental health were consistently in the bottom four mean ranks for those studying adult nursing.

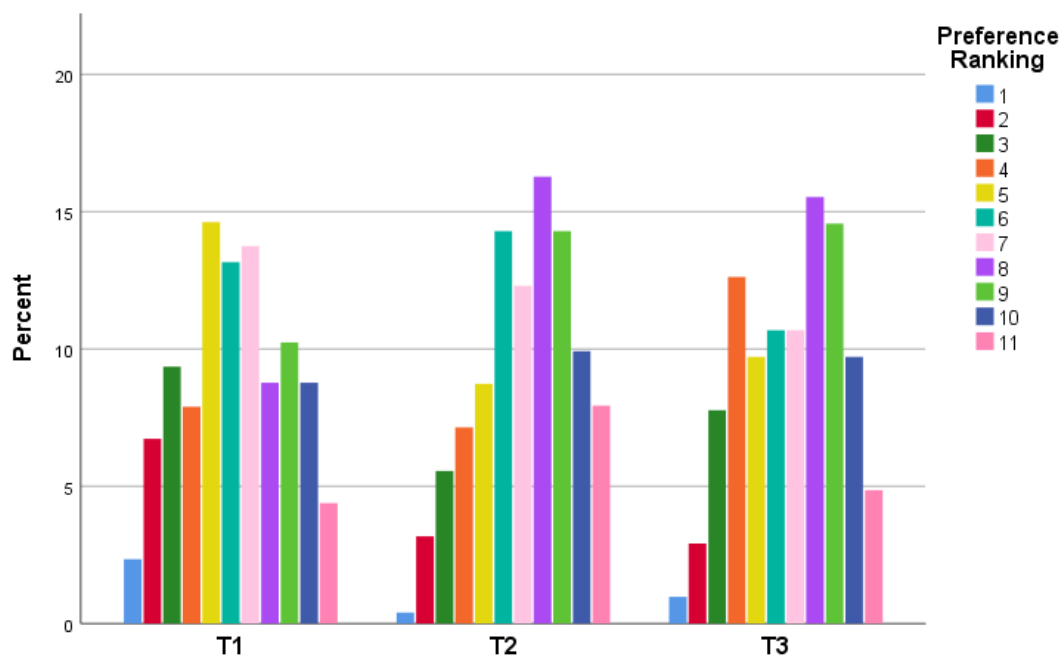
Preference for community health was ranked 5th at T1 and 4th at T2 and T3. There was strong evidence for an increase in preferences at T3 compared to T1 ($Z=4.55$, $p<0.001$) and at T2 compared to T1 ($Z= -2.00$, $p=0.046$).

Working with older people was ranked 6th at all three time points. There was some evidence for a decrease in preferences at T2 compared to T1 ($Z=2.04$, $P= 0.042$), but no difference was found between T1 and T3 ($Z= -0.78$, $p=0.448$).

This was also found for working with people with dementia, with strong evidence of lower rankings in T2 compared to T1 ($Z= -5.209$, $p<0.001$) but not T3 and T1 ($Z=1.26$, $p=0.209$). Working with people with dementia was consistently ranked 7th.

Figure 7 illustrates the percentage of ranks at each time point for working with people with dementia.

Figure 7: Choice of rank (%) for working with people with dementia in adult nursing students



Mental Health branch

The profile of ranks for mental health nurses and results of the Wilcoxon signed-rank tests are shown in Appendix L. At T1 the three most popular specialties were psychiatric nursing, community mental health and people with dementia. However, at T2 community health was ranked 3rd and remained so at T3, while dementia is 4th for T2 and T3. However, there was no evidence for the statistical significance of these changes.

4.3.4 Q3. What factors (including TFD) are associated with a preference for working with people with dementia?

Model 1: T1 factors associated with preferences for working with people with dementia

Multiple regression analysis was used to test what measures significantly predicted participants' ranking of dementia at T1. Initially, Pearson's correlations of each *a priori* selected variable were analysed, shown in Table 12. Having previous experience with dementia was significantly correlated with a higher preference for working with people with dementia, as was higher scores on the MCRS, ADQ, DAS and JSE (measures of attitudes) and the DK (a measure of knowledge). Students studying mental health nursing also had a significantly higher preference for working with people with dementia.

The results of the multiple regression (Table 13) indicated the 12 predictors explained 16% of the variance ($R^2=.16$, $F(11,383) = 6.25$, $p < 0.001$). It was found that MCRS scores significantly predicted preference for working with people with dementia ($\beta = -0.26$, $p < 0.001$), as did the type of branch ($\beta = -0.16$, $p = 0.001$). Therefore, there is strong evidence that higher MCRS scores and participants studying mental health are predictive of a higher preference for working with people with dementia.

Table 12: Pearson correlations of predictor variables with ranking for working with people with dementia at T1 (n=396)

	Mean	Std. Deviation	Pearson correlation	Sig.
Dementia Ranking T1 (1-11)	5.95	2.63		
Nursing Branch (Adult vs MH)	0.21	0.41	-0.17	<0.001
University (UoS vs UoB)	0.16	0.37	0.07	0.700
Student Gender (Female vs Male)	0.11	0.31	-0.01	0.458
Ethnicity (White British/Euro vs Other Ethnic Group)	0.17	0.38	0.06	0.117
Dementia Experience (Yes vs No)	0.42	0.49	0.18	<0.001
Student Age	24.88	8.03	-0.08	0.066
ADKS at T1 (0-30)	22.87	3.00	-0.04	0.212
DK at T1 (0-20)	15.19	2.57	-0.12	0.008
MCRS at T1 (11-66)	55.86	6.25	-0.35	<0.001
ADQ at T1 (19-95)	79.70	5.62	-0.21	<0.001
DAS at T1 (20-140)	115.15	13.04	-0.28	<0.001
JSE at T1 (20-140)	116.54	10.54	-0.14	0.003

Possible scores presented in brackets. Lower rankings of *Dementia Ranking T1* equate to a higher preference, and dichotomous variables are coded 0 vs 1

Table 13: Multiple regression for rankings of working with people with dementia at T1 (n=396)

	B	SE B	β	T	p
(Constant)	14.88	2.08		7.16	0.000
Nursing Branch (Adult vs MH)	-1.00	0.31	-0.16	-3.22	0.001
University (UoS vs UoB)	0.41	0.35	0.06	1.18	0.238
Student Gender (Female vs Male)	-0.07	0.41	-0.01	-0.16	0.874
Ethnicity (White British/Euro vs Other Ethnic group)	0.15	0.37	0.02	0.40	0.692
Dementia Experience (Yes vs No)	0.30	0.28	0.06	1.08	0.280
Student Age	-0.02	0.02	-0.05	-1.02	0.309
ADKS at T1 (0-30)	0.03	0.05	0.03	0.53	0.595
DK at T1 (0-20)	-0.04	0.06	-0.04	-0.69	0.493
MCRS at T1 (11-66)	-0.11	0.03	-0.26	-4.06	<0.001
ADQ at T1 (19-95)	-0.02	0.03	-0.47	-0.78	0.438
DAS at T1 (20-140)	-0.01	0.01	-0.07	-0.95	0.344
JSE at T1 (20-140)	0.01	0.01	0.03	0.47	0.640

Possible scores presented in brackets. Lower rankings of *Dementia Ranking T1* equate to a higher preference, and dichotomous variables are coded 0 vs 1.

Model 2: T3 factors associated with preferences for working with people with dementia

Multiple regression analysis was used to test what measures significantly predicted participants' ranking of working with people with dementia at T3. Associations between variables and T3 preference for working with people with dementia were explored. Pearson correlations and significance for each variable are shown in Table 14. Students in the mental health branch and students in the TFD programme were significantly correlated with greater preferences for working with people with dementia at T3. This was also true for measures of attitude: higher scores on the MCRS, ADQ, DAS, and JSE were significantly correlated with a higher preference. Students' rankings at T1 and T3 were significantly correlated.

The results of the regression (Table 15) indicated the 14 predictors explained 40% of the variance ($R^2=.40$, $F(13,108)=4.45$, $p<0.001$). Two variables were significant: students rank for working with people with dementia at T1 ($\beta = 0.29$, $p=0.004$) and the MCRS at T3 ($\beta = -0.43$, $p<0.001$). This indicates strong evidence that higher preferences at T1 and higher scores on the MCRS at T3 are predictive of a higher preference at T3.

Table 14: Correlations of rankings for working with people with dementia at T3 (n=109)

	Mean	Std. Deviation	Pearson correlation	Sig.
Dementia Ranking T3 (1-11)	6.38	2.63		
Nursing Branch (Adult vs MH)	0.18	0.39	-0.27	0.003
University (UoS vs UoB)	0.08	0.28	0.00	0.480
Student Gender (Female vs Male)	0.10	0.30	-0.07	0.231
Ethnicity (White British/Euro vs Other Ethnic Group)	0.18	0.39	-0.04	0.336
Dementia Experience (Yes vs No)	0.48	0.50	-0.01	0.455
Student Age	28.28	9.14	-0.14	0.080
ADKS at T3 (0-30)	24.74	2.35	-0.09	0.167
DK at T3 (0-20)	16.31	2.28	-0.07	0.242
MCRS at T3 (11-66)	55.28	6.84	-0.48	<0.001
ADQ at T3 (19-95)	80.83	6.54	-0.23	0.008
DAS at T3 (20-140)	120.07	12.21	-0.30	<0.001
JSE at T3 (20-140)	116.50	12.08	-0.18	0.027
TFD (TFD vs Non-TFD)	0.26	0.44	0.19	0.025
Dementia Ranking T1 (1-11)	6.04	2.51	0.44	<0.001

Possible scores presented in brackets. Lower rankings of *Dementia Ranking T3* equate to a higher preference, and dichotomous variables are coded 0 vs 1.

Table 15: Multiple regression for rankings of working with people with dementia at T3 (n=109)

	B	SE B	β	T	p
(Constant)	12.90	3.82		3.38	0.001
Nursing Branch (Adult vs MH)	-1.24	0.68	-0.18	-1.82	0.072
University (UoS vs UoB)	-0.66	0.94	-0.07	-0.71	0.481
Student Gender (Female vs Male)	0.03	0.77	0.00	0.04	0.965
Ethnicity (White British/Euro vs Other Ethnic Group)	0.11	0.63	0.02	0.17	0.868
Dementia Experience (Yes vs No)	-0.14	0.47	-0.03	-0.30	0.764
Student Age	-0.02	0.03	-0.06	-0.74	0.464
ADKS at T3 (0-30)	-0.05	0.11	-0.04	-0.46	0.647
DK at T3 (0-20)	0.01	0.11	0.01	0.12	0.905
MCRS at T3 (11-66)	-0.17	0.05	-0.43	-3.60	<0.001
ADQ at T3 (19-95)	0.03	0.05	0.08	0.67	0.507
DAS at T3 (20-140)	-0.01	0.03	-0.06	-0.48	0.630
JSE at T3 (20-140)	0.01	0.03	0.07	0.55	0.582
TFD (TFD vs Non-TFD)	0.69	0.60	0.12	1.16	0.251
Dementia Ranking T1 (1-11)	0.29	0.10	0.28	2.98	0.004

Possible scores presented in brackets. Lower rankings of *Dementia Ranking T3* equate to a higher preference, and dichotomous variables are coded 0 vs 1

4.3.5 Q4: What do nursing students report as the reasons for their preferences?

In total 110 students gave reasons for their rankings of working with dementia: 25 contributed to reasons for high preferences, 24 for low and 48 for middle rankings. Two categories, which did not represent reasons, were found across rankings.

High preferences

Reasons for ranking working with people with dementia more preferably are presented in Table 16. Four main categories were identified: *aligns with personal skill set*, *positive aspects of work*, *positive past experiences*, and *enjoyment and interest*.

Table 16: Reasons for high preference (ranks 1-3)

Category label	No.	Definition	Examples
Aligns with personal skill set	8	Students describe how they feel most confident, comfortable and have lots of experience in this area	<p><i>'I listed dementia 3 as I worked in this area for 7.5 years prior to my nursing degree. Therefore, I am comfortable with this patient group'</i></p> <p><i>'I have had substantial learning experiences of working with older and younger adults with differing severities and progressions of dementia'</i></p> <p><i>'I have had experience with dementia hence high rank, I feel confident working with people with dementia'</i></p>
Positive aspects of work	8	Students describe positive aspects of the work. Including its holistic focus and rewarding.	<p><i>'an interest as I like working with people holistically'</i></p> <p><i>'I find working with people with dementia are challenging but rewarding. I enjoy building a relationship with them'</i></p> <p><i>'I love being able to empower them to live as independently as possible in their homes'</i></p>
Enjoyment and interest	6	Simply state that they enjoy working with this patient group or have an interest.	<p><i>'it has always interested me'</i></p> <p><i>'Enjoy working with dementia patients'</i></p> <p><i>'I'm interested in the decline of the mind, especially interested in vascular dementia'</i></p>
Positive past experiences	6	Students describe growing interest in working with people with dementia directly from previous experiences or describe past experiences as enjoyable or pleasant.	<p><i>'Enjoyed working with those with dementia and their families whilst on placements'</i></p> <p><i>'Following placements working in a community mental health team for older people and on an acute elderly specialist dementia ward I've grown great interest to work within the field of dementia'</i></p>

Low preferences

Table 17 outlines the reasons given for ranking working with people with dementia as their least preferred choice. Four main categories were found: *prefer other areas*, *negative aspects of work*, *lack of skills or experience*, and *personal experience*.

Table 17: Reasons for low preference (ranks 9-11)

Category label	No.	Definition	Examples
Prefer other areas	7	Students simply state that they prefer other areas more.	<p><i>'enjoy working with people with dementia but have other areas I would prefer to work in other areas'</i></p> <p><i>'I'm happy working with people with dementia but I prefer other disciplines'</i></p> <p><i>'Prefer surgical, find that a lot of people with dementia are mainly medical'</i></p>
Negatives characteristics work	6	Students describe the difficulties with the work. They describe problems with the work environment and communication with patients.	<p><i>'I found dementia care understaffed, testing and stressful'</i></p> <p><i>'9-fairly low as it's just a preference. I find it difficult to engage with patients sometimes'</i></p> <p><i>'Dementia affects people differently and although rewarding it is very unpredictable'</i></p> <p><i>'I had HCA experience and they have been one of the most difficult people to care of because it's distressing that they don't understand sometimes'</i></p>
Lack of skills or experience	3	Describe how they do not feel they have knowledge or skills to work with this patient group or do not enjoy using these skills.	<p><i>'Minimal experience. Similarly, with rank 11 it's a skill set I am not too fond of using. I enjoy working with more active people.'</i></p> <p><i>'Working with those that have dementia is not my strong point'</i></p>
Personal Experiences	2	Difficulties due to personal experience with dementia	<p><i>'My Grandma currently has dementia so at the moment would be challenging'</i></p> <p><i>'As I have had experience with people with dementia in both professional and personal life, I would find it really difficult to cope with a full-time job in this sector'</i></p>

Middle rankings

The majority of students ranked working with people with dementia between 4th and 9th place. Reasons given for their ranking could be split into positive reasons and negative reasons as well as general commentary. In total there were 12 positive statements whereas 25 were negatively framed.

Most of the reasons given for rankings could be categorised as those already described above within the reasons given for low and high preferences. Positive statements could be grouped into the four existing main categories: *positive characteristics of work* (n=4), *enjoyment and interest* (n=4), *aligns with personal skill set* (n=2), and *positive past experiences* (n=1).

Negative reasons mapped onto three of the existing categories for low preferences. The most common reason given was the *negative characteristics of work* (n=11) this included statements about communication difficulties with patients and identified it as a stressful and challenging environment:

'Enjoy working with people with dementia although at times it can be very challenging physically and mentally as a nurse'

Two students also described how the progression of the disease was a negative of the work:

'I prefer to work in a position that there can be improvement and future of new careers/families (relationships i.e. working-age adults)'

'Low down on my list because as an illness it tends to deteriorate so I find it more difficult to find the ways to win at work'

In addition, statements referred to *prefer other areas* (n=5) and *lack of skills or experience* (n=4). A new category was also identified *prefer to gain new experiences* (n=4) where students described having had experience with working with dementia and therefore would prefer to work in other areas to develop new skills.

Other comments

Across all rankings, some students gave general commentary rather than reasons. Four students referred to dementia as a career option they might pursue in the future. Ten students commented on the likelihood of working with people with dementia regardless of setting or specialty, or preference. Students recognised the prevalence and need of this patient group and the inevitability of working with this group:

'I believe this is one of the most pressing issues in contemporary healthcare and a field that requires a high standard of skill and strength of character. I feel that I will invariably work with this group regardless of my career in MHN (mental health nursing).'

'I see it every day at work in every aspect so it is a part of my job anyway. So rating here actually doesn't matter'.

4.4 Results- medical students

4.4.1 Response rate

Part 1: T1-T3

443 medical students were approached to take part in the TFD study. A total number of 386 medical student participants were consented in the main TFD sample (87% response rate). The sample for this study is 352 and includes those that completed the JSE specialty preference question (at any time point).

Out of the 352 participants that completed the JSE exercise: 320 (90%) completed at T1, 304 (86%) at T2 and 195 (55%) at T3. The decreasing numbers at follow up was due to reduced attendance at lectures in later years of study, where follow up data were collected. The demographics of this sample can be seen in Table 18.

Table 18: Participant demographics- medical students (part 1, n=352)

Characteristic		Median/ n	IQR/%
Age at T1		20	19-22
Age at T1 Category	≤20	199	61.8
	≥21	123	38.2
University	BSMS	264	75.0
	UEA	88	25.0
Gender	Female	209	60.2
	Male	138	39.8
Ethnicity Category	White British/European	229	67.0
	Other Ethnic groups	113	33.0
TFD	TFD	264	75.0
	Non-TFD	88	25.0

Note: missing data in some fields

Part 2: T5

This sample includes students who completed the career preferences questionnaire at T5 in the final term of their last year. This includes students who have previously completed the JSE specialty preference question at T1-T3 (n=91) but also, additional students and a further cohort (n=114). The possible student population was 413 and the numbers completing was 205 (50%). However, the total number in attendance and therefore the actual number approached is not known. The demographics of this sample can be seen in Table 19

Table 19: Participant demographics- medical students (part 2, n=205)

Characteristic		Median/N	IQR/%
Age at T5		24	23-25
Age at T5 Category	≤24	128	64.0
	≥25	72	36.0
University	BSMS	186	90.7
	UEA	19	9.3
Gender	Female	124	60.8
	Male	80	39.2
Ethnicity Category	White British/European	156	78.4
	Other Ethnic Groups	43	21.6
TFD	TFD	76	37.1
	Non-TFD	129	62.9

Note: missing data in some fields

4.4.2 Q1. Where do Medical students want to work?

Part 1 (T1-T3)

At each time point, the modal response was undecided. At T1 the most popular specialties were surgery (13.1%), followed jointly by medicine specialties (9.1%) and GP (7.5%). At T3, GP was the most popular choice (15.9%) followed by medicine specialties (13.8%), and then surgery (7.2%). The most popular medicine specialty was cardiology at both T1 (2.2%) and T3 (4.1%). Geriatric medicine was chosen by less than 1.5% at each time point. For surgery, cardiothoracic surgery was the most popular specialty at T1 (2.5%), but orthopaedic and undecided or other surgical specialties were at T3 (2.1%).

Table 20 presents the specialty choices of the medical students, at each time point.

Table 20: Medical students' specialty choices at T1, T2 & T3

	Part 1					
	T1 (n=320)		T2(n=304)		T3(n=195)	
	n	%	n	%	N	%
Surgery specialties total	42	13.1	27	8.9	14	7.2
Cardiothoracic	8	2.5	0	0.0	1	0.5
Orthopaedic Surgery	7	2.2	6	2.0	4	2.1
Surgery (other/not decided)	7	2.2	6	2.0	4	2.1
Trauma/Critical care	7	2.2	10	3.3	2	1.0
Urology	4	1.3	2	0.7	0	0.0
General Surgery	3	0.9	0	0.0	0	0.0
Neurosurgery	3	0.9	0	0.0	1	0.5
Plastic Surgery	3	0.9	2	0.7	1	0.5
Otolaryngology	0	0.0	1	0.3	1	0.5
Medicine specialties total	29	9.1	37	12.2	27	13.8
Cardiology	7	2.2	7	2.3	8	4.1
Haematology/oncology	5	1.6	4	1.3	3	1.5
Neurology	3	0.9	5	1.6	1	0.5
Infectious diseases	3	0.9	3	1.0	3	1.5
Geriatrics	2	0.6	2	0.7	3	1.5
Endocrinology	2	0.6	2	0.7	2	1.0
Medicine (other/not decided)	2	0.6	3	1.0	3	1.5
Nephrology/renal	2	0.6	0	0.0	0	0.0
Dermatology	1	0.3	3	1.0	2	1.0
Gastroenterology	1	0.3	2	0.7	2	1.0
General internal medicine	1	0.3	4	1.3	0	0.0
Rheumatology	0	0.0	1	0.3	0	0.0
Physical Medicine/ Rehabilitation	0	0.0	1	0.3	0	0.0
Family Medicine/GP	24	7.5	24	7.9	31	15.9
Paediatrics	22	6.9	16	5.3	10	5.1
Psychiatry	21	6.6	18	5.9	8	4.1
Emergency Medicine	16	5.0	31	10.2	11	5.6
Obstetrics/Gynaecology	15	4.7	14	4.6	7	3.6
Anaesthesiology	7	2.2	8	2.6	7	3.6
Radiology	3	0.9	1	0.3	1	0.5
Pathology	1	0.3	1	0.3	0	0.0
Preventive Medicine	1	0.3	1	0.3	1	0.5
Public Health	1	0.3	1	0.3	2	1.0
Ophthalmology	0	0.0	3	1.0	3	1.5
Other	2	0.6	3	1.0	2	1.0
Undecided	136	42.5	119	39.1	71	36.4

Note: specialties not chosen at any time point are not presented

Part 2 (T5)

Specialty choices

In total, 86% identified a preferred area; 14% specified they did know or stated more than one choice. The most common responses were GP (26.5%), medicine specialties (21.6%) and surgical specialties (7.8%). The most popular medical specialties were acute medicine (3.4%), the most popular surgical was undecided/other (2.9%).

Five students (2.5%) identified geriatric medicine as their preference, which was the second most popular medical specialty, joint with cardiology and palliative care (2.5%), seven identified psychiatry (3.4%).

Table 21 presents the profile of students' preferred specialty choices at T5.

Table 21: Medical students' specialty choices at T5

	Part 2	
	T5 n=204	
	N	%
General Practice	54	26.5
Surgery specialties total	16	7.8
Surgery (other or undecided)	6	2.9
Orthopaedic Surgery	5	2.5
Otolaryngology	4	2.0
Plastic Surgery	1	0.5
Cardiothoracic	0	0.0
Medicine specialties total	44	21.6
Acute medicine*	7	3.4
Cardiology	5	2.5
Geriatrics	5	2.5
Palliative care	5	2.5
Neurology	4	2.0
Endocrinology	4	2.0
Medicine (other/not decided)	4	2.0
Dermatology	3	1.5
haematology/oncology	3	1.5
Infectious diseases	2	1.0
Gastroenterology	2	1.0
Paediatrics	14	6.9
Psychiatry	7	3.4
Emergency Medicine	15	7.4
Obstetrics/Gynaecology	9	4.4
Anaesthesiology	8	3.9
Radiology	1	0.5
Public Health	1	0.5
Other	6	2.9
Undecided	29	14.2

Note: missing data from 1 participant. Specialties that were not chosen are not presented.

*appears at T5 as a new category, not previously listed in T1, T2 or T3, because it is reported as a choice by more than one participant at T5.

Dementia preferences

The stated preferences for working with people with dementia are presented in Table 22. The majority of students had a high preference for working with people with dementia in the future (58.9%).

Table 22: Medical student's preferences for working with people with dementia

		N	%
Preference for working with people with dementia	Low preference	33	16.2
	Neutral	52	25.5
	High preference	119	58.3
	Total	204	100.0

Note: missing data from 1 participant

4.4.3 Q2. Do preferences change over time?

Only general changes in preferences could be explored, not those specifically relating to dementia. This was because there was no response choice related to dementia until T5 (part 2), and the number of students choosing dementia-related specialties was too low to be compared between training years.

Part 1

Three relevant trends are of note. First, the percentage of people choosing psychiatry goes down at each time point. Second, the number selecting GP increased from 7.5% at T1 to 15.9% at T3 (see Table 20). Third, the number of students reporting that they are undecided on specialty choice went down at each time point with only 36.4% not choosing a preferred choice at T3.

Part 2

Specialty preferences from T1-T3 to T5 were compared. However, the questions were not asked in a consistent way; T5 was an open question whereas T3 gave choices. Therefore comparisons are cautionary, as the responses elicited may have been different depending on the form of questions and are from an overlapping, but

different sample. However, trends of note include that the most popular areas at T3 were also consistent with T5 findings, and consistent with the trends described above, that is, a continued increase in those choosing GP, reduction in psychiatry and the number of undecided continues to decrease.

4.4.4 Q3. What factors (including TFD) are associated with a preference for working with people with dementia?

Logistic regression was conducted to assess whether demographics and participation in TFD (predictor variables) were related to a preference for working for dementia at T5 (dependent variable). Cross-tabulations of each predictor for each level of dependant variable can be seen in Table 23.

Table 23: Cross tabulations of preferences for working with people with dementia by predictor variables (n=204)

		Low preference		Neutral		High preference		Total
		n	%	n	%	n	%	n
TFD	TFD	7	9.2	12	15.8	57	75.0	76
	Non-TFD	26	20.3	40	31.3	62	48.4	128
Gender	Female	14	11.4	24	19.5	85	69.1	123
	Male	18	22.5	28	35.0	34	42.5	80
Age at T5 Category	≤24	23	18.1	32	25.2	72	56.7	127
	≥25	9	12.5	19	26.4	44	61.1	72
Ethnicity Category	White British /European	27	17.4	35	22.6	93	60.0	155
	Other Ethnic Group	5	11.6	16	37.2	22	51.2	43
University	BSMS	32	17.3	47	25.4	106	57.3	185
	UEA	1	5.3	5	26.3	13	68.4	19

The results of the logistic regression (Table 24) show that males are significantly more likely to hold low preferences (vs high) and neutral preferences (vs high) than

females. Those who did not take part in TFD were significantly more likely to hold lower preferences (vs high) and neutral preferences (vs high). No significant differences were found for ethnicity or age. University was not explored because of the small sample in one group.

Table 24: Logistic regression model for medical student preferences for working with people with dementia

	b(SE)	95% C1 for Odds Ratio		
		lower	Odds ratio	Upper ratio
Low vs High preference				
Intercept	-0.568 (0.646)			
TFD (TFD vs Non-TFD)	-1.136(0.482)*	0.125	0.321	0.826
Gender (female vs male)	-1.215(0.423)**	0.130	0.297	0.680
Age (younger vs older)	0.302(0.462)	0.547	1.353	3.347
Ethnicity (white British vs Other)	0.205(0.564)	0.406	1.227	3.711
Neutral vs High preference				
Intercept	0.777(0.484)			
TFD (TFD vs Non-TFD)	-1.100(0.397)**	0.153	0.333	0.725
Gender (female vs male)	-1.124(0.361)**	0.160	0.325	0.660
Age (younger vs older)	-0.065(0.376)	0.449	0.937	1.957
Ethnicity (white British vs Other)	-0.675(0.410)	0.228	0.509	1.136

R²=.14 (Coz & Snell), .17 (Nagelkerke). Model $\chi^2(8)= 30.86$, P<0.001.

*p<0.05 **p<0.01

4.4.5 Q4: What do medical students report as the reasons for their preferences?

In total 90 students gave reasons for their preference of working with dementia. The analysis is presented in three parts: reasons given for stating they have a low preference for wanting to work with people with dementia (n= 10), neutral (n=18), and for high preference (n=62).

Low preference

Table 25 outlines the reasons a low preference for wanting to work with people with dementia. Two main categories were found *negative aspects of work* and *lack of interest*. A third category relating to opinion rather than reason was found: *recognition of importance*.

Table 25: Reasons for low preference

Category label	No	Definition	Examples
Negative aspects of work	13	Difficulties including emotional difficulties, and challenges meeting needs and personal barrier including stating that certain personal characteristics are needed.	<i>'It requires a lot of concentration and patience,' 'I find it challenging to address patients concerns if they have dementia' 'Little satisfaction. Poor outcomes. Sad/emotional. Difficult'</i>
Lack of interest	4	Not an interest or interested elsewhere	<i>'Not an area of interest' 'I like working with young people'</i>
Recognition of importance	2	Students state the importance despite lack of interest.	<i>'Obviously the work is incredibly important'</i>

Neutral

Table 26 outlines the reasons given for stating that they had 'no opinion' about wanting to work with people with dementia. Five main categories were found. This included two existing categories: *negative aspects of work*, *lack of interest*, and three new: *inevitable*, *depends on specialty* and *ambivalence*

Table 26: Reasons for neutral preferences

Category label	No	Definition	Examples
Ambivalence	5	Indifferent to working with dementia	<i>'No strong feelings either way'</i> <i>'I don't mind either way'</i>
Lack of interest	6	State that it is not an interest of theirs or do not plan to pursue a related specialty. Some state that they would not discriminate or will work in future.	<i>'The specialties I prefer at the moment have varying contact with dementia, but it's not something I especially want to work with, but I'm not avoiding it'</i> <i>'I'm happy to work with all people, although I do not aim to be in elderly care'</i>
Inevitable	4	Inevitable part of Job. Recognise prevalence.	<i>'..... However it is very prevalent and I am very likely to encounter patients with dementia regardless of the what specialty I choose...'</i>
Depends on specialty	4	Not sure as not sure of specialty or unlikely due to specialty chosen	<i>'Unsure as to what I want to do'</i> <i>'I am a military trainee so will have minimal exposure with dementia'</i>
Negative aspects of work	2	As before.	<i>'Challenging'</i>

High preference

Table 27 outlines the reasons given for wanting to work with people with dementia. Six main categories were found. This includes three existing themes: *inevitable*, *dependent on specialty* and *ambivalence*, and three new: *interest/enjoy related specialties*, *positive reasons*, and *would not discriminate*.

Table 27: Reasons for high preferences

Category label	No	Definition	Examples
Inevitable	20	An inevitable part of Job. Recognise prevalence. Including those stating that they intend to pursue GP training recognise inevitably working with people with dementia.	<i>'In general practice capacity, as very important part of NHS, but not specifically'</i> <i>'People with dementia will inevitably be part of my everyday working life, that is just reality'</i>
Interest/enjoy related specialties	12	Considering or interest in related specialty	<i>'I enjoyed placements on care of elderly and am considering that as a specialty. This would obviously involve working with people with dementia by default'</i> <i>'I have an interest in Geriatrics and A&E both of which will involve engagement with patients with dementia'</i>
Positive aspects of the work	27	Positive aspects of the work including; rewarding, enjoyment and complexity, personal attributes including understand needs and confidence in communication skills	<i>'I enjoy the challenges and rewards you gain from working with dementia patients'</i> <i>'I have a better understanding now of the issues and needs of patients with dementia'</i>
Dependent on specialty	4	Not sure as not sure of specialty or unlikely due to specialty chosen	<i>'I'd be happy to work with people with dementia but I'm considering a career in paediatrics so hopefully wont encounter too many cases of dementia there'</i>
Ambivalent	3	Indifferent to working with dementia	<i>'I don't mind working with people who have dementia but it's not something I'm particularly passionate about'</i>
Would not discriminate	3	Would not discriminate	<i>'People with dementia are not people I would avoid working with in any way. I do not discriminate in any way. including based on a medical condition I want to work with all people'</i>

4.5 Discussion

4.5.1 Nurses key findings

Profiles of student preferences; older adults and people with dementia

The first choice career for the majority of adult nurses was either medical, surgical or intensive care at each time point; collectively these choices accounted for 62%, 67% and 71% of all first-choice rankings. This is in line with previous research with technical specialties being more preferred (Stevens, 2011, Happell and Brooker, 2001, Gould et al., 2012).

Working with older people was the fourth most frequently ranked as the first choice for adult nursing students at T1. This is surprising given the literature outlining that working with older people is one of the least favoured choices in all years of study (Happell, 1999, Henderson et al., 2008, Kloster et al., 2007, Stevens, 2011, Xiao et al., 2013, Matarese et al., 2019, Hunt et al., 2020). However, previous studies have sampled students on general nursing programmes where branches of nursing may be selected later, rather than only adult branches. This preference, however, is not maintained, the number of students ranking working with older people in first place reduces from 11.1% to 5.2% and 1% at subsequent time points. This study appears to replicate the finding that working with older adults is not a popular first choice career, but this may not be the case upon entering the course instead it diminishes over time spent in training.

The number of adult nursing students ranking working with dementia in first place was low and decreased over time. More students ranked it in the last place than first; this is notable as these students are ranking four other areas less relevant to adult nursing as more preferred to working with people with dementia (i.e. children, psychiatric, developmental disability, and community mental health). Dementia remained ranked seventh, at all three time points. Therefore, dementia was the least preferred after the four less relevant fields for adult nurses. This suggests that working with people with dementia is an unpopular choice for adult nursing students. This trend is also reflected in the reduction of relative rankings; there is a significant change seen between T1 and T2 for both working with older adults and people with dementia. This suggests that, like previous literature, preference for working with older people may reduce during training. A novel finding is that this may also apply

to preferences for working with people with dementia. An implication is training is an influential time on preferences. The reasons for these changes will be explored further in SS3.

Factors associated with preferences for working with dementia

Students' preferences for working with people with dementia were positively associated with the previous experience of knowing or working with people with dementia at T1, but not at T3, at the univariate level. Therefore, experiences may influence preferences on entering training but other factors may be more important during training, explanations for this could be that by year three all students would then have direct experience of dementia, would have imbibed the dominant culture which may not promote a career in dementia, and may have since developed other interests.

Students that had participated in the TFD programme were associated with a higher preference of working with people with dementia on a univariate level at T3. However, when accounting for all other factors, including preferences at T1, it was not a significant predictor.

Measures of attitude and knowledge at T1 and measures of attitude at T3 were significantly correlated with preferences at the univariate level. Multivariate analysis revealed that attitude scores, measured by the MCRS, were significantly associated after accounting for other variables at both time points. The MCRS measures to what extent students view patients with a medical condition, in this case, people with dementia, as 'enjoyable, treatable and worthy of medical intervention and resources' (Christison et al., 2002, p. 257).

This is the first study to explore a dementia educational intervention, and attitudes and knowledge to dementia, as factors for student preferences for working with people with dementia.

Students' reasons for low and high preferences (content analysis)

The main reason given for a high preference for working with people with dementia was around enhanced skills and knowledge. In contrast, lack of knowledge and

experience was cited as a reason for low preference. Therefore, results suggest that students selected working with dementia more preferably because they feel competence in this field of work, suggesting perceived competence may be a factor. These results are consistent when viewed with the results of the systematic review (SS1) and appears to be a central factor in nursing student reasons for preferences for working with people with dementia specifically.

The most common category of response, regardless of ranking, was negative aspects of the work. This included communication difficulties and the 'challenging' nature of the work.

McKenzie and Brown (2014) found that the most cited reasons for barriers to working with people with dementia were lack of interest and communication difficulties. This is mirrored here in that stronger preferences for other areas were cited as a reason for low preference and communication difficulties were outlined as a challenge. In contrast, they found 'emotional demands' such as sadness as a deterrent for working with people with dementia, but this was not found in this study. This may be because students were asked to describe barriers to working in dementia care, rather than reasons for their rankings.

Summary

Working with people with dementia was not a preferred career choice of student nurses and this preference appears to reduce over time. Possible factors associated with preferences indicated by these results are the year of training, suggesting a role of HEI; attitudes to dementia; preparedness; and student's perceptions of work characteristics such as communication, and the challenging nature of work. There is tentative support for a positive role for TFD as it is correlated with preferences however, not when controlling for other factors.

4.5.2 Medical students key findings

Profiles of student preferences: specialty choices

The most popular career choices at the end of undergraduate training, in order of preference, were GP, medical specialties and surgical specialties. This is generally

comparable when looking at the specialty preferences of UK students and recent graduates (Lambert et al., 2018, Barber et al., 2018, Cleland et al., 2014). It also mirrors the number of applicants for GP, core medical and surgical training (The UK Foundation Programme Office, 2019) and indicates a fairly typical UK sample.

Individual preferences were changeable over training years. However, the students appear to be more decisive over time. This has also been found in the previous literature (Maudsley et al., 2010). Furthermore, The 2018 destination report of foundation doctors found that 65.3% of trainee doctors, who immediately decided to go into specialty training, reported that their specialty choice at the start of FY1 did not change at the end of FY2 (The UK Foundation Programme Office, 2019).

Change in preferences over time for specialties related to working with people with dementia could not be explored. This is because there was not a specific question to look at the relative preference for geriatric medicine or old age psychiatry, and few students reported this as their first choice, therefore comparisons over time were not able to be made.

Student preference for geriatric medicine appears low throughout T1-T3. At T5, five students stated it as their first choice (2.5%) making it a relatively popular medical specialty. However, this should not be viewed out of the context of the healthcare system as a contrast exists between the numbers applying versus need. The preferences are not in line with this need; geriatric medicine is the largest of medical specialties in terms of the number of training posts to be filled (Health Education England, 2019). Furthermore, the number of training posts is recognised as needing to increase to meet the number of consultant posts (The Royal College of Physicians', 2018). Therefore, there is a recognised tension in the numbers applying and unfilled posts (Fisher et al., 2014). These results are consistent with previous research in the UK indicating lower preferences for geriatrics (Ní Chróinín et al., 2013, Robbins et al., 2011).

This conflict is also true for preferences for GP. The results here suggest that preferences for GP goes up over time and, is objectively the most preferred specialty in terms of the numbers of students choosing it. This is also found in wider UK data: GP training has the largest number of applications, yet; it also has the largest

number of posts to be filled and one of lowest competition ratios (Health Education England, 2019). A target of 50% of all medical graduates entering GP training by 2016 (Department of Health, 2013) was not met and Targeted Enhanced Recruitment Schemes, with monetary incentives, have been introduced to further attract more GP trainees. Therefore, there are concerns of unfilled posts and an increasing need to promote the specialism in the UK (Gale et al., 2017).

Unfortunately, the measure used in this study did not include a breakdown of psychiatry specialties and therefore the preference for old age psychiatry was not able to be explored. However, it is of note that no student stated old age psychiatry as a choice in the 'other' category or in their open text response at T5. This is in keeping with current data on applications for old age psychiatry being one of least competitive, for example, old age psychiatry specialty training had fewer applications than available posts in 2018 (Health Education England, 2019). The data appears to show a decrease over time for psychiatry and is consistent with current research documenting the need to increase the popularity of psychiatry (Lambe et al., 2019).

Student preferences for working with people with dementia

Medical students' preferences for wanting to work with people with dementia were generally high. Currently there is limited research on preferences for working with people with dementia in medical students (Hebditch et al., 2020). This novel finding is positive in that many students state that they want to work with people with dementia. However, the content analysis revealed caution when interpreting this result. It appears that students' explanations for their preferences centre on two facets: why they may have an interest or not; and whether they are likely to work with people with dementia. This may be the result of a different interpretation of the question. As a large number of explanations centre on inevitability or dependence on specialty the positive rating of wanting to work with people with dementia may not represent personal preferences more than an understanding of the prevalence of the patient population. Furthermore, there was evidence of students being conscious of seemingly not discriminating against population groups. Therefore the positive rating of wanting to work with people with dementia may, for some students, represent the understanding of prevalence or lack of discrimination, rather than showing a true preference for wanting to work with this patient group. Therefore it is

unclear how this relates to personal preferences or active clinical interest in this patient group. This will be examined further in the qualitative study (SS3).

In line with this, the content analysis revealed that some themes were consistent across levels of student preferences. This includes the themes *Ambivalent*, *dependent on specialty* and *inevitable*.

The main reasons for a low preference include *negative characteristics of the work* (i.e. emotional difficulties, challenges meeting needs, and personal barriers). A neutral preference was characterised by *ambivalence* and *lack of interest*. The main explanations for higher preference were that contact was *inevitable*, interest in related specialties and *positive reasons* (e.g. rewarding, complexity and confidence).

There is no previous research on medical students' preferences for working with people with dementia to compare these positive or negative characteristics of work.

Factors associated with preferences for working with people with dementia in medical students

Female students were more likely to hold higher preferences for working with people with dementia. Previous research has not explored whether gender is associated with preferences for working with people with dementia in medical students, but this is in line with previous research when looking at preferences of medical students for working with older adults, geriatrics (Hebditch et al., 2020) and for working with older adults with cognitive impairment (Diachun et al., 2006a) and also for working with dementia in other healthcare professionals (Aström, 1986, McKenzie and Brown, 2014).

Students who took part in TFD had higher preferences for working with people with dementia. In the TFD sample, 75% (compared to 48% of the control group) had a high preference for working with people with dementia. This is in line with previous studies that suggest educational interventions in dementia may influence preferences (Jefferson et al., 2012, Goldman and Trommer, 2019). This indicates a possible role of TFD in building preferences. However, as stated before, caution is

needed when interpreting what this means in terms of personal preferences and requires further exploration to understand the influence of TFD.

Summary

The results were indicative of low preferences in related specialty choices, in keeping with general UK findings. However, overall high preferences of wanting to work with people with dementia were found. The majority of reasons given by students centred on the prevalence and an attitude of not wishing to discriminate. While positive, there is a need to explore how they feel about working with people with dementia in more detail. There was evidence for the educational intervention (TFD) and gender as factors associated with higher preferences.

4.5.3 Summary of key findings (medical and nursing)

A direct comparison is not possible due to differences in data collection and analysis, but a summary related to the research questions is provided below.

The data is consistent with other literature indicating a low preference for working with people with dementia in nurses and in medical students for related specialty choices. However, there was a conflicting result in medical students, with an average high preference for working with people with dementia.

In terms of factors related to preferences, there was some evidence of a positive effect of TFD for both medical and nursing students. For nursing students, the strongest predictor of preferences within their final year was the MCRS measure of attitudes (attitudes related to dementia preferences not explored in medical students). Medical students' preferences were related to gender, but this was not found in nursing students.

In reasons for their preferences, similarities were found such as interest and confidence in working with people with dementia, the challenging aspects of work, and as a positive the rewarding nature of the work. Medical and nursing students outlined the prevalence of this patient population, however, these more general statements were more characteristic of medical students. This may however be an

artefact of the different questions posed or the nature of the individual career pathways.

4.5.4 Strengths and limitations

A strength of this study is its novelty. First, it addresses a gap in the literature in that it is exploring factors associated with preferences of working with people with dementia in both medical and nursing students. It is the first study to quantitatively explore the relationship of preferences with attitudes to dementia and a dementia educational intervention. Second, it adds to the literature on career preferences towards older adults and dementia of students within the UK, which is sparse. Furthermore, it includes a relatively large sample of data that was collected longitudinally allowing changes in relative preference for working with people with dementia to be assessed (for nursing students).

There are four limitations of note. First, there were inherent limitations in the measurements used. There was a lack of suitable preference outcome measures to choose from for this study and those that were chosen were chosen at the conception of the TFD evaluation, before the start of this doctoral study and its systematic review.

For nurses, preferences were measured by a modified career ranking scale. This has been the most frequently used measure of intention to work with older people (Che et al., 2017). However, its psychometric properties are not established. This was selected as no alternative was found at the time of study design, but future work should look at developing suitable measures. One disadvantage of this measure was its suitability for mental health nurses. They have a clear preferred first choice, as 'psychiatric nursing' could be seen as encompassing their whole branch of nursing. This means that their first choices were less variable as they only picked from those that were relevant to them. However, there was variability in rank choice of dementia and older adults that was explored with associations of factors.

For medical students, a Likert response item was designed for this study that was not validated. The student responses to this open question led to uncertainty in participants' interpretation of the question and therefore underlying construct (discussed on p.154). Also, without being able to see these same ratings relative to

other patient populations, it is not definitive whether this interest in students for working with people with dementia is high when compared to other patient groups.

For both measures, there was uncertainty in whether these preferences for working with people with dementia are in the context of recognised specialties or clinical interests. The ranking measure for student nurses listed clinical settings and patient populations that could be both viewed as recognised specialties but also clinical interests. Medical students' specialty choices are more concrete (as they have registered specialties) but again, the dementia preference question was unclear whether students were relating this to a chosen specialty or overall as a general interest. While both types of preferences are of value and therefore informative to this framework, SS3 will explore the definition of preferences working with people with dementia in the context of recognised specialties and clinical interests to understand the distinction more clearly. Additionally, a limitation of both measures was that they were developed outside of the UK. While on balance they were selected because they were felt to be appropriate in the UK as career choices are generally equivalent and would be recognised by students, student responses may have been different if alternative wording, more tailored to the UK, were used.

Second, there were missing data from participants. This includes a low response rate at follow up points. Therefore response bias may have been introduced through systematic differences in non-responders. Despite this, there was sufficient data for regression analysis and logistic regression, and statistical power was preserved by decisions to include all data, rather than matched sample only. For the content analysis, the sample of students who completed the open questions is limited to the final data collection point for each cohort and was not possible for all cohorts as it was a later addition to the study.

Third, this study presents the preferred career choices and relative preferences as indicated by students' rankings or ratings. In terms of specialty choice, this is represented by the chosen first ranks of nursing students and stated preferred registered specialties for medical students. These preferences may reflect ideal choice (i.e. without considering practical restraints) rather than intended or achieved (Goldacre et al., 2010). This picture is made more complicated by competition, particularly for medical students; more students may apply for specialty training than

available posts. However, it is reasonable to suggest students stated preferences will be reflected in choices and research has shown student career choices are predictive of destinations (Dunkle and Hyde, 1995, Goldacre et al., 2010). Furthermore, this study explored factors associated with the relative ranking of dementia (nurses) and stated preference for dementia generally (medical students), not their first choice only, as the objective was to understand preferences for working with people with dementia as a patient group more generally, not just as related to specialty choice. Again, however, we are not able to conclude how these preferences will affect behaviour in practice.

Fourth, the generalisability of findings is limited due to the inclusion of only four HEIs. What is more, a large proportion of participants took part in the TFD programme. The advantage of drawing data from the TFD evaluation is the ability to look at the influence of a targeted educational programme such as TFD. HEIs vary in the amount and type of dementia curriculum content and this study allows comparison of universities with such differences. However, the findings need to be understood in relation to this. There was evidence of differences found between those who did or did not participate in TFD, these differences were accounted for in the analysis of factors but should also be considered when looking at the overall findings. For example, while the average preference for working with people with dementia was high, it was higher for the TFD group, therefore the average found in this study may be higher than the general student population, which has not taken part in an intensive educational programme. Additionally, for the content analysis, the majority of open text responders had taken part in the TFD program, and therefore their experiences will have shaped their perspectives of working with dementia. However, the reasons given are informative regardless of their possible underlying mechanisms.

4.6 Conclusions

The objective of this study was to assess career preferences of undergraduate nursing and medical students, in relation to changes over time for working with people with dementia, and to identify the factors related to these preferences.

Nursing students were found to have low preferences for working with people with dementia as a career and there was evidence for a decrease in preferences over

their training. Medical students were found to have low preferences for specialties related to dementia but high preferences working with people with dementia in general.

In relation to factors related to relative improvement in preferences, both had tentative support for a link with TFD. For nurses, there was also evidence for a relationship with the branch of nursing, attitudes, knowledge and previous experience of dementia (in year one only). Attitudes, as measured by the MCRS, was the strongest predictor of preferences after accounting for all variables. For medical students, only the relationship between dementia preferences and demographics were explored and a relationship with gender was found.

Factors in students' accounts were the level of confidence they felt in working with people with dementia, the impact of experiences (personal and educational), the challenges of the work and the rewarding nature of the work was outlined as a positive.

A number of areas for further exploration in SS3, presented in the next chapter, were indicated. Firstly a focused investigation of how preferences are influenced by confidence or preparedness, aspects of the work (positive and negative) and experiences. A key experience to examine is the participation in TFD, with a potential link suggested. Further exploration of changes during education is also indicated. Finally, the definition of preferences for working with people with dementia and its dimensions needs to be clarified.

5 Chapter 5 Sub-study 3: Factors influencing undergraduate and newly qualified healthcare professionals' preference towards working with patients with dementia: a qualitative study.

This chapter presents SS3, a qualitative investigation of the factors influencing undergraduate and newly qualified healthcare professionals' preference towards working with patients with dementia.

5.1 Background

5.1.1 Building on previous findings

As noted before there are important gaps in the evidence base on the preferences of healthcare students in relation to working with people with dementia; as outlined in chapter 1 and SS1. SS1 synthesised the literature of factors associated with healthcare students' preferences for working with people with dementia, and older adults indicating factors that may be relevant to dementia. SS2 identified factors related to students' preferences in a UK longitudinal study. This sub-study, SS3, explored career preferences and associated factors in newly qualified healthcare professionals. This was a qualitative study and it sought to understand participant perspectives as students and in the context of the career decisions they had made since graduating. This allowed further exploration of potential factors as well as explaining how these factors may have influenced preferences, therefore allowing a more nuanced understanding.

The goal of this qualitative study was to build on previous findings while remaining broad and open to understanding aspects of preferences not previously studied; a semi-structured topic guide was used to give freedom for participants to discuss the issues most pertinent to them. Therefore the learning from SS1 and SS2 that was considered for the direction of this qualitative work is outlined here for transparency. This refers to 'building' in the wider mixed-methods methodology (outlined in chapter 2). Five key points of importance are noted, these are summarised in Table 28 and explained in more detail below.

Table 28: Key findings from SS1 & SS2 to inform SS3

Findings (SS1 and SS2)	Description	Influence
Influence of educational interventions	Evidence that educational interventions may positively influence preferences	Explore participants perceptions of the influence of TFD
Changes of career preferences	Evidence that preferences for working with older people and people with dementia may decrease during training	Explore preference change in participants
Association with demographics	Indication of association for female students and mental health nurses	Consider demographics in sampling to ensure a diverse sample
Perceptions of students on working with people with dementia	Perceptions include interest and confidence in working with people with dementia, the challenging aspects of work. Limited positive factors have previously been identified but include the rewarding nature of the work.	Explore these perceptions and the positive factors in preferences with those with higher preferences.
The ambiguity of the construct 'preferences for working with dementia'	Previous work lacks clarity of construct	Explore students own definitions of what a career working with people with dementia means to them

First, in SS1, there was an indication that educational interventions could influence preferences positively in dementia-related fields, with educational interventions and clinical experiences being key factors for preferences for working with older people. Alternatively, some researchers have suggested exposure to people with dementia in poor clinical training settings can be a deterrent (Che et al., 2018, Swanlund and Kujath, 2012). In SS2 there was tentative evidence for TFD being associated with preferences in both medical and nursing students. In this study, it was important to explore students' perspectives of educational experiences on their career preferences. This includes students' reflections on TFD in relation to their preferences.

Second, some literature suggests that health education may have a negative influence on preferences for working with older people (Hebditch et al., 2020), with longitudinal research demonstrating a decrease in interest during training (Diachun,

Dumbrell, Byrne, & Esbaugh, 2006; Ganz & Kahana, 2006; Kloster, Høie, & Skår, 2007; McCann, Clark, & Lu, 2010; Sainsbury, Wilkinson, & Smith, 1992). However, in the UK there is a lack of longitudinal studies which assess this. SS2 contributes to this literature and the results appear consistent with the finding for preferences of nurses or working with older adults. It also suggests this may be the case for dementia care: preferences were found significantly lower in first year adult nurses. Therefore, in S33, students' perceptions of how and why their preferences change were explored. The students interviewed had graduated and so discussed their preferences retrospectively in the context of undergraduate training as well as in the context of decisions they had made once qualified. Participants were sampled, from those who had taken part in SS2, purposively on known previous preferences and asked their current preferences allowing both objective changes in preferences to be noted and triangulated with students' own descriptions.

Third, demographic characteristics were found to be associated with preferences related to dementia and therefore were considered in selecting participants. For example, the results of SS2, suggest that the branch of nursing training (mental health vs adult nursing) was associated with preference. There was also evidence that gender (from SS1 and SS2) may be a factor and so was considered in sampling.

Fourth, SS1 identified students' perceptions of the work, patients, and careers that may influence preferences, however, the research predominately was on preferences in relation to older people. Directly in relation to working with people with dementia, SS2 found that students' explanations (content analysis of open responses) centred on interest and confidence in working with people with dementia, the challenging aspects of work, and, as a positive, and the rewarding nature of the work. This sub-study explores these themes in more depth, for example, the aspects of the work (positive and negative) that influence preferences, and the role of experience and skillsets. Given the gap in the literature, this study also explores positive aspects, that is, the factors associated with stronger preferences. This was facilitated by sampling participants who had indicated a strong preference.

Fifth, a limitation in previous research (including SS2) is the ambiguity of the construct, and therefore measurement, of preference. There is a difference between

preferences towards recognised specialties related to dementia and preferences for working with dementia in all settings (specialty interest), encompassing how they feel about, attitudes towards and engagement with working with people with dementia. Exploring these concepts with participants can help to refine these distinctions more clearly.

In conclusion, there is limited robust evidence to suggest what is most pertinent to preferences for working with people with dementia and how to contextualise it. While SS1 and SS2 contributed to our understanding, this qualitative sub-study allowed further exploration of potential factors as well as how these factors may influence preferences, therefore allowing a deeper understanding of the relationship between factors.

5.1.2 Objective and research questions

The objective of this sub-study was to explore the factors that influence career preferences in relation to working with people with dementia. Specifically, to understand how these factors relate to medical and nursing students' preferences and how they influence decisions and perspectives on their careers.

There were four research questions:

Q1. How do newly qualified healthcare students view a career working with people with dementia?

Q2. What factors were influential in how they feel about working with people with dementia?

Q3. What impact has TFD had on their preferences towards working with people with dementia?

Q4. How have their career preferences for working with people with dementia changed during training or post-qualifying?

5.1.3 Methodological considerations

Why qualitative methodology?

Career preference related to dementia is a complex construct. The areas that healthcare professionals work in are as diverse as the possible factors relating to these held preferences. There are no frameworks with which to understand these preferences. Qualitative data, here in the form of in-depth interviews, allows exploration of the construct, within the views of the newly qualified healthcare professionals, hence a bottom-up approach to data generation. It also allows exploration of 'why' and 'how' questions (Hennink et al., 2010), such as how factors (e.g. previous experience) may influence preferences for working with people with dementia. Therefore, this qualitative study brought a different type of knowledge, which combined with the other studies enabled the generation of a more comprehensive conceptual framework.

What is grounded theory?

Grounded theory was introduced in chapter 2 (section 2.2), here the key features of grounded theory are presented in more detail. While there are iterations of grounded theory, there are six key features that are visible in each type of grounded theory, encompassing a 'family of methods' (Guetterman et al., 2017). These common features include: constant comparison, simultaneous data collection and analysis, theoretical sampling, memo writing, and theoretical saturation, and centre around the process of coding data. However with these key concepts variations in terms and subtly in definitions exist. The key features of grounded theory based on Charmaz (2006) are described below:

Coding. The first stage is referred to as *initial coding*; the first phase involves initial line-by-line coding. Coding is the act of giving segments of text a meaningful label. This label or code summarises and interprets the segment of text. Codes then allow researchers to explore meanings through large amounts of data and build an analytical picture. At this first stage codes are provisional and should be given quickly, without extensive thought and remain close to the text, using the language of the participant where it is expressive (i.e. 'in vivo' codes). Codes should describe in terms of actions where relevant. They should not simply be descriptive or use general terms. Codes should be inductive; that is, not based on an existing

framework. *Focused coding* brings together key codes into a more encompassing analytic code for a larger section of text. It is with having clear codes in open coding that ensures that these interpretive codes are grounded in the text. *The final stage* entails selecting central categories (arising from focused codes) that relate to the main question of study and identifying core categories and moving them to a more theoretical level creating conceptual categories.

Constant comparison. At each stage of analysis, comparisons are made between data with data, data with codes, codes with codes, and codes with conceptual categories. This includes reviewing previous data in light of new data. In making comparisons researchers can evaluate the fit of codes and identify differences, therefore helping to refine ideas.

Memo writing. Writing memos is the active process of recording and engaging with ideas on codes and conceptual categories. They record researchers' ideas about relationships between codes, possible theories, document transitions in thinking and are ultimately used to define codes and the core categories.

Theoretical sampling. The collection of further data to refine or understand a category further, or disprove a category. This may be in the form of selecting particular participants or adding additional questions to interviews. Theoretical sampling should be considered after focused coding, to reduce the possibility of going off on tangents not derived from data (Charmaz, 2006).

Theoretical saturation. The point at which the explanation of main categories is rich and the researcher is satisfied that there are no areas of uncertainty to explore further.

Simultaneous data collection and analysis. Data collection and analysis are not distinct stages; the ongoing analysis informs future data collection and direction of future analysis. The advantage being the analysis evolves and offers the opportunity to respond to key themes or unanticipated deviations that arise, for example through theoretical sampling.

While these are the key features of grounded theory as described above, there are points of difference. These similarities and differences are not clear, and are a research field in themselves (Boychuk Duchscher and Morgan, 2004). Here a simplified overview is presented. The four main distinct types that have been developed from the original approach (Glaser and Strauss, 1967) are: emergent (Glaser, 1992), systematic (Strauss and Corbin, 1998), constructivist (Charmaz, 2006), and postmodernist (Clarke, 2003). Table 29 outlines the unique features of each type.

Table 29: Four main approaches to grounded theory (summarised from (Guetterman et al., 2017, Creswell, 2013, Boychuk Duchscher and Morgan, 2004, Charmaz, 2006).

Approach	Philosophical approaches	Key distinctive methods
Emergent (Glaser, 1992)	Positivism	<p>Coding families: an example set of code types to assist in developing properties of codes in advance stages of coding.</p> <p>Emergent theory: a theory is ‘discovered’ from the analysis. It is directly created from the data.</p>
Systematic (Strauss and Corbin, 1998)	Post positivism.	<p>Structured systematic procedures: structured technique for constant comparison and theoretical comparison. Can be considered a deductive element.</p> <p>Axial coding: a structured technique in theoretical comparisons; in which a set of questions are applied to the data.</p>
Constructivist (Charmaz, 2006)	Pragmatism/ constructivist/ interpretive	<p>Interpretive theory: theory is recognised as being constructed by the researcher and the data (rather than being objectively ‘discovered’).</p> <p>Flexible methods: advocates against the use of a prescribed technique; the approach is seen as fully inductive and researcher should be responsive.</p>
Postmodern/situational (Clarke, 2003)	Constructivism/ Postmodern perspectives	<p>Situational analysis: social situations form the unit of analysis; ‘maps’ are given as an analysis tool to understand the complexity of these process.</p>

Rationale for the use of grounded theory in SS3

Grounded theory was chosen for this study principally by its fit with the objective rather than any disadvantage of other qualitative methods, such as case study or Phenomenology (Creswell, 2013). Grounded theory was chosen for this qualitative work for three reasons. First, because a clear aim of this study was to develop a conceptual framework. That is, it seeks to understand preferences for working with people with dementia, the factors that influence and possible underlying processes. The development of theory and frameworks is central to the aims of grounded theory. Second, it is a rigorous approach to systematic qualitative analysis (Guetterman et al., 2017), and therefore it brings rigour to the methods. Third, it is also an inductive approach and is suitable for mixed methods with emerging directions and integration of different sources of data as outlined in chapter 2 section 2.3.

The approach drawn on to guide this thesis is Charmaz's constructivist approach (2006). This approach emphasises flexible techniques and does not aim to produce a formal classical theory with only one core category. The process is compatible with this study for two main reasons. First, it suits a mixed methods study, where a flexible approach is needed. Second, when exploring complex phenomena such as preferences, trying to identify one core category and using structured theory dimensions may restrict the interpretation of data rather than aid explanation. The specific methods used for this study are outlined in the analysis section (p.173). Two central issues are outlined below and how they relate to this approach, these are interpretative theory and the role of the literature review.

Grounded theory is an inductive approach meaning that theory is drawn from data (i.e. a bottom-up process). Charmaz (2006) describes theory being derived as an interpretive theory; this acknowledges meanings are influenced by participants and researchers (i.e. constructed). In contrast, the stance of positivist and classical versions of grounded theory is that through structured analysis an objective theory can be 'discovered'. Charmaz (2006) states that the researcher's outlook will shape the resulting theory, therefore, it should be addressed. The doctoral researcher's stance is that grounded theory is a systematic way of analysing qualitative data, to provide an understanding of the career preferences which is made more comprehensive by acknowledging the influence of researchers and addressing it by

reflexivity. Reflexivity is the conscious understanding that the researcher and extraneous circumstances unique to the project may influence all stages of the qualitative process, and the process by which researchers remain aware (Hennink et al., 2010). This gives more validity to the findings, and pragmatically, more real-world value.

One divisive issue in grounded theory is the stage and purpose of the literature review. Charmaz's approach is more practical and realistic with the literature review, acknowledging that researchers come with existing knowledge, through previous reading or experience, and that one cannot 'unlearn' what is already known but emphasises that researchers should let data lead over previous research and be reflexive in how they are bringing ideas to analysis and the impact which this might have on the analysis (Ramalho et al., 2015). In this thesis, a mixed method approach is used, the first phase consisting of the systematic review and analysis of the survey data. These studies laid the foundation for this study; it sensitised the researcher to the topic and allows previous results to be built on. These connections are made explicit (outlined in the background section 5.1.1). However, the researcher remained open to new ideas throughout the process and approaches to reflexivity are outlined (see section 5.2.8). A decision was made that during the main phase of analysis in SS3 the doctoral researcher would not engage in reviewing new literature during this phase to allow the researcher to remain focused on data and emergent themes. At the point of integration new literature was sought as well as revisiting previous literature and findings.

5.2 Methods

5.2.1 Study design

Individual semi-structured interviews were conducted with doctors and nurses at different time points over two years post-qualification. Measures of career preferences were also completed at the time of interview.

5.2.2 Ethics

This project is nested within the TFD study, which has NHS Health Research Authorities approval. A substantial amendment was submitted and approved to include the recruitment of newly qualified healthcare professionals (Appendix M).

5.2.3 Participants

A subsample of participants taking part in the TFD evaluation, including comparison group students, were invited to take part in interviews. A total number of 374 students had previously agreed to be approached for follow up. A sample size of 40 was planned based on the rationale that between 20-30 is seen appropriate for grounded theory (Charmaz, 2006, Creswell, 2013) but was ultimately dependent on theoretical saturation (the point where no new themes are generated from the data). Interviews were completed with 27 participants.

To gain a variety of viewpoints participant sampling was purposeful based on key points of difference: cohort, and therefore participation in TFD, and healthcare course. Students were also purposively sampled depending on preferences. Students last known previous recorded inclination of preference (low, high and neutral preference for working with people with dementia) was used to ensure a balance of participants' preferences were included. However it was recognised that student preferences may have changed by the time of the interview. Also, the need to consider nursing branch (adult vs mental health) and gender was identified in SS2. This purposeful sampling was used to obtain possibly divergent views not to form a representative sample, in line with qualitative underpinnings (Charmaz, 2006).

Theoretical sampling was also used; participants were later sampled by characteristics that needed to be explored further based on emerging themes from the analysis.

5.2.4 Procedure

Potential participants were contacted and invited to take part in an individual interview over the telephone at a convenient time of their choice. Participants were contacted via email in the first instance, where possible, then by telephone. Before the interview, an information sheet (Appendix N) was sent and written consent sought (Appendix O) alongside the completion of career preference questions. All recruitment and interviews were conducted by the doctoral researcher (MH).

Interviews were conducted between April 2019 and March 2020. A preliminary schedule of interviews was created, considered pragmatically to ensure data could be both collected and analysed iteratively, to allow greater reflexivity and opportunities for theoretical sampling. However, this was ultimately directed by the ongoing analysis.

5.2.5 Data collection

Interviews were conducted over the telephone and an electronic version of the preferences questions (with consent) was sent and completed before the interview. Interviews were estimated to take approximately 30 minutes; therefore, a one-hour meeting was scheduled to allow for discussion and consent process.

Career preference questions were the same as collected in SS2 and included:

- i. Nurses: The adapted a ranking exercise of career preferences (Stevens, 2011) (Appendix F). The open text questions were omitted due to the in-depth interviews.
- ii. Medical students: Specialty preferences were recorded in the Jefferson Scale of Empathy (JSE, Hojat et al., 2001) (Appendix G) and the dementia preference question (Appendix H). Again, open text questions were omitted.

An Initial interview topic guide was developed in consultation with JW & SD (Appendix P). Topic guides were reviewed and amended at several key stages during the analysis.

5.2.6 Data Management

All participant data, including recruitment logs, audio files and transcripts, were password-protected, saved to an encrypted laptop and backed up on a secure drive.

Recruitment logs were set up to record ongoing recruitment. Participants were anonymised using a link log that corresponds with the existing TFD link log and recruitment log to track participants continuing to part in the evaluation of TFD as part of this project. The consent form and preference questionnaire data were

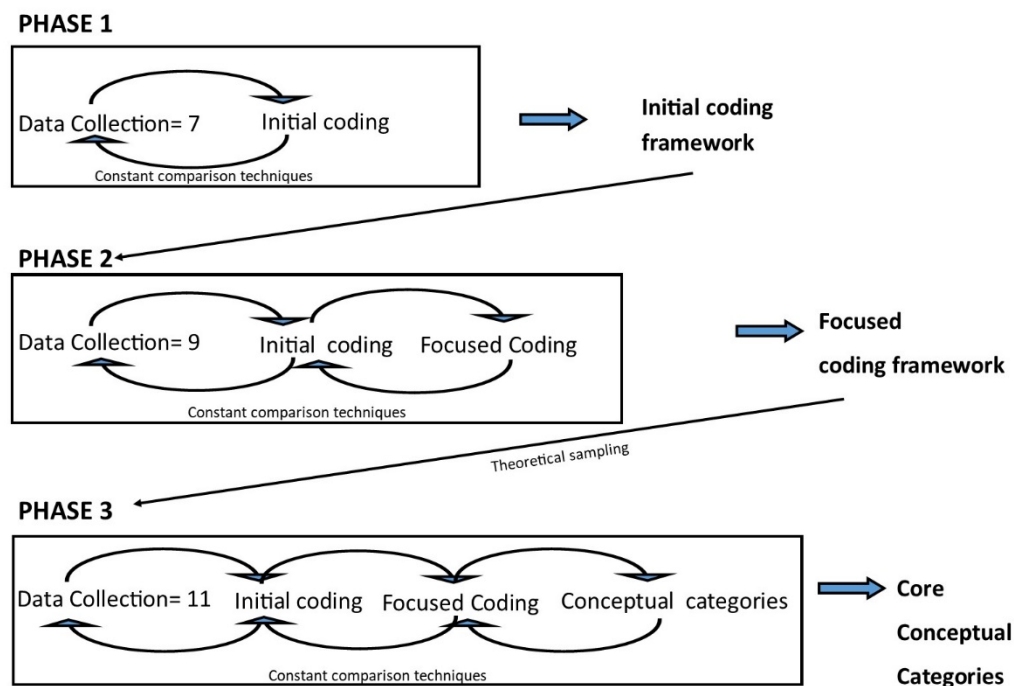
collected using the Qualtrics survey platform (Qualtrics, 2019). Once downloaded, this was deleted and participants consent was stored separately from data, to anonymise participant data.

Interviews were audio recorded on an encrypted digital dictaphone. These files were downloaded within 24hrs and deleted from the dictaphone. Audio files were sent securely to a transcription service. Interviews were transcribed verbatim by the transcription service and checked for accuracy by the doctoral researcher. Identifying information was removed, including names and places.

5.2.7 Analysis

Participants were recruited and interviews transcribed in a continuous manner parallel to analysis. Therefore recruitment and analysis was an iterative and cyclical process but for clarity of explanation three key phases are identified and explained: phase 1 consisting of initial coding, phase 2 focused coding, and phase 3 theoretical integration moving to a conceptual framework. An illustration of the analysis is presented below in Figure 8, followed by a description of each phase.

Figure 8: Illustration of analysis



Phase 1

Three transcripts were manually coded line by line independently by two researchers (MH& SD). Initial codes were subsequently discussed to reflect on researchers interpretations (to improve self-awareness) and the best fit of codes was agreed. From this point, the qualitative software program NVivo 12 was used to aid analysis. MH then coded four more transcripts and met with SD to discuss and agree on an initial coding framework (Appendix R). The initial coding framework included a large number (n=313) of inductive, descriptive codes remaining close to the text that were grouped based on the topic. Interview topic guides were amended at this point (Appendix P). Constant comparison at this stage included comparing data with codes and codes between codes, to understand differences and similarities. This included moving between new and previous transcripts. Memos at this stage were used to record developments and adjustments of codes and emerging key themes that would be important in focused coding (see example memos in Appendix Q). Significant themes or ambiguities were identified and documented.

Phase 2

Initial coding continued on the next round of transcripts (n=9) but moved to focused coding. Practically this meant a large number of open codes were aggregated into a smaller number of preliminary focused codes. The output of this phase was a focused coding framework, reached with the agreement of SD in supervision. Ten key themes were identified and documented (Appendix S).

Throughout this phase constant comparison was used, between data and data, data and codes, and participants and participants, including between doctors and nurses. Dimensions of focused codes were explored and resulted in sub-categories. Memos were important at this stage to record and trace the development of initial codes to focused codes and write possible definitions for how they may represent conceptual categories, and document links to theory. Conceptual categories develop from focused codes and are on a higher abstract level. An example memo for this phase can be seen in Appendix Q.

Supervision during this phase was used to discuss the ongoing analysis, in particular: to agree on the fit of focused codes, to discuss possible conceptual categories, and consider appropriate theoretical sampling.

At the end of this phase theoretical sampling was considered to gather new data to understand categories and their components. This included purposefully sampling participants who had stated a preference to pursue a specialty related to working with dementia in medical students. Questions were also added to, and dropped from, the topic guide to focus on key areas to be explored.

Phase 3

The main aim of phase 3 was the development and refinement of conceptual categories. Relationships between focused codes, and focused codes to higher conceptual categories were explored. Memos were used at this stage to define these conceptual categories and relationships. Attention was directed to selecting categories that relate to the central question of study and identifying these core categories. Theoretical sampling was continued and researchers remained sensitive to theoretical saturation; exploring areas where components of categories were unclear until they were fully formed. The process of diagramming was used to

explore the relationships between categories and to build a conceptual picture (Appendix T). The end stage of the analysis involved moving categories and relationships to theory level, with memos providing full rich descriptions of each category. Charmaz (2006) advocates an emergent rather than a procedural application of coding in contrast to formal axial coding or preconceived theoretical coding (codes about theory and relationships between conceptual categories). In this study, prescribed codes were not used but natural dimensions arose. For example, when looking at accounts of change in preferences three dimensions appeared and were explored: when the change occurred, how it changed, and the cause of change.

The outcome of this stage was a set of core conceptual categories that together give an account of what preferences were held and how they were formed i.e. the factors influencing preferences.

An overview of the developments and key considerations in each phase can be seen in Table 30. This includes the key themes in the analysis which were areas of importance for this phase or that arose out of the analysis. In relation to these key themes are actions, such as a particular focus on analysis, refinements to topic guides or seeking new data in the form of theoretical sampling.

Table 30: Summary of Analysis

Phase	Key themes in analysis	Actions
Phase 1 N=7	<ul style="list-style-type: none"> • Clarification of preferences relating to working with people with dementia; how participants define it. • Understanding relative significance of factors in career preferences (generally). • Students giving examples of previous experiences; how do these relate to views on working with people with dementia? • Students articulating changes in preferences; explore further. 	<p>Refinement of guides:</p> <ul style="list-style-type: none"> • Change preference questions based on definitions from students • <i>Most</i> important factors in preferences? • Explicit question about impact of other experiences • Prompt questions based on recorded changes in preferences <p>Focus points in analysis :</p> <ul style="list-style-type: none"> • Preserving context of preferences • Accounts of change
Phase 2 N=9	<ul style="list-style-type: none"> • Students' views on working with people with dementia; emotional position. Students disclose personal, often emotion driven accounts (vs routine descriptions of practice). • Participants appear to describe a difference between their perceived roles or 'Type' of medicine or nursing when working with people with dementia. • 'Rewards of impacting patients'- appears a central code • What are the relationships between factors contributing to preferences? Is there a hierarchy? What is most important? • Is there a difference between the core factors relating to specialty choices related to dementia and the factors relating to general preferences in dementia? 	<p>Focus points in analysis:</p> <ul style="list-style-type: none"> • Emotional standpoints need to capture in coding. Also during interviews use prompts to get personal accounts: ask for examples/ how make feel • Review codes for accounts of roles and how these relate to factors • Explore preferences related to related specialties in more depth • Explore what are components of rewards of impacting patients. <p>Theoretical sampling (for next phase):</p> <ul style="list-style-type: none"> • Identify medical students who stated a preference for dementia related specialties (e.g. geriatrics, OAP) or will be doing rotations (under open text). • Questions revised on topic guide. To include a more defined focus on preferences (generally and specifically) and to explore relationship between factors.

Phase 3 N=11 [Including N=3 theoretical sampling of medical specialties]	<ul style="list-style-type: none"> • Differences between specialties factors- and related factors: similarities/differences • How does of role/type of care code relate to factors? • What are the relationships and hierarchies of the factors? • What do accounts of changes of preferences tell us about the factors behind these changes? 	Theoretical sampling <ul style="list-style-type: none"> • Prompt further to define key points: Define components of rewarding/fulfilling. Prompt or exploration of role/type, where appropriate. Focus points in analysis: <ul style="list-style-type: none"> • Explore theorised differences (compare) codes related to preferences (high/low), types of students (medical/nursing)? And context of factors (specialty choices/preferences in general) what is difference between? Using attributes. • Explore and record relationships and hierarchies between factors- using mapping and relationship NVivo features. • Reviewed dimensions of accounts of change: when, why, how preferences change?
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5.2.8 Rigour in the research process

To ensure rigour in the analysis and its methods was achieved, the following procedures were implemented. First, detailed and emergent notes were recorded, ensuring an audit trail of decisions and directions in the analysis. This included: a fieldwork diary to document first impressions of interviews; a work log on NVivo 12 (QSR International, 2018) to record developments in analysis; use of memos for emerging codes and categories; and documenting agreement between researchers on coding frameworks. Second, reflexivity (self-awareness) was strengthened by recording reflections, supervision from a qualitative expert (SD) throughout, as well as valuing peer discussion in conferences and research networks. Third, rigour was achieved through adherence to systematic methods of grounded theory. This was helped by the use of NVivo 12 features that allows: structured and thorough records; use of participant attributes; mapping diagrams for relationships; and coding under relationships. The doctoral researcher also made constant reference to guidance to question the quality of the emerging theory, such as Charmaz's criteria of credibility, originality, resonance, and usefulness (Charmaz, 2006). This includes consideration of whether the theory is credible due to the quality of data used, whether the evidence presented fits with the argument, and whether the findings provide novel

insights and have significance to demonstrate originality. This helps to form the basis of the theory's resonance, including whether it appears valid to others, and its usefulness in contributing to knowledge and cultivating future research.

5.3 Results

5.3.1 Participant characteristics

27 interviews were conducted with an average mean duration of 35 minutes. Table 31 shows the characteristics of the participants.

Table 31: Participant Characteristics

		Median/n	Range/%
Age at Interview		26	(23-53)
Gender	Female	18	67
	Male	9	33
Student Type	Adult nurse	9	33
	Doctor	17	63
	MH nurse	1	4
Experience before training	No	8	35
	Yes	15	65
Ethnicity	Missing	2	7
	Other ethnic group	6	22
	White British	19	70
Year Post Graduation	Year 1	16	59
	Year 2	11	41
TFD Participation	No	13	48
	Yes	14	52
University	BSMS	14	52
	UEA	3	11
	UoB	3	11
	UoS	7	26

The participants' preferences as expressed in the interviews are summarised below. This is presented for understanding and interpreting the generalisability of the sample and was not categorised for the purpose of analysis. The categorisations were defined to be broad enough to be classified and to keep participants anonymous. The finer nuances of preferences were explored in the analysis. Table 32 shows participants preferred career choices.

Table 32: Career choice at interview

Career Choice	n
Nurses	
Community mental health (CAMHS)	1
Community nursing	2
District nursing (older people)	1
Medical (stroke and neuro)	1
Medical (wards)	1
Medical (oncology nursing)	1
Medical (Vascular access)	1
Older people nursing (Originally maternity)	1
Theatre nursing	1
Doctors	
Undecided	1
General Surgery	1
Geriatrics	1
GP	4
GP (Or geriatrics)	1
GP/Psychiatry(not OAP)	1
Palliative care	2
Paediatrics	1
Psychiatry (not OAP)	1
Psychiatry (CAMHS, not OAP)	1
Psychiatry (OAP)	1
Medicine (Infectious diseases)	2

CAMHS= Child and Adolescent Mental Health Services.

OAP= old age psychiatry

Table 33 shows the participants preferences towards dementia in general and preferences for specialties related to dementia.

Table 33: Preferences for working with people with dementia at interview

		n	%
Preference for dementia in general (i.e. clinical interest)	High	12	45
	Low	6	22
	Neutral	9	33
Preference for dementia (Quantitative measure)	High	18	67
	Low	2	7
	Neutral	7	26
Preference for dementia related specialty (i.e. recognised specialty)	No	22	81
	Undecided	1	4
	Yes (Geriatrics, OAP, Older peoples nursing)	4	15

Preferences for dementia in general were defined as a student's general preference for working with people with dementia (across specialties) expressed in the interview: classed as low, neutral or high. These categorisations were checked for agreement with second reviewer (SD). Preferences for dementia-related specialty were coded as career choices that were related to dementia, in this sample, this included geriatrics, old age psychiatry (OAP) and nursing of older people. Preference for dementia measured quantitatively were defined based in the categorisations described in SS2.

5.3.2 Overview of key findings

The key categories derived from the analysis are shown in Table 34. There were eight main categories. There were two categories about the nature of preferences (towards dementia and overall preferences) and six inter-connected factors associated with preferences for people with dementia; an overall core category was not developed due to the multi-dimensional conceptualisation of preferences.

Table 34 Main categories

Category type	Category	Subcategories
Nature of preferences	Nature of preferences for working with people with dementia	<ul style="list-style-type: none"> • Definition of a career working with people with dementia • Individual preferences towards a career working with people with dementia
	Nature of overall preferences	<ul style="list-style-type: none"> • Overall individual preferences • Factors related to overall preferences
Factors related to dementia preferences	Making a difference	<ul style="list-style-type: none"> • Rewards of making a difference • Reduced satisfaction in lack of impact
	Alignment with personal characteristics	<ul style="list-style-type: none"> • Competency or confidence • Impact of experience • Personal attributes
	A different type of care	<ul style="list-style-type: none"> • Appreciating 'a different type of care' • Preference for medical or acute care • Ambiguity or uncertainty
	Perceptions of people with dementia	<ul style="list-style-type: none"> • Care challenges • Additional difficulty • Positive interactions with people with dementia • Involvement of family
	Care environment	<ul style="list-style-type: none"> • Difficult care environment • Quality of care • Experiencing different settings
	Career characteristics	<ul style="list-style-type: none"> • Team environment • Challenges due to systems • Professional development • Variety

Each category and subcategory is now described in detail and illustrated with quotes. Quotes are prefixed with an anonymous code, with doctors starting with D and nurses with N, and contextual information is provided where relevant in brackets.

5.3.3 The nature of preferences

Participants' preferences were multi-faceted and complex. It was apparent that dementia-related preferences could not be viewed in isolation, as they were linked to wider career preferences. Therefore there were two subcategories: the *nature of preferences for working with people with dementia* and the *nature of overall preferences*. Together these categories provided an understanding of how the participants define their preferences and view a career working with people with dementia.

Category 1: Nature of preferences for working with people with dementia

There were two sub-categories related to the nature of preferences for working with people with dementia, first the *definition of a career working with people with dementia* and second, *individual preferences for a career working with people with dementia*.

Definition of a career working with people with dementia

Working with people with dementia was seen by participants as an inevitable part of their career, due to the prevalence of the condition. Participants consistently identified that most healthcare careers will have contact with people with dementia and require suitable skills for this. Both doctors and nurses, therefore recognised it is a likely part of their career. Reasons given for this included patients with comorbidities accessing various services but also the recognition of increasing need.

D7: *'I think it's pretty spread across all medical specialties, because just because you have dementia doesn't mean that you can't have any other host of comorbidities'*

N3: 'and I do think that with our ageing population there will be sort of a greater need for dementia care, and as a nurse I'm definitely going to be a part of that'

The majority of participants were able to identify healthcare careers they felt specialised in or worked with, large numbers of people with dementia. In nursing, this frequently centred on where participants perceived that there would be more people with dementia including wards with a higher proportion of older patients, community nursing, long-term care or intermediate care. Some also identified dementia specialist nurses. Many nurses used their current working environment to identify possible roles, with some expressing uncertainty about what specialist roles there might be.

N7: 'yeah, that's a really tricky question, because I wouldn't... unless you specifically wanted to work on that ward (elderly ward) I wouldn't necessarily know what else, you know, especially in the hospital, what you would... what area would necessarily be specific to dementia. Now you've said that, I don't really know'

Doctors were more consistent in identifying careers related to dementia due to relating them to regulated medical specialties: consistently identifying geriatrics, psychiatry (specifically old age psychiatry), and GP. Also, neurology and areas that frequently treat people with dementia such as A&E and orthopaedics were cited. However, there were variations in responses between participants and there was still some uncertainty expressed about which medical specialties were ultimately responsible for patients with dementia.

D17: 'So, geriatrics definitely. Probably Trauma and Orthopaedics, to a certain extent lots of fractures ... seeing people with dementia. Who else? Psychiatry, old age psychiatry, GPs, probably that initial diagnosis Then I guess in every specialty you're going to have some degree of people with dementia, but I would say they're probably the main ones'

When asked about specialist careers related to dementia some doctors and nurses voiced that training was needed for dementia in all areas (related to prevalence),

that specialised services for people with dementia needed to be improved, or identified gaps in specialised provision.

D8: *'Right. Well, I do think that there are certain ones that I think everyone should have training in dementia, the only people that don't necessarily need to are probably paediatricians, or people that work in like a children's kind of hospital like setting I suppose, that wouldn't be necessary. But I do think everyone in the hospital should, that goes right down to the porters'*

N8: *'But I haven't really seen that many (specialist dementia services), and I couldn't say there was a lot of support with people who have dementia or other mental health problems, unfortunately.'*

Individual preferences towards a career working with people with dementia

This related to the nature of individually held preferences towards working with people with dementia. Preferences were split between general preferences, defined here as a preference in working with people with dementia in the context of their career in general (i.e. clinical interest) and those towards specialties related to dementia (i.e. recognised specialties). These preferences were sometimes distinct and not always related, for example, some participants held a high preference for working with people with dementia generally, but not working in related specialisms. Additionally, preferences for dementia related specialties were not always linked, for example, a doctor might have a preference for geriatrics but not for old age psychiatry. It was apparent that individuals often have a different hierarchy of individual factors for preferences, and view working with people with dementia through these priorities.

In terms of general preferences for working with people with dementia, there was a range of preferences expressed, with some participants holding higher or lower preferences, specifying different levels of interest and enjoyment, with others being more neutral, expressing ambivalence or that they would actively not discriminate between patient groups.

(High preference) D6: *'In general I find it kind of be very rewarding, I find it interesting, and I like doing it as a part of medicine overall, I wouldn't want to*

specialise in it, and I wouldn't want all my patients or too high a proportion of them to suffer with dementia, but overall yeah, I feel fairly confident and well equipped to manage patients with dementia, and I enjoy doing it as part of my normal patient workload.'

(Low preference) D4: *INTERVEIWER: 'So, within your career, so obviously you intend doing GP training, would you say that you'd prefer or not prefer to work with patients with dementia?'*

PARTICIPANT: 'clearly it's difficult. I mean I'd say it's probably easier not to, because it's difficult, at my current stage as a junior,'

(Neutral preference) D1: *'I'm a bit ambivalent really. I'm not opposed to working with them, but I'm not, you know, I didn't really go out of my way to look after a patient with dementia, I just got on with the job.'*

(Neutral preference) N2: *'I'd probably just say that I... yeah, I wouldn't mind either way. Yeah, I have no problems working with people with dementia, at all.'*

Participants also expressed preferences for recognised specialties related to dementia, that is, preferences were directed to a specific job role (nursing) or registered specialty (doctors). Some of these were definitively positive or negative.

D8: *'Yeah, so like I say, ... I want to be a geriatrician,'*

N1: *'I would never have gone for a job on a medical ward, or orthopaedics, ... because, yes, it's a high level of dementia, that's not the reason I wouldn't go, I would just feel that I wouldn't be able to provide the care I could (in a different role) for the patients with dementia'*

Some participants had not previously considered dementia related specialties or felt they lacked the information to give an opinion on working in specialties related to dementia. Some commented on the positives of a specialty related to dementia but this did not relate to personal preference.

D5: *'I think it's a good... an interesting specialty, as I said before I like it for its more holistic approach towards patients compared to, like I say, with surgery you get no time to spend with the patient ...So, yeah, those are a couple of the things, that I've realised about geriatrics.*

INTERVIEWER: *And would you consider geriatrics as a specialty?*

PARTICIPANT: *As I say, not particularly'*

Contrasting views were found in participants for working in specialties related to dementia depending on the setting, while others expressed that any kind of specialist healthcare career would be unfavourable. Participant responses demonstrated that preferences for working with people with dementia were not fixed and participants described how their dementia preferences had changed. There were accounts of positive and negative changes, towards varying contexts (general and recognised specialties) and at different time points.

D6: *'I probably enjoy... I enjoy working with patients with dementia more now as a doctor definitely than I did as a student'*

N3: *'I don't know, I think maybe... I think when I started, probably yeah, because when I started... again, you know, I'd had very limited experience with people with dementia, and not necessarily all positive, so, you know, I suppose I was a bit more hesitant when it came to supporting, or caring for people with dementia, but yeah, now... well, certainly during my training, that's certainly changed'*

Many also recognised that they may change in future; this was particularly true for nurses.

N3: *'I like the variety of what I've got now and so that's probably why I wouldn't necessarily specialise in dementia care just yet. I mean, you know, I'm still young, things can change. So, yeah, but I would specialise at the moment, no.'*

Category 2: Nature of overall preferences

This category included two subcategories. First, *overall individual preferences* relating to preferences for their careers in general. Second, *factors related to overall preferences* were identified.

Overall individual preferences

Most participants were able to identify their most preferred career choice. The majority of those interviewed were fairly certain of their choice, especially those that had been qualified for longer. Some outlined that having a preference did not always mean that this became their choice or actual role when ultimately balanced with other considerations.

D2: INTERVIEWER: *'And why have you decided on general practice?'*

PARTICIPANT: *'Lifestyle reasons I think. It's a shorter training programme than the other pursuits, otherwise, I would have done dermatology, but I don't really want to train for eight years.'*

Doctors mainly defined their preferences in terms of training pathways or registered specialties while nurses defined them by their current job, with most saying that their first post was in their preferred area. While the majority described their career preferences in terms of these recognised specialties, many also identified an underlying preference, for example, an interest in mental health or choice of training pathway for doctors, or a type of work environment in nursing. However, both acknowledged that overall preferences (like dementia preferences) were not stable and had changed or could change. Nurses also recognised flexibility for the future, suggesting they may switch between different recognised specialties as preferences change in the future. Some doctors outlined the importance of making a decision based on allowing flexibility later on.

N7: *'I want to definitely go back (surgical ward), I'm not sure if I want to be there all my life, kind of thing, but working life I mean, but sometimes I want to go and do more 'nursing' nursing, you know, more different skills, but then it's a good thing there's for example nursing wise,so there are other options.'*

D3: 'I just like the idea of doing a very kind of broad medical training where I don't have to make a decision which specialty to do and then kind of make a decision later on about which specialty. So, I think it's just very kind of broad general like medical training which is probably what I need.'

Factors related to overall preferences

Participants described factors that influenced their career preference, they defined these factors in terms of general considerations from which to view their overall careers as well as specific positive or negatives related to recognised specialties or their choices. Many participants were able to identify the main factor of particular importance for them, and this varied between participants, but a combination of factors ultimately led to decision making.

D14: 'So, it's sort of looking... trying to recognise who you are and where you fit, and where (what clinical area) you're going to get a lot of out, and then what's the most useful as well for trying to promote a healthier world'

Key factors included:

- I. Practical factors: work-life balance, team environments, work conditions and specifically for doctors the characteristics of training pathways.
- II. Nature of patient contact: participants valued relationships with patients, continuity of care, and described what good patient contact would mean for them. Lack of patient contact was consistently cited as a reason for lower preferences (e.g. surgery/theatre nursing).
- III. Positive impact: desire to help make a difference, seeing positive change, at an individual or wider level.
- IV. Aligns with intrinsic values or interest: preferences based on specific underwriting interest (held before training) or fit with the type of approach to healthcare.
- V. Placements: level of enjoyment expressed as influencing factors and could solidify preferences (positively or negatively).
- VI. Professional development: viewing areas as having opportunities for career progression and personal skill development.

- VII. Skills and competency: preferences were cited as aligning (or not) with personal strengths and individual characteristics.
- VIII. Variety and autonomy: most participants valued variety and autonomy in practice.

These factors were mirrored in participants' rationales for dementia preferences but some factors appeared more important when discussing preferences related to dementia or differed in the way they were perceived or applied to preferences for dementia. This included the way they defined positive impact, patient interaction, and intrinsic views; specifically their approach to healthcare. These factors specific to working with people with dementia, the main focus of the analysis, are described below.

5.3.4 Factors related to dementia preferences

There were six main factors described by participants as positive attractions or negative influencers towards working with people with dementia. Throughout the analysis, these factors were reviewed to understand the conditions in which they were influencers and are contextualised within the participants' own definitions of careers related to dementia. While most factors apply to both doctors and nurses, points of differences were noted.

Category 3: Making a difference

This category pertains to how participants' preferences for working with people with dementia were related to their perception of being able to have a positive impact on and meet the needs of, these patients. While this was cited as an inherent goal in their overall preferences, and integral to the satisfaction of their job as a healthcare professional, there were unique elements related to dementia. Participants identified how they define 'impact' or 'needs' for patients with dementia and described their agency in being able to help to achieve this. This emerged as a key factor in preferences for working with people with dementia, both generally and for related specialties. A dichotomy was found with perceptions of making a difference and is illustrated as two subcategories; *rewards of making a difference* and *reduced satisfaction due to lack of impact*.

Rewards of making a difference

Participants described one of the best aspects of working with patients with dementia as being their ability to make a difference. The difference they perceived that they could make as a healthcare professional was frequently described in non-medical terms, with the limitation of medical interventions noted. Participants described patient needs as: extra social support, reducing distress or agitation, and helping family members, with outcomes identified as an increase in quality of life or reducing discomfort in hospital.

D2: 'I think you can actually make a big difference to their lives, so like despite the fact it's a chronic debilitating disease, if you actually get the correct social care in order for them, I know the medication, often the ones that I've used and prescribed and started them on is not... doesn't ultimately change their quality of life that much, but actually just the sort of social side of it.'

Several social or psychological interventions were described as important for example: identifying additional support and referrals to other healthcare professionals or services; effective communication; and providing comfort.

Their ability to make a difference was described as rewarding. Making a difference to patients' lives and deriving satisfaction from this was acknowledged as an inherent aim for healthcare professions, but those with a preference for working with people with dementia appeared to view working with people with dementia as more rewarding. This is because dementia was perceived as a severe disease that is hard to make an impact on, and therefore making an impact was viewed as more meaningful.

N3: 'because it is rewarding and when you make something better for them, because obviously what they're going through is so difficult and so hard and so horrible, when you do something that will make that even a little bit better is amazing, and yeah, that for me is the most rewarding thing I think.'

The rewarding nature of work was often described as the best aspect of working with people with dementia generally and for related specialties.

(Working with people with dementia in general) D15: *'I think, with these people who are sometimes in distress, or sometimes unable to communicate their best wishes, so if you can get them better and feeling better, then I do find that a bit more rewarding than if for somebody who perhaps who doesn't have dementia who's a bit more then able to communicate.'*

(Geriatrics) D13: *'I think it has actually gone up my list since starting it. I find actually working with patients with dementia quite rewarding, especially if you're sort of able to make them feel better and then they kind of – not to generalise, because obviously everyone is an individual – but it's kind of you get a much more immediate response from patients when they are made to feel better, when they have dementia and that's quite rewarding.'*

Participants also reported that it was rewarding to see their actions being recognised by patients, either directly through expressing gratitude, or indirect behaviour such as smiling.

N2: *'I think the best aspects are when you feel that you're doing the best that you can and then you also feel that they are appreciative of all of that as well, if that makes sense.'*

A unique aspect for doctors was that some gave accounts of how their preferences have increased due to increased recognition of the impact they can make. This was attributed to how they felt able to make a difference now as doctors, compared to how they had not been able to do this when they were students. One doctor also described how TFD influenced their preferences by helping to gain this appreciation:

D11: *'I guess it really highlighted to me how good medical... you know being a good medical practitioner can really make a difference to these families and the patients. So, yeah, I guess it did make me think "Oh yeah, actually this is much more interesting and you can make a difference".'*

Reduced satisfaction in lack of impact

In contrast, participants with lower preferences towards working with people with dementia linked this to their limited ability to make an impact (on patients) and/or to

meet their needs. Participants reported that this was often because of an external restriction such as time, lack of support from others, or it not being a core part of their role.

N1: 'I would not be able to make a difference, because I would be a Band 5 (nurse) in an environment where they (other nurses/ward staff) would understand where I'm coming from, but they haven't got the time to even have a chat about it. They just don't... and they would think "Oh, she's coming on board, she wants to change the world, little does she know..." and they would be right. So, as much as I would try and make a difference, I wouldn't be able to, and I wouldn't have the support'

However, for some of those interviewed, where the impact was only defined medically, the option to make a difference was seen as being limited.

N10: 'I think, for me, I struggled... I found it quite difficult because like they're never going to get better, it's kind of a... they've just got a degenerative... yeah, they're kind of slowly deteriorate and I think that's always quite difficult for me to, yeah, to work with or to see... yeah, no, you know, they're not ever going to be the same or not ever going to really get better'

Some acknowledge that the best part of working with patients with dementia is making a difference and this rewarding, however, they reflected that in practice this hard to achieve:

D10: I don't find it... I find it... like I was saying about how sometimes it can be rewarding, to get look and like a smile or whatever, that often isn't achievable in the time.

The resulting view of the work when participants feel unable to make a difference was a lack of satisfaction from the work. Specifically, it was associated with emotional conflict and a feeling of unease or frustration and was perceived to be 'difficult to reconcile'.

N1: *'And we were given the little "This is me" (Life History care booklet), most of the ones, you know, if they were able to complete, or their families would have the little forms and you'd have a little read and even that you never got time to really read about them, but you try, you try and get to know them. But then you think, "Right, okay, this is you, this is what you love. This is all the things that I cannot give you. I cannot," so, it was almost pointless.'*

D10: *'That's very hard when you constantly have to walk past that patient in distress and you just don't have time, there's already been so much time spent on him, and you've got all these other patients, you just don't have time. So, that's really quite difficult to come to terms with. And that happens all the time in hospital, you know, people with dementia get neglected from that point of view, because they're so complicated and they require lots and lots of time to... and lots of thought to go into it.'*

Also, participants described how they were unclear how to make an impact or had a lack of clarity of purpose (i.e. more ambiguous goals). One doctor accounts their preference for acute care rather than working in care of the elderly:

D3: *'I mean I think I just find it a bit more satisfying, I think it's probably easier to be honest. I think it's probably clearer, in my mind, anyway, like what you're trying to do, what you're trying to achieve, whereas I think when in elderly care, sometimes it can be a little bit more difficult to know, just kind of have those goals.'*

Reduced satisfaction due to lack of impact was a factor for preferences for working with people with dementia in general, particularly working in in hospital:

N1: *'so, you wanted to give them that care, and you wanted to really look after them, but they weren't, in my opinion, they weren't the priority in an acute care'*

In terms of specialties related to dementia, of significance was the frequent repetition of lack of impact as a factor in terms of old age psychiatry (rather than geriatrics) for doctors. This participant held a general preference for working with

people with dementia and an overall preference for psychiatry but was not favourable towards working in old age psychiatry:

D14 *'I think when it comes to Psychiatry, I was always more interested in Childhood Psychiatry, because it feels like there's more to gain, and I sort of saying that hesitantly because I don't think it's actually right view to have, but the logic is that you can obviously sort out someone's mental health earlier on in life then you've got more years of improvement. I also think, I don't know, working with kids and that it's just potentially more rewarding in different ways.'*

This participant held an overall preference for GP or geriatrics and held a general preference for working with people with dementia, their opinion on old age psychiatry was:

D15: *'Oh right. So, I think I would find that quite frustrating in that I'm not sure... it seems like quite a challenging specialty in terms of outcomes. I think what you're trying to achieve in old age psychiatry isn't always... there's not necessarily a very good outcome for patients all the time and I think I'd find that quite frustrating.'*

Category 4: Alignment with personal characteristics

Students described how their preferences are based on their characteristics, including inherent personalities or life experiences. There were three main subcategories: *competency or confidence*, *the impact of experiences*, and *personal attributes*.

Competency or confidence

There was a clear dichotomy in those who held higher or lower preferences in terms of their perceived competency or confidence in working with people with dementia.

(Low preference for working with people with dementia in general) N10: *'I don't know whether it's because maybe I just don't have much experience of*

it outside the professional life and so that's kind of like me and my own confidence and lack of awareness that puts me off a bit as well,'

(Career choice to work in elderly care after graduation) N9: *'I was working as a HCA (health care assistant) and a lot of time I felt more comfortable talking to older, rather an engaging with younger, so that's why I felt like that where I, you know, I need to be or I needed to be. So, that's why I choose this'*

This was often regarded as one of the central factors in preferences for working with people with dementia generally. However, for those with an interest in a related specialty, it was one of the multiple factors drawing them to the area and they noted their relevant skillset or 'talent'.

(Career choice for geriatrics) D8: *'I think it's really important and I think if anyone who wanted to, then why not, why not me? I'm passionate about it, and I think some people are dog whisperers and I think maybe that's my thing, like maybe I'm like, I don't know if there's such a thing as a dementia whisperer, but if there is, then maybe I have a little, tiny, you know, maybe like a finger nail worth of talent in that, and so I think it's something I'm good at, and I think I could help, I can make a positive impact.'*

Many participants described how their confidence for working with people with dementia has grown and gave accounts of how their preferences have increased as a result of this. A key theme within these accounts was increased preferences by overcoming fears of working with patients with dementia.

D16: *'So, I'm not as scared now, because I know that if I've got to talk to someone with dementia, I've a better idea of how to... a history of how to approach the patient, or, you know, how to adjust the way that I speak to them. So, yeah, in that sense yeah, it's been largely my exposure through medical school and through my experiences before medical school that have taught me a lot about it, and that makes me confident, but I also... not only am I more confident in my ability, but also make sure that I'm not going in there and going to possibly harm patients by not having the right approach or the right amount of interest in it.'*

(On the experience of TFD) N2: *'so I think beforehand I was probably a bit, I guess fearful really, I guess you could say, yeah, fearful. But then once learning about it, and being involved with this, you know, the couple that were involved with, and kind of breaking, I guess even breaking that stigma down as well, you know, and realising that there are ways... well, it's all individualised isn't it, as well, and finding what way works best for the particular person you're dealing with at that time, kind of thing.'*

In contrast, for some participants, their initial interest driven by feelings of competency and additional experience changed as they were exposed to other areas and confidence in them grew, diluting this initial focused interest in dementia.

D6: *'I may be slightly less interested in it (Dementia) now, than I was probably when I first started medical school, because I was more interested in it then, because I knew more about it, and I didn't know, obviously that much about medicine but I did know a bit about dementia, because of personal experience and my work experience, so I knew about it from a neurological point of view in that research too, so I found it interesting then, but now I've gone through medical school and obviously learnt about all the rest of medicine, there are other aspects to medicine that interest me more, so probably in relative terms now it's less of an interest than it used to be.'*

Impact of experience

The majority of participants explicitly identified how particular individual experiences (family, work experience, educational placements) have had an impact on preferences. These were described as being either negative or positive in terms of working with people with dementia. Participants identified how their experiences impacted their *confidence or competency*, recognition of the *rewards of making a difference* and *appreciate positive interactions with people with dementia*.

Participants acknowledged (and also perceived in others) how experiences of dementia and older adults with family and friends influenced their preferences for working with people with dementia. This was consistently described as a positive influence and included: wanting to make a difference and implement change;

increased confidence; and realising the enjoyment from interactions with people with dementia.

N7: 'I do find it very rewarding and.... almost... I don't know... one of my... my grandpa had Alzheimer's and I guess maybe I just have more of tie to it I suppose maybe than other people, because obviously I know how he was and I just think that maybe that's had an effect on how I see patients with dementia maybe.'

One doctor cites their own experience as a family carer as underpinning their decision to pursue geriatrics:

D8: 'So, that one experience probably was the biggest reason why I wanted to do it, but then when I actually saw it in practice, especially when I was working, that's when I realised that it's actually a good fit for me, and I just spoke to people how I wish that I was spoke to.'

Placements were frequently described as key in choices related to dementia. Placements were seen as confirmatory of preference, with participants explaining it in terms of 'fit' or 'cementing' choices. This was also reflected in overall preferences where placements were described as important in career selection.

(Career choice of geriatrics) *D8: 'Yeah, it just fit, it was like a shoe, like it wasn't... it wasn't something... it wasn't... I mean I could do anything, you could pick anything and do that, but it was the one that felt most "me" in the way I think and the way I speak,'*

One student described 'burning memories', capturing how participants often described vivid memories of patients or family they have carried with them:

D16: 'But I think that's what most people are influenced by, burning memory of patients, of experiences, it's not necessarily by generic interests of Pathology it's, you know, what patient struck you as interesting, and do you want to treat that patient or patients like them in the future, and you've sort of... that's how it was for me anyway. It was a patient cases where I was like "Wow, I want to be working with people like this".'

The experience of TFD was explored in participants that took part in this programme, while all the participants were positive about the experience there were mixed opinions about its influence on preferences. Those that did not feel TFD influenced their preferences commonly expressed they did not think about the experience in that way or that placements were more important. Some made the distinction between career choices and general preferences:

N3: 'While I'm sure that Time for Dementia did sort of help with engagement and sort of opening minds, I guess, to dementia, and learning about the sort of the personal aspect of dementia, I'm not sure if... I'm not sure... I think it's the placements that really would have influenced them (other students) on their career choices'

For those who expressed TFD had influenced their preferences, these were in several ways. This included: by reducing fears; recognising the impact of healthcare professionals; gaining an appreciation for working with people with dementia; or developing non-discriminating attitudes or increased interest.

D11: 'I think it probably did (impact upon preferences), because it... I think it showed... because we followed it over the months to see the sort of progression and I think it showed that is an interesting specialty you can do, and there's opportunity for research and development, so yeah.'

D14: 'they were extremely welcoming and lovely and we got on really well, and that was obviously great, because of that and that kind of touched on starting to... well, that's one of the experiences which just shows how much there is to appreciate about working with people with dementia.'

Work experience outside of healthcare training was also mentioned as influencing competency and confidence. There was a perception among participants that more exposure (in any settings) would lead to increased confidence or reduction in fear.

Personal attributes

Participants described their personality traits which they felt made them or others as being suitable for working with people with dementia such as patience, maturity and empathy.

N1: *'I thought I had the patience and maturity to probably take that on'*

D12: *'Yeah, I think so, yeah, I quite like sort of having those conversations and taking that time, whereas I think some personalities in medicine wouldn't enjoy that aspect of it so much'*

One participant with a preference for old age psychiatry gave a detailed account of how their cultural background influenced the way they positively view older people and understand challenges in dementia care arising from cultural influences.

D16: *'So, yeah, so culturally I can see a bit more perhaps than anyone else, more than any other cultures that sort of the effects of changes in the community and cultural factors and how that can seriously harm, I don't know, the care of elderly patients.'*

There was also an acknowledgement of how dementia was either an active interest or passion or did not fit with an existing individual interest.

Category 5: A different type of care

Participants' preferences for working with people with dementia were aligned with how they viewed their role as a healthcare professional and how they wanted to treat or care for patients along with their role in the patient's journey. Three subcategories were found: *appreciating a 'different type of care'*, *preference for medical or acute care*, and *ambiguity and uncertainty*.

Appreciating a 'different type of care'

Many participants attributed their positive preferences to the type of healthcare in dementia care; specifically that it was perceived to be more holistic focused, with more patient contact, and less medicalised; with a focus on quality of life (QoL).

Participants reported that they were drawn to working with dementia because of this focus.

D13: 'I like the fact that working with people with dementia it involves a holistic model. So, yeah, you'd get to consider the whole person and really take care of, or try and take care of and try and help improve the quality of life in every way'.

N1: 'You know, looking after somebody with dementia is a very different type of nursing, which is why I love having a bit of a variety, because I've got my youngsters, I've got my deteriorating patients,, but for dementia, it's a different type of care. Yes, there might be nursing needs, especially because we obviously see them, so there's definitely nursing needs, but you often, once that task is done, it's a very holistic nursing, that some people like to go in, do their job, job done, off they go, sort that out and move on. And that's not always the case with dementia'

Specifically, this was repeatedly seen as a positive factor in holding a preference for geriatrics and old age psychiatry (and psychiatry in general).

(Career choice for geriatrics) D8: 'it's less to do with... I don't want to say "fixing" because that's not the right word, but it's not about drugs, it's not about surgeries, it's not about quick fixes, it's not about let's cure somebody like, you know, with chemo or surgery, it's not that, it's not aggressive, it's quite patient in the way it practices and it is more focused on not just the patient but the family, the carers, it's got a more global perspective, it has to in order to be successful'

Participants viewed this holistic approach as being different from normal medical or nursing practice. The theme that this type of care was not the 'standard' was reoccurring within interviews and participants regard for this type of care was an influencing factor for wanting to work with people with dementia.

N6: 'I think it would be good just for them to understand more about time, you know, giving people time. I think some students feel... and I noticed it more I

think being older, a much older student when I went back, than anybody else, that it's often the medical technical side of things that people are interested in, whereas actually sometimes it's sitting down with people that, you know, the best part and the most important part,'

D1: 'it's, you know, to be quite frank, the social care side of it, that's not the sexy part of medicine, you know, that's the... not why anybody who goes to medical school, but certainly for me I kind of lost of interest in that side of medicine, and I became more interest in the kind of lifestyle stuff. So, I think if a student has more of an appreciation for the social side of medicine and social care and quality of life rather than the length of life or treating pneumonia or treating the cancer, I think that's what would drive an interest in patients with dementia.'

Preference for medical or acute care

Lower preferences for working with people with dementia were associated with a desire to work with more acute conditions, or a medical (rather than psychosocial) approach to patient care.

N5: 'I think people obviously for maybe the same reasons I did, tend to go for the acute medicine, I think that's the way I can think of about it, it's more kind of especially, you know, kind of excitement of you know variety of different procedures, but then there are some obviously nurses who just like elderly care, or who just like working with dementia, but at this stage of my, you know, post-qualification career, I don't.'

D3: 'Because I much prefer things that I can – or not – that generally are reversible. I much prefer things where people have like a good baseline, they come in with something that's quite kind of acute but reversible, and then they go back to that good baseline'

This was cited as a reason for a lower preference towards psychiatry specifically:

D11: 'I find in psychiatry placements there wasn't really that much general medicine and in psychiatrists, you know, like sort of relied on nurses... you

know, relied on the junior doctors to look at the ECGs and to do things like that. So, I don't know I'd want to lose all of those skills ultimately.'

Running through these explanations was the perception that in different roles or settings the focus on working with people with dementia would differ in the type of health care they would be practising and the patient needs they would be responsible for (i.e. physical needs or holistic needs) and this related to the preferences for working with people with dementia in these settings.

For those with a preference for medical or acute care the lower preference for working with people with dementia was often directly linked to the desire for medical, as in physical, impact which was felt limited in dementia and therefore was associated with *reduced satisfaction due to lack of impact*.

Ambiguity or uncertainty

Participants reported finding the ambiguity of clinical decisions or appropriate care practices for patients with dementia as challenging. Some participants reported that this made them feel uncertain about the best course of action for these patients. For some participants, this aspect of the work resulted in lower preferences through *reduced satisfaction due to lack of impact*.

D3: 'I just think it's... I don't know... I just think it's much harder, it's much harder to get an accurate story as to what's going on, what the problem is. Often they kind of are in hospital and no one really knows why. And it can be quite difficult to ensure that they have had kind of adequate quality of care really.'

For doctors, this appeared due to lack of information on patient history or difficulty performing tests, rendering normal procedures as more difficult with patients with dementia and requiring adaptation. Lack of capacity and legal aspects added to uncertainty in the decision making.

D9: 'In medicine, you want to go and ask the perfect patient, they'll give you a great history and then you'll examine them, and they'll be really compliant and then they'll be compliant for all investigations, but obviously that's like

what we taught to do at medical school, and then we go into hospital and you come up to patients with advanced dementia, and they can't give you a history, and you can't examine them and they won't tolerate investigations. Obviously, that makes me feel quite under-confident in what I'm doing.'

For nurses, there was uncertainty about the correct nursing approaches due to variability between patients and variability within patients (due to progression or changeability) leading to uncertainty in how to approach care. This constant need to adapt was perceived to be frustrating for some participants.

N1: 'but... and no two days can be the same, that's another thing that can be frustrating sometimes in the home. You say "Oh no, she won't drink at the moment," "Well, she likes juice." "No, she doesn't like that anymore." And it's true, you say "Oh, she drink that," "No, she doesn't like it anymore.'"

Both nurses and doctors discussed the difficulty of not knowing the normal 'baseline' for patients with dementia, and this impacted how they approached patients.

D1: 'you don't really have much of a baseline, if that makes sense, kind of you're then on the back foot and then you're spending more time trying to work out what their baseline is, and where they are in relation to that and trying to decipher A&E notes which are never the most thorough.'

Category 6: Perceptions of people with dementia

This category outlines how participants' perceptions of patients with dementia influenced their preferences. There are four subcategories: *care challenges*, *additional difficulties*, *positive interactions*, and *involvement of family*.

Care Challenges

Participants outlined symptoms, behaviours or characteristics they associated with dementia that they found particularly challenging, these included:

- Difficulties in Communication
- Lack of patient compliance

- High-risk patients (i.e. risk of adverse events such as falls)
- Complexity
- Differences between patients
- Aggression

While these challenges were not in isolation a factor for negative preferences, they were related to (or caused) many other factors which were found to be difficult, for example, difficulties in communication and differences between patients contributed to the perception of *ambiguity and uncertainty in practice*. These *care challenges* also contributed to the perception of *additional difficulties* with this patient group.

Additional difficulty

Participants commonly articulated it can be difficult to work with people with dementia, and frequently referred to the work as more difficult than with other patients. For some, this was a key factor in preferences against working with people with dementia.

D4: 'So, I think it is actually quite difficult to do, ...sort of how much time it takes to often look after them when it is challenging, especially if you're on a busy ward, which does sound quite bad'

Participants with a strong preference for working with people with dementia also described challenges, but did not appear to view these as barriers, instead, they referred to them as positive challenges to overcome.

D14: 'I think it's challenging, and I think as you can tell, I'm kind of interested a variety of things, but I like that it's part of that variety, because obviously it poses interesting... it poses challenges, which I think are really good for kind of developing the right skills and it's also really important, it's a really important part of working, it's a really important part of health care and how we look after people. So, I like that about it. So, I would look forward to it. I think I will find it hard, as I think most people do, but I like things that are difficult at the end of the day'

N1: 'I think it really depends on the person, I just enjoy it because usually I know it can be really challenging, but usually you know that you've gone in,

you've done what you need to do, they're in a better position now because you've done it'

The additional 'difficulty' was attributed to the time involved, barriers in performing therapeutic tasks, and the requirement to make adjustments. Participants acknowledged some of the challenges related to their specific role and that there could be fewer challenges in some specialist settings, for example, in geriatrics there may be fewer time restraints.

N4: 'At the moment I find it tricky because I'm trying to look after a variety of people, and then you get maybe one or two people with dementia who really need the extra care. So, maybe not right now, but in the future, I mean I don't... I quite enjoy being with people with dementia, but if I have more time.'

D10: 'because you don't have time to see them... that I do not enjoy about working with people with dementia, because we don't have the time to do that as a junior doctor. So, then you can say "Well, if you work in geriatrics, you'll have the time, that's part of the job," and that's true to be honest, you would have more time and that's part of your job to work with people with dementia, but working with people with dementia as a junior doctor who's got X, Y, and Z, you know'

For some doctors, they identify their preferences have decreased since qualifying due to the realities of the role.

D4: 'I'd say probably not during my undergraduate training, I don't think it was until I actually started as a doctor that I noticed how difficult it actually can be at times.'

These *additional difficulties* were one of the reasons it was seen as difficult to make a difference for people with dementia and related to *reduced satisfaction due to lack of impact*.

Positive interactions with people with dementia

Participants frequently identified positive interactions as one of the best aspects of working with people with dementia, regardless of preference. However, this was one of the most frequently cited positive reasons for preferences for working with people with dementia in general (rather than related specialties). It included pleasant conversations, enjoyment, disposition of the patient, and inter-generational learning. Some participants made the distinction that interactions with people with dementia were unique due to their dispositions, such as being more open and willing to share themselves.

N8: 'It is quite lovely. Like I said, it has its challenges and it is quite difficult, like I say, with severity of their dementia, but working with so many people who have conditions and diseases like that, it is wonderful, they are lovely people, for the majority of the time they are lovely people who just want nothing more than to share themselves (be open and forthcoming) with someone and I like to be that kind of person who is able to share such a thing with someone.'

N7: 'I don't know what it is about people with dementia, but there's definitely... I don't know if it's almost if because sometimes they do revert to being almost like children again, that you kind of have... you feel like you can bond with them slightly closer? That's what I feel like anyway.'

Some participants who identified that their preference for working with people with dementia had increased over time attributed this to increased enjoyment of these interactions through more exposure.

D14: 'I think the experience (during undergraduate training) has definitely helped turn from somebody who probably thought it's just sort of boring old people, to actually people that have got really rich characters and lots to offer and just a really... like I say, older people generally have just got a lot to say and I really enjoy hearing that.'

Involvement of family

Participants recognised that the patient's family play a key role in dementia care and form a core part of their interactions with patients. This was seen as posing additional challenges such as the reliance on family for information, introducing extra steps, or difficult conversations with families.

D12: 'I mean it adds another dimension often to a conversation or to things like capacity and deciding what the best treatment options are for people, and often it brings in the link of discussing with family and next of kin as well, which again adds another sort of issue.'

However, some participants also describe how this can be part of positive aspects.

D14: 'I also, you know, it's great that you're working with families and that it is like a holistic thing where you are... you know, maybe more so than some other, well, a lot of other medical problems it really is so important to be aware of everything going on and so that holistic care is really important, which I really love as model of health care.'

One learning outcome from TFD was how participants outlined how it changed their perspectives on the family carers.

D7: 'and the effect on also just the family, I feel like before it, people can seem quite demanding as family members, and now (after TFD) I just completely understand that they've gone through so much to get to that point, and it's all extremely stressful.'

The involvement of family contributed to the perception of working with people with dementia being '*a different type of care*' that is holistically focused and by adding *ambiguity and uncertainty* as a result of relying on others for information about their patient.

Category 7: care environment

Participants expressed how their preferences related to their perceptions of the care environment; that is the actual care that they can deliver to patients within particular settings or roles. Participants described how their preferences were affected by the

inherent nature of the setting or role, as opposed to patient characteristics (although these are inter-linked). The two subcategories were *difficult care environments* and *quality of care*.

Difficult care environments

As previously stated, participants described that working with people with dementia posed *additional difficulties*, for some the work was more difficult in some roles or settings and therefore would not prefer to work with people with dementia in these specific contexts.

D4: *'because you're quite hands on, it's your responsibility to sort of get stuff done practically, so it's quite easy for the consultant to go, "Well, let's just pop the catheter in, put a cannula in, get a chest x-ray," obviously CT head or something, but in practical terms if someone's got dementia, they're disorientated, don't sort of understand what's going on or aren't particularly cooperative, that can be quite... well, very difficult and time-consuming to manage'*

N1: *'So, I find it a nicer in the community, dementia is easier when they're more in their own environment, or one they feel really familiar with and comfortable with, that's my experience.'*

Quality of care

Participants described how they viewed certain care environments as restricting the quality of patient care they could deliver and therefore felt *reduced satisfaction due to lack of impact*, leading to a lower preference for working with people with dementia.

D10: *'Community, there's more time and that's what the focus is. So, if you're a social care worker, for example, or you're a family member, you've got... you're there to... you've got more time with the patient with dementia, which is essentially what they need, but in the hospital, people with dementia don't get the time because it's too busy, and that's the aspect I don't find satisfying.'*

That's the aspect that I find frustrating, hospital medicine goes too quickly for people with dementia.'

For some, this meant that their preference for working with people with dementia was dependent upon the role or setting, with participants making unprompted contrasts between settings and roles. A reoccurring theme was that of hospital versus community settings. Hospital care was seen as both more difficult to work with people with dementia but also as providing poorer quality of care for patients with dementia. Some participants with a preference for working with people with dementia described how they could not do this working in a hospital. One nurse described how she was leaving an elderly care ward for a community role as the hospital is 'just too stressful'. Hospital wards were seen as 'no place for somebody with dementia'.

D10: 'and it's kind of a difficult one because I'm very much... as I've sort of gone through this first bit of my career, I very much think that a hospital is not a good place for people with dementia'

N1: 'The ward is no place for somebody who's got dementia and they're not even unwell any more, they need to go home, somewhere else.'

Experiencing different settings

Participants commented on how exposure to a variety of settings would be important to get a balanced view of working with people with dementia.

N1: 'So, in terms of dementia, I do prefer... I don't think you can get the full experience of dementia patients as a student nurse working in an acute care situation. All they'll (student nurses) do is come out and say "Oh, god, that was a nightmare!"'

N4: 'So, to see people living with dementia in the community and coming into the GP practice, you know, it enlightens you and it reminds you, as I said before, you see people as they are in their real lives and not just this very frightened person in an acute hospital setting. And then I think, certainly

students that I was with, you then know whether that's right for you or not, I think.'

Category 8: Career characteristics

These factors encompass the wider aspects of a career working with people with dementia that influenced preferences which relate to the broader aspects of the work rather than direct patient care. These were both positive and negative influencers and are related to a work-specific environment. This was both a factor in specialties related to dementia and working with people with dementia generally in the context of a specific setting or role. These were largely expressed as considerations rather than the driving factor in dementia preferences.

Team environment

Positive experiences of working with people with dementia were associated with good team environments. In particular, there was a sense that those working in such specialties with older people were particularly 'good teams' to work with.

(On undergraduate geriatric experiences) D7: 'As a medical student they were definitely the nicest team of doctors in terms of getting you involved and teaching you and I think that really shapes your attitudes when you're at medical school, because the experiences that you have on each ward, you know, can put you off or put you on to a certain specialty. So, I'm interested to see whether or not that sort of kindness and friendliness and teaching extends when you're a doctor yourself.'

(On placement in community mental health team for older adults) N10: 'I had a good experience of it, yeah, and the people that... the nurses that worked there were really kind of enthusiastic about what they were doing and wanting to pursue a career further in that, within that, so that was a good experience.'

In contrast, one nurse identified negative views or attitudes from staff in hospital wards as off-putting:

N1: *'I would be frustrated in a hospital environment and everybody (other staff) who said anything slightly negative about them (people with dementia) that would annoy me so much. I couldn't work in that environment. I couldn't have a handover where somebody was slightly fobbed off, because they had opened their bowels six times deliberately, if that's what was commented, I can't stand stuff like that. That would really wind me up and so I couldn't last in that environment.'*

Challenges due to systems

Participants outlined issues with infrastructure, in a variety of settings related to dementia that affect preferences. These issues were often described as challenges they have directly experienced and included lack of funding, staffing levels and poor organisational systems.

D10: *'I mean if you've got like... so, in people's homes, nursing homes, etcetera, or I think all of them would have staffing pressures and time pressures and not enough money given to fund all of that.'*

N8: *'It was challenging in the sense of the workload that we had. We had ten or twelve patients each. Thankfully I was student, so I was just kind of working with the nurse at that point, but I could feel the challenge and stress that she had, having to work with so many people who had so many physical and mental health problems.'*

These challenges within systems were linked to views of *care environments* as they contributed to issues with performing direct care in certain settings.

Professional Development

Lack of professional development, such as reduced opportunities to develop skills or other restrictions such as the demand for these specialties in the country they ultimately wish to practice in, was a consideration for dementia preferences. Specifically for nurses, some participants identified not currently having preferences for working with people with dementia because they felt they needed to work non-dementia areas to 'get more skills' or 'pushing themselves further'.

N4: *'At the moment I don't have a plan. I mean I would like to think that I would go forward and you know keep pushing myself a little bit and find other areas where I can really learn some more, before perhaps settling on a more sort of – I don't want to say easy, but more sort of, I suppose an easier ward, where I am thinking more in terms of at the moment I'm in acute area, so it would be nice to be on perhaps an area, maybe care of the elderly or something like that. But at the moment I don't have a firm plan.'*

One nurse participant highlighted the pressure to work in hospital rather than community from university lecturers but felt her experience of community preceptorship challenged this.

N1: *'Definitely I think there's a real... and it's a bit naughty really, because they (university lecturers) also say you shouldn't go straight into the community, you should go into a ward, because you'll lose some of your skills, or you won't be as skilled. Well, I totally disagree,'*

Variety

The variety in workload was seen as a key factor in the appeal of careers overall and specifically in relation to dementia. There was a contrast in that those who enjoyed working with people with dementia identified that variety was a positive feature of work, whereas those with a lack of preference cited an absence of variety or identified the work as monotonous; generally in dementia care and in recognised specialties.

N4: *'I think the ward (elderly ward)... I think the ward would become, maybe, I don't know, I'm not sure, but maybe it would become a bit monotonous day in day out, the same sort of thing, I don't know, and maybe that's the unappealing bit.'*

D2: *'it was a relatively... it wasn't particularly varied let's say, it was basically... even though it was old age psychiatry over 99% of the referrals were essentially progressive memory loss, where the GP's trying to seek a formal diagnosis. Often the actual act of treatment medically wouldn't be particularly*

different, you know, someone might be started on like donepezil or something, but generally it would be more of "Here's a sort of label of a dementia of some sort."

Several doctors saw a positive aspect of geriatrics was the variety of medical issues from being a generalist.

D11: 'So, I think it's really important, again I did quite like geriatrics because it's not super-specialised, so if you're geriatrician you're sort of a general physician, because obviously they come along with lots of different things, there's lots of work around medications and sort of working out unnecessary medications. So, I think I would find it quite interesting.'

5.4 Discussion

This discussion outlines the main findings of SS3 and its strengths and limitations are presented.

5.4.1 Summary of research questions

Eight main categories were identified. Two categories focused on the nature of preferences and six related to factors. Together these provide an understanding of how newly qualified healthcare professionals view a career working with people with dementia and the factors that were influential whilst they were students. How these conceptual categories answer the sub-studies research questions is described below.

Q1. How do newly qualified/healthcare students view a career working with people with dementia?

Preferences for working with people with dementia were initially conceptualised as a clinical interest and in relation to dementia-related recognised specialties (outlined on p. 27). These concepts were explored in this sub-study in terms of students own definitions and individually held preferences and were encompassed in the categories related to the nature of preferences. Preferences were found to generally fall into these two original definitions but were nuanced. This reflects the complexity

of preference for working with people with dementia and the general complexity of career choices overall.

The results indicate that participants recognised that they would inevitably work with people with dementia due to the large numbers of people with dementia accessing healthcare services. Preferences for working with this patient group within their chosen future careers (i.e. clinical interest) were found to vary between participants with some expressing whether this was an active interest or enjoyable part of the role, or, were hesitant or less preferred. These general preferences for working with people with dementia could also vary in different contexts; for example, some held a strong passion or working with people with dementia, but never in a hospital setting.

General preferences expressed in interviews were compared with recorded interests on quantitative measures at the time of the interview (see Table 33). It was found that quantitatively recorded preferences appeared more positive and did not reflect the variation in feelings that were evident between participants' interviews. Particularly for medical students, where six students who expressed negative or neutral preference during the interview had high ratings of preference, rating 4 or 5 on a scale out of five, on the quantitative measure. This suggests this single item question may not be sensitive enough to capture the subtlety of individual preferences. This adds support to the previous speculation that the results found in SS2 may, for some students, relate to the understanding that they will work with people with dementia, rather than represent a high preference.

Recognised specialties (defined as registered specialties in medical students or specialist clinical roles in nursing) related to dementia were defined by participants as those responsible for the management of dementia or involved working with many patients that had dementia. Students generally felt confident in identifying specialties with many cases of dementia, equating it to working in areas that served older people but were less confident in identifying those responsible for specialist dementia care. This finding is reflective of the reality of dementia care pathways for dementia care, which have been continually recognised as needing improvement and clarity (Department of Health, 2015, Martin et al., 2018).

Q2.What factors were influential in how they feel about working with people with dementia?

Factors for overall preferences not related to dementia were explored and with a wide range of factors identified that are comparable to the previous literature on career choices (Querido et al., 2016, Gould et al., 2012, Rognstad et al., 2004, Yang et al., 2019). This includes: the importance of specialty characteristics and nature of patient contact; placements and clinical experiences; practical factors such as work life balance and work environment; and alignment with values and interests. These overall factors were reflected in the accounts of preferences for working with people with dementia. However, they differ in the way they are perceived or applied to preferences for dementia and some are more prominent. Six main categories contributed to preferences for working with dementia; their priority differing on an individual level and depending on context (clinical interest vs recognised specialties).

Three were found to central to preferences:

- I. *Making a difference*: participants' assessments on their ability to positively impact patient with dementia was integral to preferences. Perception of 'impact' and their ability to achieve this varied. Ability to achieve this was based on the perception of the environment, their competency and definition of impact. Similar themes have been found in previous literature on preferences for working with older people with qualitative themes as the influence on 'sense of agency' in nurses (Gates et al., 2009), and descriptions of 'hopelessness' (Carlson, 2015) and the 'futility of care' (Bagri and Tiberius, 2010). This appears central to dementia preferences.
- II. *A different type of care*: participants described how working with people with dementia fits with the type of view of healthcare they want to practice. Specifically, it is seen as a holistic and psychosocial approach which for some was its attraction. There was also a sense that this type of care was not the standard practice and for some less appealing. Participant descriptions appear to recognise the need for a person-centred approach to dementia care. While definitions of dementia-orientated person-centred care may be inconsistent, it is accepted as essential to quality dementia care (Brooker, 2003, World Health Organization, 2017, Department of Health, 2009, Department of Health, 2015). This stems from the understanding that a

medical model of dementia is insufficient; social and psychosocial factors interplay with biological processes in resulting presentations of dementia and peoples experiences of the condition, and therefore these factors need to be considered in approaches to care. Person-centred care was first described in relation to dementia by Tom Kitwood (Kitwood, 1997) and has been expanded and refined by Brooker (2003); Brooker describes four key elements to person-centred dementia care, referred to as the VIPS framework (Brooker and Latham, 2015, p. 12):

V: A value base that asserts the absolute value of all human lives regardless of age or cognitive ability

I: An individualised approach, recognising uniqueness

P: Understanding the world from the perspective of the person identified as needing support

S: Providing a social environment that supports psychological needs

- III. *Aligning with personal characteristics*: participants' experiences in training, work, and personal relationships influenced their perceptions of working with people with dementia and their evaluation of their competency, which directly affected their willingness to engage with this patient group. An interesting observation is that three out of four participants selecting specialties related to working with people with dementia were from other ethnic groups. One participant gave a descriptive account of how their cultural background had influenced their perception of working with people with dementia. While no conclusions can be drawn from this due to the small sample size, given previous literature on preferences for working with older adults that suggests cultural influences (Hebditch et al., 2020) this should be explored further.

Three categories appear more secondary:

- I. *Perceptions of people with dementia* were integral to understanding preferences as they contributed to the other factors in multiple ways. Through this analysis how these perceptions relate to preferences were explored in detail. For example, communication difficulties in patients and other care challenges related to their feeling of competence, the nature of the work (e.g. ambiguity and uncertainty) and their ability to make a difference. A central theme was the *additional difficulty* associated with working with patients with dementia compared to other patients which related to many other factors.

The impact of difficulties with communication have been previously identified as barriers to working with people with dementia (McKenzie and Brown, 2014). However, the comparison to it being more difficult than compared to other patients as an influence on preferences has not been made and is a novel finding.

- II. The *Care environment* was a consideration for participants who acknowledged that preferences depended on the context of working with people with dementia, specifically that some environments made caring for patients with dementia harder and delivered poor quality of care. Exposure to positive care environments was seen as integral to positive perceptions of working with people with dementia. Hospital care was constantly identified as a sub-optimal care environment for working with people with dementia, which fits with evidence on care outcomes in the literature (Alzheimer's Society, 2016, Dewing and Dijk, 2016).
- III. *Career characteristics* such as professional development, team environment, variety and challenges due to systems were discussed, these appeared to be mostly considerations of preferences rather than passionate drivers.

Many factors were dichotomous in that they could affect preferences positively or negatively. However, a novel aspect of this study was the ability to explore positive aspects of working with people with dementia both generally and within related specialties by the targeting those who had shown a previous preference. Consistent positive factors included the rewarding nature of the work, appreciating a different type of care, enjoying interactions with people with dementia, and also regard for the team environment. This adds to the literature on the positive perceptions of working with people with dementia and what is valued. This indicates the type of healthcare professionals that may be drawn to this area or how interest could be cultivated.

Preferences were explored with participants for working with people with dementia generally, in the context of current and chosen careers (i.e. as clinical interests) and perceptions of and preferences for related recognised specialties. Specific factors accounting for general preferences toward working with people with dementia included making a difference, competency and confidence and the perception of additional difficulties and these were changeable with the context and job role.

For preferences related to recognised specialties, some distinct themes were identified for individual specialties. For geriatrics, consistent factors included viewing the variety derived from being a generalist as a positive and the perception that it is 'a different type of care' as either an appealing or a deterring factor. It was also perceived it would be easier to work with people with dementia in a specialist role, including geriatrics, due to dedicated time and focus on holistic issues enabling them to meet the needs of people with dementia. Nurses also stated that working in a specialist area would be more preferred when working with people with dementia due to being able to have an impact. Old age psychiatry was also seen as a 'different type of care' like geriatrics, however in comparison, a perceived negative was a lack of potential impact on the patient due to their role and the nature of the conditions.

In terms of settings, the lack of impact on patients leading to reduced satisfaction was a continual theme for working with people with dementia in hospital settings, with both nurses and doctors citing it as a difficult care environment for people with dementia and not being able to effectively meet the needs of these patients. For long-term care and hospital settings challenges due to systems were noted.

Apart from obvious divergence in related specialties and roles, the majority of factors were mirrored in nurses and doctors accounts, due to the nature of patients and shared contexts. However, some divergent themes were found. For doctors, the ambiguity and uncertainty of working with people with dementia, derived from the lack of information, and having to make best interest decisions were a consistent and unique concern. This was related to difficulties in their role expectations and the need to adapt their normal practice.

For nurses' a unique concern in professional development was the concern in terms of skill development, with some stating that they would like to initially focus on developing more skills before they would consider working in specialties related to dementia, implying that this was unskilled or basic care.

In general, it was observed that attitudes towards patients with dementia were positive, in that they held regard and empathy for them, understood why 'challenging behaviours' were manifesting (as a result of an unmet need) and enjoyed

interactions with people with dementia. However lower preferences were attributed to the realities of delivering care, making working with people with dementia unsatisfying, as well as the type of practice not aligning with personal interests. This supports previous research that observes relatively high attitudes to with older people, but low preferences (Sizer et al., 2016, Herdman, 2002). Studies on attitudes to dementia in the UK have also found high attitudes in medical students as measured by the ADQ (Tullo and Young, 2014). The student population from which the participants were drawn from for this study also appear to hold relatively high attitudes as measured quantitatively, as seen in SS2 (See Table 14). This is also seen in the evaluation of the TFD programme (Banerjee et al., 2020). Suggesting that attitudes to dementia are relatively high and do not account for low preferences.

Q3. What impact has TFD had on their preferences towards working with people with dementia?

While all students were positive about the TFD programme and outlined learning outcomes, which has been documented in previous qualitative research on TFD research (Daley et al., 2020, Grosvenor et al., 2020), there were not unanimous views about its influence on preferences. For those who said it had no impact, some relate this is not being comparable to a placement experience, which suggests because it does not mirror a job role they do not view it in this way. However many stated that it had influenced their preferences. This included through reducing fears, recognising the impact of healthcare professionals, gaining an appreciation for working with people with dementia, non-discriminating attitudes or increased interest. No participant described a negative impact.

This gives some evidence for a positive impact, as previously indicated in the initial findings from SS2. It suggests TFD may affect preferences by increasing competency and confidence, changing perceptions of interactions, and increasing awareness of how to make an impact.

These results highlight that educational programmes in dementia can be enhanced by consideration of how they may influence preferences. For instance, by including learning objectives or reflections around the potential impact to patients, or providing information on healthcare roles related to dementia to situate the experience within

the context their careers, and understand ways in which they will influence when in practice. This may particularly benefit programmes that use a longitudinal community focused model outside of traditional placements or teaching such as TFD.

Q4.How have their career preferences for working with people with dementia changed during training or post-qualifying?

These results identified that newly qualified healthcare professionals were able to actively identify that their preferences for working with people with dementia had changed over undergraduate or since qualifying, as was reflected in the recorded quantitative data. Through exploring the dimensions of changes such as when the change occurred, the direction of preferences and influencing factors similar patterns emerged. Four main types of changes are outlined.

First, some participants held a sense of fear in working with people with dementia due to lack of confidence and experiences that helped them gain skills and build confidence reduced this fear and therefore increased preferences for working with people in general. This was through general training, exposure in practice and specific experiences. This implies that preferences related to lack of confidence may be amenable to change but also highlights how there is a generally recognised timidity to work with this patient group; participants often used words such as 'fear', 'scary' and 'hesitant'. This finding is important given the general recognition of lack of confidence; one study in the UK found that only 52% of 3rd year nursing students said they felt prepared to care for people with dementia (Baillie, Merritt, Cox, & Crichton, 2015). It was also found that some who initially felt they had an interest described how exposure to other areas (e.g. acute medicine) gained confidence in these areas and therefore were drawn away from their original interests. This could suggest that when students enter training with a higher preference for working with people with dementia, due to previous experience and increased knowledge, that preferences may shift as the result of continued emphasis and value placed on skill-building in acute medicine. This may explain why in SS2 nursing students preferences for working with people with dementia were associated with previous experience, but only in 1st-year students and preferences decreased over time.

Second, as with preferences overall, placements were seen as integral to forming preferences and related to increasing interest or helping to cement choices of initial interests.

Third, participants describe how preferences increase once they gain an appreciation of impact. This relates to how they can understand that they can make a difference and therefore derive satisfaction from the work, this understanding came through various means. For doctors, this appears true in practice when they feel able to take ownership of patients' needs but others discussed certain experiences that highlighted this revelation.

Fourth, participants also described how preferences increased when they gain an appreciation of how interactions with people can be enjoyable and appear to arise out of changed perceptions of people with dementia.

Exploring participants' own accounts of changes highlights how increasing competence, increasing understanding of the impact they can make, and experiences allowing positive interactions increase preferences, as well as the need to have (positive) placements to explore fit.

5.4.2 Strengths and limitations

Strengths

There are three main strengths of this study to note. First and notably, it adds a novel contribution to the literature; preferences for working with people with dementia in students or newly qualified healthcare professionals have not yet been explored in the UK. Rich data were gathered in the form of interviews and the systematic application of grounded theory methods, with consideration of rigour (Section 5.2.8), adds strength to the findings. In particular, rigour was aided by supervision from an experienced qualitative researcher, systematic application of grounded methods and using NVivo 12 (QSR International, 2018) to add structure to the analysis as well as to record ongoing developments. These processes aided reflexivity throughout. In addition, the use of criteria and guidance, provided by Charmaz (2006), was used to reflect on the analysis and the direction of the emerging theory. Evidence of the development of the conceptual categories can be

found in a summary of analysis (Table 30) and example memos (Appendix Q), adding transparency to the interpretations of the data.

Second, the inclusion of doctors and nurses allowed the topic to be viewed as a multidisciplinary issue. Investigating both doctors' and nurses' perceptions allowed similarities and differences to be understood, this could inform the development of multidisciplinary education and training in practice.

Third, purposive sampling from survey data ensured participants with differing preferences were recruited as well as identifying changes in preferences to be explored in interviews. This ensured a range of views were included, changes could be explored, as well as an understanding of the sample characteristics to help assess the generalisability of the sample to other populations.

Limitations

There are five main limitations of this sub-study.

First, a key consideration for any study is the sample size but in qualitative research, there are no set rules for this calculation and a common criticism is the lack of explanation or justification (Vasileiou et al., 2018). This study's sample size (n=27) fits with the general practice that 20-30 participants are considered appropriate for grounded theory (Charmaz, 2006, Creswell, 2013). However, it is advised that rather than using conventions, the sample size should be identified by the study's aims, quality of data and, in grounded theory theoretical saturation. In this study, the data was rich and detailed with relatively long and in-depth interviews supported by healthcare professionals being able to articulate their preferences in an open manner (Morse, 2000). During the latter part of the analysis saturation of main categories was observed, with elements of subcategories being well rounded and theoretical sampling utilised. Both justify the use of a smaller number of participants. However, it is also acknowledged that larger samples are suggested when there are different groups of participants (Hagaman and Wutich, 2017). Therefore a larger sample of nursing students and, in particular, a further collection of mental health students would have been preferred but was restricted due to practical reasons. This was because the response rate of nursing students was lower than medical students (perhaps due to invitation emails being sent from a medical school rather

than nursing school) and was not able to be compensated with further recruitment due to disruptions during the COVID-19 pandemic.

Second, due to the relatively small sample and qualitative nature of this study caution is needed when generalising the findings to different populations. Participants were sampled from five different HEIs in the south of England, with 52% taking part in a focused dementia educational practice (TFD). There may also be bias in those taking part this may include those more likely to take part if they had a positive TFD experience or more positive preferences in general. However, while the participants' preferences appear to reflect more positive preferences than the complete sample in SS2, there is still a wide range of preferences and type of preferences included, with some actively saying they would prefer not to work with people with dementia in certain contexts. However, in line with qualitative constructivist theory, while it is acknowledged that these findings only reflect the participants in this sample they provide detailed reflections that may help explain factors in comparable populations.

Third, a possible limitation was the use of telephone interviews rather than face to face interviews. Initially face to face interviews were planned to be the predominant form of interviews, but in practice participants voiced a preference for phone interviews due to busy schedules and prohibitive NHS locations. Differences may have been observed with alternative data collection methods (Creswell, 2013); face to face interviews may have had the advantage of facilitating clearer communication (e.g. through facial cues) and physical proximity may have facilitated better rapport with participants. Nevertheless, it was felt this would not be a barrier due to the relatively unemotional nature of the topic (i.e. career preferences), participants' communication skills and doctoral researchers prior interview experience, and was generally observed in practice with detailed interviews.

Fourth, factors that influenced participants as both students and since entering practise were explored. For their preferences as students, these were retrospective accounts, relying on their memories of how they felt as students. Therefore their responses may have been different if they had been interviewed as students. However, an advantage to this was how actual preferences have influenced decisions and changes in immediate period following qualification. Additionally,

longitudinal records of preferences, both as students and at interview, allowed some cross-validation of the changes they identified.

Fifth, when exploring how TFD may have affected their preferences participants may have felt prompted to answer the question and deliver a positive answer. However, this was mitigated by careful consideration of the question to reduce prompting (open and neutral) and asking this question later in the interview.

5.5 Conclusions

This analysis resulted in eight main categories. One core category was not felt suitable due to the nature of preferences and how students view a career working with people with dementia, therefore, it was decided the complexity was best represented by the nature of preferences and its factors. There were two main categories around the nature of preferences (towards dementia and overall preferences) and six factors associated with preferences for people with dementia. These factors were interlinked and represent underlying principles or rationales for preferences. Three factors were seen as those that directly drive preferences: making a difference, aligning with personal characteristics, and a different type of care. While three were seen as the components or the basis of these views: perceptions of people with dementia, care environment, and career characteristics.

Together, these core conceptual categories provide an understanding of the preferences of healthcare professionals for working with people with dementia. These results contributed to the basis of the final conceptual framework, however, the formalisation of the conceptual framework involved the integration of previous sub-studies and literature; and this objective is met and described in Chapter 6.

6 Chapter 6: The conceptual framework

In this chapter, the findings from each sub-study are integrated to create a composite conceptual framework. The method of integration used to develop the framework is described and the final conceptual model is presented and discussed.

6.1 Development of the conceptual framework

6.1.1 The objective of integration and thesis aim

The objective of integration was to synthesise the results from each sub-study to develop a composite conceptual framework. Through this integration the thesis aim was addressed, which was, to identify and explain what factors influence undergraduate and newly qualified doctors and nurses preferences for working with people with dementia and to develop a conceptual framework for how these factors impact (positively or negatively) upon preferences.

6.1.2 Methodological considerations

The process of integration in this thesis was driven by the aim to produce a conceptual framework that is grounded in the data i.e. a mixed grounded theory. The overall Mixed Method Grounded theory (MM-GT) approach to build a composite conceptual framework is outlined and justified in Chapter 2. The method of integration in mixed methods is described as a creative and adaptable procedure (Bazeley, 2017). Approaches to bringing different data together in MM-GT varies depending on the research objectives and the methods used and as a developing methodology lacks a prescribed method of integration (Johnson and Walsh, 2019). The method used in this thesis is described below.

6.1.3 Method

The procedure for developing the conceptual framework was an iterative and experimental process of making sense of the data, within three main phases.

Phase 1

Results from each sub-study were extracted into a table providing an overview of the qualitative themes and quantitative variables, which represent factors,

associated with preferences. This can be found in Appendix V. A summary of how data was extracted from each sub-study is described below.

SS1 was a systematic review of the factors associated with preferences of nursing and medical students for working with people with dementia and older adults. It included quantitative, qualitative and mixed methods papers. Only variables and themes found specifically relating to preferences for working with people with dementia were extracted for integration. Variables were recorded as significant ($p < 0.05$) or non-significant. The themes extracted were those noted as major themes in the qualitative work, were a suitable description and evidence was presented. For the literature on older adults, a summary was made on the evidence for factors that were associated with working with older people and statements within this literature related to preferences for working with people with dementia were also noted as commentary.

Additionally, as the review search in SS1 was conducted in September 2018 an update was conducted in May 2020, after the completion of SS3, to ensure the most up to date literature would be considered in the framework. A full description of the procedure for this update is included in Appendix U. Five studies were found, only one in relation to dementia preferences. New findings include that one study found qualitative evidence for the impact of a dementia educational intervention (Goldman and Trommer, 2019) and two novel findings were found concerning working with older people; empathy (Chai et al., 2019) and gerontological teachers' abilities (Garbrah et al., 2020) were positively associated with preferences. The results of this review update were also included in the extraction.

SS2 was a longitudinal investigation of career preferences in undergraduate healthcare students. Variables and themes were extracted in the manner of the systematic review. Results for both medical and nursing students were combined but points of difference were noted.

SS3 was a grounded theory study exploring factors influencing undergraduate and newly qualified healthcare professionals' preferences towards working with patients with dementia. The data extracted from this included the main conceptual categories and subcategories in relation to factors. Themes within the nature of preferences

(i.e. around the definition of preferences rather than factors related to preferences) were not included. Also, the preliminary models used to explore the links between factors were consulted in the model building process.

Phase 2

The extracted data table was then used to decide the main factors indicated from the evidence from the sub-studies. This involved creating a joint display table, using the conceptual categories found in SS3 as the initial framework, to compare the evidence from each sub-study for each factor. Specifically, results were compared in terms of how they *confirm, discord or expand* on each factor (Fetters et al., 2013) and an evaluation of the strength of evidence was made (i.e. was it consistent, moderate or limited). This was an iterative process that involved consultation with SD. While the conceptual categories from SS3 were used as the basis of the factors, the categorisation of factors was adapted to make the most sense of all the thesis data. For instance, in SS3 *impact of experiences* was initially part of the conceptual category *alignment with personal characteristics*, but this was viewed as a separate factor when looking at the overall results. Therefore, the impact of experiences was considered as an independent factor, and demographics and alignment with personal characteristics were pulled together to form the factor: student characteristics and alignment with attributes. Results in this joint display table were cross-checked with the data extraction table to ensure all results had been considered. The goal was to create a useful conceptual framework, therefore, favouring simplicity and the practical application of findings; mainly in an educational context, but with reflections on practice.

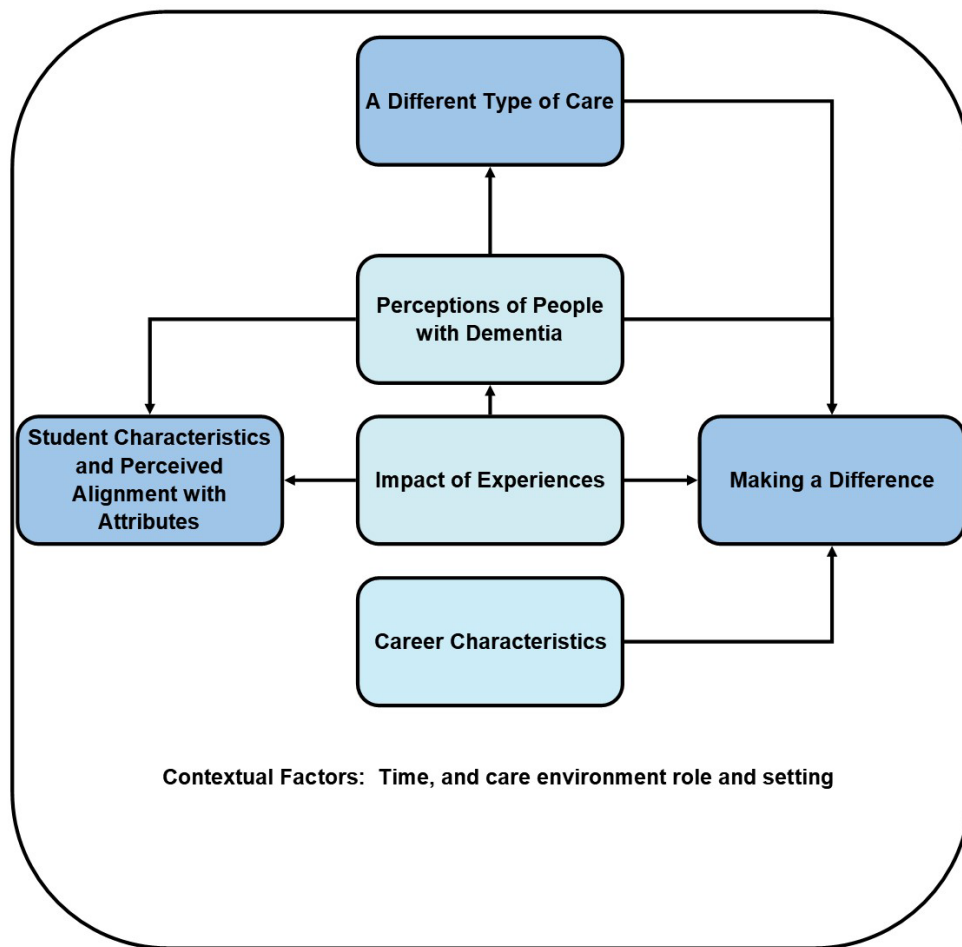
Phase 3

Lastly, once an agreement was reached on the main components of the framework i.e. the factors associated with preferences for working with people with dementia, this was synthesised into a conceptual framework. In line with previous frameworks on preferences (Bennett and Phillips, 2010), the decision was made to include all identified factors, not just the most confirmatory evidence, to provide a summary of potential factors and suggestions for future research. The final joint display table summarising the supporting evidence from each study for each factor can be found

in Appendix W. In the next section, this is presented narratively and in the form of a model.

6.2 The conceptual framework: description and discussion

The conceptual framework of factors associated with preferences for working with people with dementia in undergraduate and newly qualified healthcare professionals is presented below. A model of the framework is presented in Figure 9a; there are six main factors and two contextual factors and interrelated concepts are indicated by arrows. The three factors most directly accountable for preferences (signified by darker colour) are shown to be influenced by the three factors in the middle. Figure 9b presents the individual factors and evaluation of evidence.



Factors	Summary of Evidence
Making a Difference	
Rewards of making a difference (+)	***
Reduced satisfaction due to lack of impact (-)	***
Student Characteristics and Perceived Alignment	
Knowledge & perceived competency	***
Attitudes (Quantitative measures)	***
Female gender (+)	**
Older students (+)	*
Student type	*
Empathy (+)	*
Cultural influencers (e.g. ethnicity)	*
A Different Type of Care	
Appreciating a different type of care (+)	***
Preferences for medical or acute (-)	***
Ambiguity or uncertainty(-)	**
Stigma and prestige of profession (-)	*
Impact of Experiences	
Overall experiences	***
Dementia Educational programmes (+)	***
Placements	***
Pre-educational experience (+)	*
Personal experience	*
Perceptions of People with Dementia	
Care challenges (-)	***
Positive Interactions (+)	***
Additional difficulty (-)	**
Involvement of family	*
Career Characteristics	
Challenges due to systems & work environment (-)	***
Professional development (-)	***
Variety	**
Emotional nature of the work (-)	*
Team Environment (+)	*
Lifestyle Considerations	*
Contextual factors	
Care environment, role and setting	***
Time	***

Factors: (+) = associated with higher preferences. (-) = associated with lower preferences. Otherwise can be associated with either higher or lower preferences.
 Summary of Evidence: ***= Consistent evidence, ** = Moderate evidence, *= Limited evidence

Figure 9a (Above): Conceptual framework of preferences for working with people with dementia- the model.

Figure 9b (Right): Conceptual framework of preferences for working with people with dementia – the factors

Each factor is now described in turn, outlining the supportive evidence, evaluation of contribution to preferences, and its implications.

6.2.1 Student characteristics and perceived alignment with attributes

Student characteristics, as well as students' perceptions of how their attributes align with the nature of working with people with dementia, are associated with preferences. Factors include age, gender, cultural influencers, student type, knowledge and perceived competency, empathy, and quantitative measures of attitudes.

Quantitative measures of attitudes

Quantitative measures of attitude, including positive attitudes to older people and attitudes to people with dementia, were a consistent factor associated with preferences for working with people with dementia in SS1 and SS2. This indicates that attitudes, comprising positive beliefs, feelings and behaviours towards patients and people with dementia, related to their preferences for working with this group. The implication is that students with more positive attitudes are more likely to want to work with people with dementia. Therefore attitudes should be considered for staff and student recruitment. Also, increasing positive attitudes to dementia may increase preferences (e.g. through educational interventions) although a causal relationship has not been established by this thesis. However, defining what this association means for preferences is difficult due to the lack of clarity on the construct of attitudes to dementia. Previous research has identified the content of attitudes to older people is rarely specified (Samra et al., 2017), and this is also hard to specify for dementia attitude measures, especially as they are a multi-dimensional construct. Therefore future recommendations for research include the need to be explicit about those specific attitudes affecting preferences for working with this patient group. In SS2, multiple attitude measures were associated with preferences, but the most significant predictor was the MCRS that measured to what extent students view patients with dementia as 'enjoyable, treatable and worthy of medical intervention and resources' (Christison et al., 2002). The qualitative work in SS3 expanded on the content of the attitudes or perceptions of working with people with dementia and how they may be associated with their preferences; attitudes relating to the type of care and making a difference to patients appear integral to preferences

rather than negative attitudes directly to patients. These findings are supportive of previous literature that proposes attributing lower preferences for working with older adults in healthcare students on poor attitudes or ageism is an oversimplification (Herdman, 2002) and suggests the need for a wider perspective of influencers. This may explain why attitudes measured quantitatively are consistently found to be associated with preferences, but they are also found to be relatively high (see p. 220), while preferences are low.

Knowledge and perceived competency

Knowledge and perceived competency was identified as a key factor. Within SS1 and SS2, there was limited evidence for quantitative measures of knowledge being associated with dementia preferences, but a clear association with self-reported competency/confidence was found. In SS3, a dichotomy was found between those evaluating themselves as more competent in dementia care holding higher preferences and lower confidence being a reason for lower preferences. The perception that working with people with dementia posed additional difficulties contributed to this factor, and participants identified that exposure to working with people with dementia increased confidence and competency. This highlights the importance of acquiring skills as well as students own perceived evaluation of their capabilities, specifically in their ability to respond to patients' needs and awareness of issues for patient care.

This finding implies that confidence and competency is a modifiable aspect of preferences. For instance, SS3 identified that positive experiences with people with dementia can help students overcome fears, including developing a tailored approach to patients, with a focus on managing difficulties with communication; which is outlined as one of the most difficult symptoms to manage. There is a consensus that healthcare professionals need increased competency in dementia care and that this should be included within education globally (World Health Organization, 2017, Alzheimer's Disease International, 2019) and in the UK (Department of Health, 2013, Department of Health, 2018, World Health Organization, 2017). Guidelines for baseline competencies of healthcare staff have been developed (Skills for Health et al., 2018, Waugh et al., 2013) which indicate the key knowledge, attitudes and skills that should be taught to undergraduate healthcare students. This includes understanding the principles of dementia-

oriented person-centred care and effective communication strategies. Currently, the inclusion of these competencies in dementia education is mandated within the undergraduate curriculum (Department of Health, 2013). However how this is delivered is at the HEI's discretion, which is suggested to vary in quality and depth (Knifton et al., 2019). This study suggests that the inclusion of these principles more comprehensively may provide better-trained healthcare professionals who are also more willing to work with this patient group. A systematic review on the effectiveness of dementia education and training programmes suggests that important components include:

..the need for educational programs to be relevant to participants' role and experience, involve active face-to-face participation, underpin practice-based learning with theory, be delivered by an experienced facilitator, have a total duration of at least 8 hours with individual sessions of 90 minutes or more, support application of learning in practice, and provide a structured tool or guideline to guide care practice (Surr et al., 2017, p. 966).

Targeted dementia educational programmes for undergraduate students may consider these principles and offer a way to increase knowledge and perceived competency, and therefore preferences. TFD is an example of such a programme. The role of dementia educational programmes on preferences is discussed further on p. 244.

Furthermore, some accounts of reduced preferences suggested that as exposure and skill development was focused in other clinical areas during their training, their original interest in dementia was dampened. Given those participants who had higher preferences ascribed this to feeling competent in relation to dementia, it is suggested that students with previous experience or perceived competency in these areas could be offered the opportunity to further build on this. For example, they could be partnered with mentors, given leadership opportunities or active roles in dementia-related projects. This may offer a way to encourage talent in these areas, and empowered students may continue to take this forward in practice. Within TFD, students who took a role in the project, either by completing nested research projects or sitting on the project programme board, were not invited to interviews in SS3 due to the doctoral researcher's perception that these students were very

involved in the project and may have brought bias to the sub-study. However these participants did have an existing interest in dementia and had received opportunities to further develop this, therefore on reflection, it would have been interesting to see their perspective of how their involvement in the project influenced their career preferences.

Age and Gender

There was moderate evidence for an association with age and gender, with some indication that older and female students may hold higher preferences; however further research is required. SS1 found that within the literature on preferences working with older adults, female students are consistently associated with more positive preferences, particularly towards geriatrics in medical students. There was some evidence that female gender is also associated with working with those with cognitive impairment (Diachun et al., 2006a). In SS2 female students were more likely to hold higher preferences for working with people with dementia. No evidence for an association with age was found in SS2, but McKenzie and Brown (2014) found a positive association for older students and dementia preferences. These authors found that different factors were influential for older and younger students. This suggests there may be a difference in consideration of preferences for older and younger students that could be explored further.

Student Type

There was limited evidence that higher or lower preferences were associated with student type. SS2 found that student nurses in the mental health branch were significantly more likely to hold higher preferences for working with people with dementia than those in the adult branch. No previous research was identified exploring preferences between student groups, including nursing and medical students, and this was not compared in this research. However, within SS2 and SS3 some factors were of differential importance or expressed differently by nursing and medical students. For example, ambiguity and uncertainty were identified as a feature in dementia care by both but attributed this to different features of the work, and concerns about professional development were only noted in nurses. This suggests that many factors are comparable, but presumably due to different training

pathways and roles and responsibilities, there will inherently be differences in the importance of each factor.

Cultural influence and empathy

Areas of limited evidence but that warrant further exploration are cultural influence and empathy. In terms of cultural influences, SS1 found there was mixed evidence for associations with religion and ethnicity in the older adult literature suggesting preferences should be viewed within these contexts. No previous literature related to dementia preferences were found. In SS2, based in the UK, no differences in ethnicity were found. However, due to sample size, ethnic groups were grouped into only two categories. Therefore this analysis did not allow for differences between other ethnic groups to be tested. In SS3 there was some evidence for a more complex picture; one participant describes how observing stigma in their community resulted in increased interest, however, this may not be the same for others in same or different cultural backgrounds. This suggests further qualitative research is recommended to address this area in more depth.

In terms of empathy, previous research has consistently found that higher scores of empathy in medical students are found in those with preferences for working in people-orientated specialties, rather than technical-orientated specialties (Guilera et al., 2018). As dementia care and related specialties may align with more person-orientated specialties this association may also be found for dementia preferences. In this research, some evidence was found for an association for higher empathy and preferences related to working with older people in SS1 (Chai et al., 2019). In SS2, an association with empathy and preferences for working with people with dementia was also found, however this association was not identified or explored within SS3. Given that empathy is recognised to be important among healthcare professionals, and there is concern that it decreases over undergraduate training (Batt-Rawden et al., 2013, Hojat et al., 2009, Ward et al., 2009), student empathy regarding career preferences for working with people with dementia is an area for future research.

6.2.2 Making a difference

A central factor found in SS3 was the need to make a difference, where there was a clear dichotomy between higher preferences for the rewarding nature of making a difference and lower preference from reduced satisfaction due to lack of impact, or 'not making a difference'. A unique aspect for working with patients with dementia was how participants defined 'impact' or 'needs' for patients with dementia and their perceived agency in being able to help to achieve this. This factor also helps to explain why the nature of the illness and the characteristics of patients and work do not align with preferences for some students; these characteristics are perceived as barriers to whether or not their (work/professional) contribution impacts positively (or not) on patients.

Rewards of making a difference

It was consistently found in SS3 that the 'rewarding nature' of working with people with dementia was often described by participants, and what this meant for preferences was explored. The rewards of making an impact were central to higher preferences for working with this patient group and key for deriving satisfaction from the work. Working with people with dementia was described as more rewarding than other patients because of their increased and complex needs and the vulnerability of the patient group, which for some made the work more satisfying when able to meet their needs. Participants felt psychosocial interventions were important for positive patient outcomes, and described positive impact on patients in non-medical terms. This expands on previous findings that a positive aspect of working with people with dementia is that it is 'rewarding', found in qualitative themes in SS2, and previous literature identified in SS1 for working with older people. This provides a novel contribution to the literature on positive factors for working with people with dementia that has not been previously explored. This factor is linked to the impact of experiences, in that experiences with people with dementia can increase students' recognition of the difference they could make to patients.

Reduced satisfaction due to lack of impact

In contrast, SS3 found reduced satisfaction due to lack of impact on patients emerged as a central category which impacted negatively on preferences. This fits with the literature found in SS1, which highlight a lack of 'sense of agency' on patient

outcomes in nurses (Gates et al., 2009), and descriptions of 'hopelessness' (Carlson, 2015) and the 'futility of care' (Bagri and Tiberius, 2010) for working with older people. This research suggests these beliefs also apply to working with people with dementia; students do not prefer working with people with dementia because they perceive a limited scope to make a difference to patients' physical health due to nature of conditions or psychosocially, due to external limitations of self or environment.

SS3 suggests that reduced satisfaction is linked to the perception that working with people with dementia is 'a different type of care' namely that is not acute or medical focused and is ambiguous, and with perceptions of people with dementia as posing additional difficulty, and environments of poor quality care.

These findings suggest two opposing views of working with people with dementia, related to higher and lower preferences and suggests that students can gain an appreciation of the impact they can make. This indicates two ways to increase interest in working with people with dementia in healthcare students. First, increasing students awareness of the significance of the contribution they can make to patients with dementia when qualified as well as the value of quality of life as an outcome equal to medical recovery, both in terms of care plans and within the healthcare setting (i.e. comfort and lowered distress). Second, through equipping students and newly qualified healthcare professionals with the tools to achieve positive patient outcomes by increasing their competency, and the organisational support and/or clinical environment to provide optimal care.

Concerning clinical environments where healthcare professionals feel able to make a difference, this is recognised as a priority, with dementia services identified as needing to be improved (World Health Organization, 2017). In the UK, commitments to improve health and care delivery for people with dementia are outlined in the National Dementia Strategy (Department of Health, 2009) and the Prime Minister's Challenge on Dementia, a programme of work that is ongoing (Department of Health, 2018). For instance, this includes a commitment to 'all hospitals and care homes meeting agreed criteria to becoming a dementia-friendly health and care setting' (Department of Health, 2018). Dementia friendly healthcare is defined as:

...the practice and organisation of care that is aware of the impact dementia has on a person's ability to engage with services and manage their health. It promotes the inclusion of people living with dementia and their carer in treatments, care decisions and discussions, with the aim of improving outcomes for the patient and carer (Handley et al., 2017, p. 2).

Several new initiatives have been used to create a more 'dementia friendly' hospital experience. A recent review of initiatives in UK hospitals outlines several interventions such as schemes to identify, and therefore support, people with dementia on admission; environmental adaptations to support orientation and comfort; specialised units; and a focus on person-centred dementia care. The use of specialist roles has also been introduced and includes dementia champions, dementia nurse specialists, and liaison teams (Handley et al., 2017).

While an improvement in dementia services, through targeted approaches such as those outlined above, has been recognised, overall many are still inadequate (Department of Health, 2018). The results in this thesis suggest a continued focus on service improvement including enhancing the therapeutic milieu and increasing healthcare professionals' ability to provide better patient outcomes, would increase preferences for working with people with dementia in these environments.

6.2.3 A different type of care

The evidence in this thesis suggests that students and newly qualified healthcare professionals perceive working with people with dementia as a different type of care; in that, it has distinct properties, which are often seen as removed from the 'norm' in healthcare, in which they either see themselves aligned to or not. These differences include its focus on holistic, psychosocial aspects rather than acute presentations or medical treatment and the ambiguity or uncertainty of practice. Also, there is some indication that the perceived value of the work, stigma, and lower prestige of the profession, may negatively influence preferences.

Preferences for medical and acute care

There was consistent evidence for a stronger positive preference for medical and acute care as being a major factor in lower preferences for working with people with

dementia. No evidence was found in SS1 in terms of dementia preferences, but this was reflected in the older adult literature; specifically, the focus of QoL in the care of older adults was perceived by those with lower preferences as a negative aspect of the work, as well as less use of technical procedures. In SS2, overall career preferences assessed quantitatively can be seen to fall into predominantly medical/acute areas. For example, the most preferred careers for nurses were medical, surgical or intensive care and the most popular subspecialty for medical students was emergency medicine, in their last years of training. Qualitatively, reasons for lower dementia preferences included stronger alternative clinical interests.

This finding might be viewed in light of previous research on working with older people and the 'hidden curriculum' (Meiboom et al., 2015a) and socialisation of nurses (Happell, 2002, Stevens, 2011) with undergraduate education over-emphasising the value of acute and technical care, for which students may internalise as being superior.

Appreciating a different type of care

For those with higher dementia preferences, there was consistent evidence for appreciating a different type of care as a factor. Limited research has previously explored the positive factors for preferences for working with people with dementia. In SS1 there were some indications that students value aspects of working with older people such as relationships with patients and complexity, this was also reflected in themes for working with people with dementia in SS2. In SS3 the perception of working with people with dementia as a different type of care was found to be central to those who have a stronger preference for working with people with dementia and associated specialties. Together this evidence suggests that students and newly qualified healthcare professionals appreciate that dementia care allows for a more holistic, person-centred approach with the aim being to increase the quality of life of patients. This was seen as a valued point of difference to other, more conventional, healthcare practices. This is another novel finding concerning the positive factors for preferences of working with people with dementia.

This dichotomy suggests students and newly qualified professionals perceive working with people with dementia as aligned with a more psychosocial model of

care and can be more drawn to or deterred from working with people with dementia, depending on how they want to practice. Working with people with dementia is appealing to those who want to work more holistically, while is a deterrent to those who prefer a more medical approach or acute focus. This indicates that to promote interest in working with people with dementia more students must gain an appreciation of this 'different type of care'.

Future research is needed to explore how to ensure this is a valued part of the curriculum and clinical practice. This may involve ensuring more prominence in the curriculum. For example, The Higher Education Dementia Network (HEDN), a collaborative group of academics in dementia education recently stated concern for dementia curricula content including how it may currently de-empathise its value to students. Recommendations included raising the profile of dementia education through appropriate and identifiable dementia leads in education, and specifying dementia education frameworks as criteria in professional bodies validation criteria, such as the NMC and GMC, which would help to standardise dementia education (Knifton et al., 2019). This would also legitimise its priority as a skill. Further recommendations include more variation in placements with an emphasis on long term conditions, older adults, and mental health. This is supported by recommendations that to increase general interest in working with older people the curriculum should be representative of the patient population, and therefore include more placements in the care of older people (Meiboom et al., 2018).

In terms of practice, the value of this type of care may be increased by the prioritisation of person-centred care practices for people with dementia within the clinical setting. For example, previous research has suggested there is a culture of care focused on acute problems in dementia in hospital admission and that negative outcomes for patients are often a result of 'a tension between prioritisation of acute care for existing comorbidities and person centred dementia care' (Dewing and Dijk, 2016, p. 106). Research has found where dementia person-centred practices are introduced, staff may perceive them as an additional task, or not a key expectation of their role (Handley et al., 2017). A review on dementia friendly interventions in hospitals concludes that to ensure the effective application of these practices, in addition to increasing competency of staff, the culture must be supportive of these practices, this may include: more allocated time for person-centred care, specifying

these tasks as a core remit of the health care professionals roles, and legitimising the of the importance of these practices by dementia leads (Handley et al., 2017).

Ambiguity and uncertainty

There was moderate evidence that lower preferences were associated with the perception that working with people with dementia was marked by ambiguity and uncertainty in practice. This was not explored or identified as a theme in SS1 and SS2 for dementia preferences, but there were some indications in the older adult literature around complexity and ambiguity; one study found that medical students who agreed that a lack of comfort with ambiguity was a barrier to pursuing geriatrics, also held lower preferences (Diachun et al., 2006b). Tolerance of ambiguity and uncertainty is a concept that has been frequently researched in the healthcare professions; one definition used in the literature is ‘the set of negative and positive psychological responses—cognitive; emotional; and behavioural—provoked by the conscious awareness of ignorance about particular aspects of the world’ (Hillen et al., 2017, p. 62). SS3 found descriptions of ambiguity and uncertainty in negative preferences for working with people with dementia. For medical students, this particularity concerned ethical and clinical decision making, and for nursing, this was in relation to the best way to approach the care of individual patients due to variability between patients and with individual patients over time. Previous research has found that doctors’ and nurses’ tolerance for ambiguity and uncertainty in practice is related to many outcomes, including career preferences and attitudes to working with patient populations (Strout et al., 2018). These findings add to the research by indicating that ambiguity and uncertainty within dementia care are associated with preferences for working with people with dementia. Tolerance to uncertainty within healthcare professionals can be conceptualised as a situation-specific state (i.e. occurs in specific practice contexts) or a trait specific quality for an individual (Strout et al., 2018). Further research should explore how tolerance to uncertainty influences preferences for working with people with dementia, including delineating the individual traits or situational traits leading to uncertainty working with people with dementia.

Stigma and prestige of the profession

One factor that is an area of future research is the prestige (or lack of it) of working with people with dementia. In SS1, it was found that considerations of prestige and subjective norms are associated with preferences for working with older people. Subjective norms in this context are the student's beliefs in society and significant others opinions on working with older people. While no sub-study in this project specifically identified prestige or subjective norms as a factor for working with people with dementia, throughout SS3 there was evidence for the general recognition by participants that working with dementia is seen as less desirable or 'other' by other students and healthcare professionals. The implication is that the understanding that the work is not desired by others, in itself, could potentially influence their career preference, as shown in for career preferences related to working with older people (Ben Natan et al., 2015, Che et al., 2018, Dunkle and Hyde, 1995). However, participants did not articulate that their preferences are influenced by how others perceive the profession or their choices, and whether this directly affects preferences was not explored. Future studies should investigate whether this contributes as a factor.

6.2.4 Impact of experiences

There is consistent evidence that positive and negative types of experiences with working with people with dementia contribute to perceptions of this clinical work and can influence preferences. There was also evidence that specific individual incidences can be positive or negative influencers. The implication of this is that it is important to understand what these are and how they influence preferences, especially concerning educational components that can be optimised. SS3 identified how experiences can impact students and newly qualified professionals through their perceptions of their confidence or competency, recognising the rewarding nature of the work when they can make a difference to a patient with dementia and gaining an appreciation for positive interactions with people with dementia.

Individual types of experiences explored as factors include pre-educational experiences, personal experiences, targeted dementia educational interventions, and placements.

Personal and pre-educational experiences

Limited evidence was found for the influence of family and pre-educational experiences on dementia preferences. The evidence in SS2 suggests that previous experience may positively influence preferences for working with people with dementia however this was limited to their first year of training, suggesting it could be more of a factor at the start of training, not at the end of the training. The qualitative results of SS3, indicate that previous experience may influence preferences by increasing competence and competency.

In relation to personal experiences of dementia, such as knowing a family member affected by dementia, for a small number of students and newly qualified healthcare professionals, this forms part of their held preferences. Evidence in SS2 and SS3 suggests it can be a negative or positive influencer, but the evidence was limited.

Placements

There is consistent evidence for the role of placements on preferences for working with dementia. Placements were not always stated as a direct influencer but were implied as to the source of perceptions and experiences. This is understandable as placements are a sizable component of training and where substantial contact with patients is gained and perceptions of roles and specialties may form. The importance of placements on the formation of preferences in general is found in the literature (Querido et al., 2016, Wareing et al., 2018). SS1 found evidence in the previous older adult literature for the role of quality placements in positively attracting students. In SS3 it suggested that specific placements help students to evaluate how a role may fit with their personal attributes and contribute to their perceptions of specialties. A novel finding from this study was the perception that students need to experience and work with people with dementia in different settings to get a balanced view of dementia care in practice.

Dementia educational programmes

There was consistent evidence for an association with participating in dementia educational programmes. SS1 identified that previous research has found that educational interventions targeted at working with older adults have been associated with increased preferences for working with older people in students

(See Table 5 for an overview). In terms of dementia preferences, participation in an aged care placement was not associated with preferences for working with dementia (McKenzie and Brown, 2014), but this was not a dementia-specific intervention. Two studies of dementia educational interventions found qualitative support of these educational programmes as a factor (Jefferson et al., 2012, Goldman and Trommer, 2019), corroborating this finding was evidence for an association with TFD quantitatively in SS2 and qualitatively in SS3.

In SS2, there was evidence to suggest that the dementia career preferences of students who had taken part in TFD were higher than students who did not take part in TFD. In SS3, possible mechanisms for the influence of TFD were suggested through reducing fears, recognising the impact of healthcare professionals, gaining an appreciation for working with people with dementia, promoting non-discriminating attitudes, and increasing interest. The implication of this is that targeted dementia placements that aim to increase, knowledge and attitudes (Alushi et al., 2015) may also have an additional outcome in shaping preferences. Specifically, with attention to increasing perceived competence as well as helping students to gain an appreciation for how they can make a meaningful impact on patients with dementia, including the importance of non-medical impact. Also, educational interventions such as TFD may contribute to experiences and placements of dementia in general; emphasise dementia care as an important skill and core aspect of their work; and expose students to working with people with dementia in different settings, which were perceived as important for preferences.

6.2.5 Perceptions of patients with dementia

Students and newly qualified healthcare professionals perceptions of patients with dementia appear influential to preferences. Perceptions identified include care challenges, the involvement of family, additional difficulty, and positive interactions.

Care challenges

There was consistent evidence for the perception of patients with dementia presenting with symptoms, behaviours or characteristics that led to care challenges, as having an impact on preferences. In SS3, this included difficulties in communication, lack of patient compliance, high risk, complexity, differences

between patients and possible aggression. Evidence for communication difficulties as a factor was also found in the SS2 qualitative research and the previous literature in SS1, both for working with people with dementia (McKenzie and Brown, 2014) and older adults. SS3 found that these challenges were not cited as a direct factor for negative preferences, but that they were related to (or caused) many other factors which were found to be a deterrent. For example, care challenges related to competency in feeling ill-equipped to respond to patients, and difficulties in communication and differences between patients contributed to the negative perception of ambiguity and uncertainty in practice. These care challenges also contributed to the perception of additional difficulties.

Additional difficulty

This perception that working with patients with dementia posed an 'additional difficulty' compared to other patients was found as a distinct factor, which while not found in SS1 or SS2 was consistently and frequently found in SS3. The wider literature suggests that healthcare professionals find working with people with dementia more difficult than working with other patients and can affect staff motivation when working with people with dementia (Cheloni and Tinker, 2019). Participant's accounts in SS3 suggest this is also a factor in preferences and therefore has been identified as a novel factor influencing preferences for working with people with dementia.

Together these two factors, care challenges and additional difficulty, suggest that practical ways to reduce these challenges should be considered. This could include further training to increase skills in these areas, reduce the perception of symptoms or behaviours as challenging or changes in practice to reduce barriers to providing care.

Positive interactions

A consistent positive factor was that of positive interactions with patients with dementia and older adults. In SS1, no evidence was found in relation to dementia, as positive factors have not previously been explored. In the literature exploring preferences for working with older people, positive aspects of the work associated with preferences included enjoying interactions and building relationships with

patients. In SS2, enjoyment and interest for working with people with dementia were identified across qualitative themes. In SS3 this was the most consistent positive aspect of working with people with dementia in general and included pleasant conversations, enjoyment, disposition of patients and inter-generational learning. This contributes to the understanding of the attractions of the work and offers a positive factor to build upon. It suggests that exposure to people with dementia, in a positive environment is needed to allow students to gain an appreciation of how interactions can be enjoyable.

Involvement of family

There was limited evidence for the perception that the patient's family are involved in care being associated with dementia preferences. No evidence was found in SS1 and SS2. In SS3 participants described it could be one of the additional difficulties related to working with people with dementia but also reflected on how it was part of its holistic focus and related to how it was a different type of care.

6.2.6 Career characteristics

These relate to aspects concerning professional or practical aspects of the job. Factors include: challenges due to systems and work environment; variety; professional development; the emotional nature of the work; team environment; and lifestyle considerations.

Challenges due to systems and work environment

Challenges due to systems and work environment was a consistent negative factor found in SS1, SS2 and SS3 for dementia preferences. This includes organisational and resource issues, and some evidence for the physical demands of the role in nurses. In SS3 the views of working with people with dementia in particular environments related to the difficulty in caring for patients with dementia and reduced quality of care patients receive, which impacted their preferences for working with people with dementia. This implies that preferences are associated with perceptions of the characteristics of the care environment and aspects of the work, not just characteristics of the patients or the type of care they perform. Participants' recognition of difficult work environments, particularly in hospital

settings, reflect the reality of practice documented in the literature. There is consistent evidence that people with dementia receive poor care in hospitals (Mukadam and Sampson, 2011, Alzheimer's Society, 2009, Dewing and Dijk, 2016, Alzheimer's Society, 2016) and this is a demotivating factor in the staff caring for people with dementia (Cheloni and Tinker, 2019). Furthermore, previous literature has found that nursing students in the UK have been deterred from working with older people due to witnessing clinical practice that contrasts the holistic care practices they are taught, and wish, to practice (Duggan et al., 2013). This indicates that improving attitudes to people with dementia, increasing competency via training or alternating perceptions of the work may not promote positive preferences in isolation, but that working conditions and patient care needs to be addressed in practice; healthcare professionals want to work in care environments where they can be effective in meeting patients' needs.

In terms of systemic challenges, previous research has found that limited time for patient care and staff shortages are contributing factors to poor outcomes in hospitals for people with dementia (Dewing and Dijk, 2016) and that increasing training alone is not enough to change care practices of staff due to barriers of culture and resources (Handley et al., 2017). A recent study on staff experiences of working with people with dementia on a care of the elderly ward in the UK found that nursing staff felt unmet needs of patients are often the result of their limited capacity due to organisational factors (Oliver, 2019). Therefore effective, dementia friendly environments that can respond to needs of people with dementia include, in addition to adequately trained staff: suitable environments adapted to needs of patients; non-detrimental practices, such as the use of inappropriate use of antipsychotic medications; more time for direct patient contact; and adequate resources (Handley et al., 2017). Programmes of work that may improve this in the UK include the NHS workforce strategy to improve the numbers of healthcare staff and conditions in which they work (NHS England, 2019, NHS England, 2020) and specific initiatives aimed at improving dementia care such as those in response to the commitments in the Prime Minister's Challenge (Department of Health, 2018). One example would be more thoughtful consideration of commissioning of services in relation to delivering recommended dementia pathways (National Collaborating Centre for Mental Health, 2018) for maximum effectiveness of resources (Older People's

Mental Health and Dementia and NHS England, 2017). This research suggests this work will be important to draw more professionals to work.

Variety

There was moderate evidence to suggest how students viewed dementia care in relation to the variety of the work was a factor in dementia preferences. SS1 identified that previous research on working with older adults found that evidence for lower preferences was associated with the perception of the work as 'boring and unchallenging' which encompassed monotonous views of the work. One study found that lack of diversity was a barrier in pursuing work with people with dementia (McKenzie and Brown, 2014), but this was not found in SS2. In SS3, the variety was not volunteered as a central factor in dementia preferences. However, in general, variety in work such as the opportunity to work with different patient groups and presentations was consistently valued and a lack of variety was a reason not to specialise. Uniquely, geriatric medicine was described as providing variety due to being a generalist medical specialty.

Professional development

Professional development was a consistent factor, with student and newly qualified nurses (but not medical students/trainee doctors) perceiving working with people with dementia as not being conducive to career advancement. Identified in SS1, previous research suggests nurses perceive a lack of professional status as a barrier in dementia care (McKenzie and Brown, 2014), and concerns of professional development is frequently cited as a factor in the literature concerning working with older people. In SS2 nurses cited that they would rather not work with people with dementia when they qualify due to wanting to seek new experiences. In SS3 this was also found with participants preferring to work in areas they felt they could develop their skills in first and stating that they may work with people with dementia in the future. This suggests that working with people with dementia, or related areas, while perceived as challenging or difficult is not the type of work to build important and diverse skills to succeed or progress professionally as nurses, and would be a more suitable role for their careers in the future. Previous research has found that higher preferences for working with older people were associated with the potential opportunity to pursue a Clinical Nurse Specialist role within older people's services

(Haron et al., 2013). Together, this suggests that professional opportunities for dementia need to be clarified and presented positively to students. For example by promoting and offering opportunities for advance practice in dementia care or older people's care.

Within this research, nurses and medical participants did not mention pay at any point in the qualitative work in regards to particular specialties or working with people with dementia in general. This may be because the UK has relatively structured pay scales in the NHS, compared to literature based in other countries that have found financial rewards a consideration in career preferences for older people (Abbey et al., 2006, Diachun et al., 2006b, Shen and Xiao, 2012, Bagri and Tiberius, 2010, Curran et al., 2015, Lea et al., 2016) and people with dementia (McKenzie and Brown, 2014). Alternately participants may not have volunteered concerns with pay during the qualitative interviews due to the influence of social desirability, or reflect that career preferences related to dementia are more intrinsically motivated (Chenoweth et al., 2010). Previous research, in geriatrics, suggested income may not be a strong deterrent but could be used as an incentive (Diachun et al., 2006b). Future research should explore whether financial incentives could be a factor in students' evaluation of their career preferences related to dementia.

Emotional nature of work

In SS1, one study was identified that found evidence that emotional demands were a barrier to working with people with dementia (McKenzie and Brown, 2014). This was also reflected in the literature on preferences for working with older people, in that it can be psychologically challenging and fear of death and dying may act as a deterrent. In SS2 and SS3, there were limited accounts of emotional demands; in SS3 emotive language used by participants (e.g. 'a struggle' and 'difficult to come to terms with'), but not specifically as a reason for their preferences. Therefore the evidence in this thesis does not suggest emotional demands as an influential factor in preferences, but for some students and newly qualified healthcare professionals, the work is emotive.

Lifestyle factors

There was no evidence for lifestyle factors influencing dementia preferences, these were explored in the literature of career preferences for working with older people but with very limited evidence found and none regarding dementia preferences. In SS3 some participants mentioned lifestyle factors in overall preferences. Nurses considered shifts and settings in terms of individual jobs and doctors considered the length of training pathways, but these were not identified as a unique factor related to dementia or related specialties.

Teams

There was limited evidence for the impact of teams on preferences for dementia. A novel but minor theme was found in SS3 that students valued a good team environment, and perceived those who specialised in working with people with dementia, or older people care, as generally being good team members who were passionate and supportive. However, this was not a driver of preferences. In SS1, evidence that mentors could be influential for preferences related to working with older people, but the role of mentors did not emerge in this study.

6.2.7 Contextual factors

Time

There was consistent evidence for a temporal element to preferences in that they are not stable and amenable to change. Specifically, evidence from SS1 and SS2 suggests preferences for working with people with dementia may decrease during training. In SS3 participants were able to identify that their preferences had changed and why, both positively and negatively. In SS2 and SS3 nurses identified working with people with dementia as something that would not be of interest now, due to wanting to develop skills in other areas, but would be something to pursue in future. These results signify that the role of education is important to address, as they suggest undergraduate training may be a deterrent for dementia preferences, as has been previously documented as a concern regarding preferences for working with older people (evidenced in SS1). These results also suggest that preferences can be positively influenced, as they are amiable to change, by the factors outlined in this framework.

Context

There was also consistent evidence for preferences to vary depending on the context of the care environment, role and setting of working with people with dementia. This was not found to be previously explored in SS1, while some studies looked at individual contexts, the majority did not make a distinction and did not compare working with older adults between different settings. In SS3, this was explored further and indicated that there were differences between preferences directed to dementia-related recognised specialties versus general clinical interest in dementia. Furthermore, differences were found in clinical interest and recognised specialties, depending on the role and setting. Of note to this thesis is the finding that working with people with dementia within hospital settings is less preferable than working with people with dementia in the community. This appears to stem from perceived barriers to meeting patients' needs and the work environment, as previously suggested service improvement is integral to making this environment more appealing.

This chapter has presented a conceptual framework for understanding the factors associated with preferences for working with people with dementia in healthcare students. It has summarised the evidence for seven factors and their implications. The next chapter concludes the thesis by presenting a summary of the thesis and its contribution

7 Chapter 7: Summary and conclusion

The goal of this thesis was to develop a conceptual framework for preferences for working with people with dementia. The conceptual framework was developed from the three sub-studies of this thesis and has been presented in chapter 6. The purpose of this chapter is to provide a summary of the overall findings from the thesis, to outline recommendations, to identify the strengths and weakness of the thesis and to present the novel contribution to knowledge.

7.1 Result summary

The overall aim of the thesis was to identify and explain what factors influence undergraduate and newly qualified doctors' and nurses' preferences for working with people with dementia and to develop a conceptual framework for how these factors impact (positively or negatively) upon preferences. This was addressed within this sequential mixed methods programme of research; a systematic review has been presented in chapter 3 (Hebditch et al., 2020), a longitudinal survey of preferences is presented in chapter 4 and a qualitative grounded theory study is presented to in chapter 5. The integration of these results into a conceptual framework is presented in chapter 6. An overview of the objectives and contribution of each sub-study is provided in Table 35 below.

Table 35: Summary of thesis results

Objective	Method, data and analysis	Results
<p>SS1 To identify and consolidate the existing literature on factors associated with career preferences of medical and nursing students specifically in relation to dementia and to older adults generally.</p>	<p>Systematic review</p> <p>62 Papers (+5 in review update)*</p> <p>Narrative synthesis</p>	<p>Limited literature specifically investigating preferences for working with people with dementia (n=3). In addition, 11 papers discuss dementia in the context of preferences.</p> <p>Potential factors associated with preferences for working with people with dementia include gender, year group, age, characteristics of the work (such as communication and emotional challenges), educational interventions, perception of patient's illness, and the role as healthcare professionals facilitating cure rather than quality of life.</p>
<p>SS2 To assess student career preference of undergraduate nursing and medical students, in relation to changes over training, preferences for working with people with dementia, and identify the factors related to these preferences.</p>	<p>Longitudinal Survey data</p> <p><i>Nurses</i> n= 488 n= 110 open text responses</p> <p>Linear regression and content analysis</p> <p><i>Medical</i> Part A n=352 Part B n=205 n= 90 Open text</p> <p>Logistic regression and content analysis</p>	<p><i>Nurses</i></p> <ul style="list-style-type: none"> ● Preferences for working with older adults and working with dementia decreased during training and working with people with dementia was an unpopular career choice. ● Preferences for working with people with dementia were positively associated with the experience of knowing someone with dementia, knowledge, attitudes and taking part in TFD. Only attitude scores (MCRS) were significantly associated after accounting for other variables at both time points. ● Level of preparedness, the challenging nature of work and difficulty with patient communication were cited by students as reasons for low preference. <p><i>Medical</i></p> <ul style="list-style-type: none"> ● The results were indicative of low preferences in related specialty choices but high preferences of wanting to work with people with dementia in general were found. ● Preferences for wanting to work with people with dementia were positively associated with TFD and female gender. ● Negative and positive aspects of the work were given as reasons for preferences. However, the majority of reasons given by students centred on the prevalence of dementia.

Objective	Method, data and analysis	Results
<p>SS3 To explore the factors that influence career preferences in relation to working with people with dementia; to understand how these factors relate to students' preferences and how they influence decisions and perspectives on their careers.</p>	<p>Qualitative Individual interviews n=27 Grounded theory</p>	<p>Eight main categories:</p> <p>Nature of preferences</p> <ul style="list-style-type: none"> • Nature of preference related to dementia • Nature of wider preferences <p>Factors related to preferences for working with people with dementia</p> <ul style="list-style-type: none"> • Making a difference • Alignment with personal characteristics • A different type of care • Perceptions of people with dementia • Work environment • Care environment
<p>Integration To synthesise the results from each sub-study to develop a composite conceptual framework.</p>	<p>Mixed Method-Grounded Theory Results from SS1, SS2, & SS3 Joint Display</p>	<p>Seven overarching factors:</p> <ul style="list-style-type: none"> • Student characteristics and perceived alignment with attributes • Impact of experiences • Making a difference • A different type of care • Perceptions of patients with dementia • Career characteristics • Contextual factors: time and; care environment, role and setting

*An update to the systematic review can be found in Appendix U

7.2 Recommendations

Several implications have been outlined previously in SS1, SS2, SS3 and the resulting conceptual framework. This section provides a summary of these implications and the subsequent recommendations for education, practice, and policy and future research.

7.2.1 Education

The conceptual framework has outlined factors that are important for the establishment of preferences for working with people with dementia, both generally as a clinical interest and for related recognised specialties. This has implications for how preferences are formed and therefore how they may be influenced (as outlined in chapter 6). Given the need to increase the numbers of generalist healthcare professionals with an active interest in dementia and dementia specialists, this leads to recommendations to stimulate positive preferences in working with people with dementia in healthcare students, firstly:

- I. Undergraduate training is identified as an influential, possibly detrimental, time for the development of preferences for working with people with dementia. HEIs and education commissioners should review their contribution to influencing students when considering their dementia and wider curriculum content.

Specific recommendations to the curriculum include:

- II. Inclusion of focused dementia education, including developing skills and confidence specifically in managing care challenges such as difficulties in communication.
- III. Developing the value and importance of working with people with dementia. Challenge the view of the work as outside their normal remit, promoting a holistic focus, and enhance students' understanding and appreciation of the contribution they can make to patients with dementia.
- IV. A clearer definition of roles and healthcare providers responsible for dementia care in practice but also facilitate students' awareness and

understanding of career options that relate to dementia. Exposure to these clinical areas is necessary for students to evaluate fit with their values.

- V. Ensuring access to relevant practice placements including a balanced view of working with people with dementia through working in different settings.
- VI. Encouraging and developing 'talent' in those already showing an interest or enhanced skills in dementia care.

The results of this thesis suggest that dementia educational programmes may influence preferences for working with people with dementia and offer another possible positive outcome of such programmes in addition to increasing positive attitudes and knowledge. Therefore this thesis recommends:

- VII. The consideration of targeted dementia educational programmes as a way to meet dementia curriculum requirements in undergraduate education and potentially increase preferences for working with people with dementia.
- VIII. When designing dementia educational programmes, to maximise their potential and increase positive preferences, incorporate elements of the curriculum recommendations listed above.
- IX. Specifically for the TFD educational intervention, while the results suggest a positive influence on preferences, some recommendations to enhance the programme are indicated. These include additional consideration of these elements: the inclusion of reflective practice or supplementary sessions that help students relate their learning to clinical roles that work with people with dementia; understand dementia care pathways/specialist roles; and emphasise how healthcare professionals can make a difference to patients' lives within these contexts.

These recommendations, concerning preferences, fit with and expand on current recommendations for undergraduate curriculum in dementia. While dementia education is mandated, it is suggested that it may be inconsistently delivered across HEIs (Knifton et al., 2019). These findings add further support for improved dementia education.

Several newly developed dementia educational programmes have been trialled as ways to incorporate education requirements with varying evidence of impact (Alushi et al., 2015). In the UK, recently published examples include Sliding Doors (Dingwall et al., 2017), Dementia Friends (Mitchell et al., 2017), and the dementia communication training intervention based on the VERA Framework (Naughton et al., 2018) as well as the TFD programme (Banerjee et al., 2017). The initial evaluation of the TFD programme has established positive outcomes in students. This includes improvements in attitudes and knowledge, both measured quantitatively (Banerjee et al., 2020) and qualitatively with students describing gains of relational learning (gaining experience in the context of a relationship and real life setting), insight and understanding, challenging attitudes and stigma, and enhanced dementia practice (Daley et al., 2020). The advantages of a longitudinal community model appear to be centred around the transformative nature of these placements in allowing them to see the ‘whole person’ including their lives and families, and emphasised person-centred practice and the importance of engaging with the person rather task-based practice (Grosvenor et al., 2020). The results of this thesis add further support to the utility of TFD; these results suggest that such interventions have the potential to influence preferences as a secondary outcome. Given that further research is needed to evaluate the impact of dementia educational programmes (Alushi et al., 2015), career preferences should be evaluated as an outcome in addition to attitudes, knowledge and confidence.

As well as developing healthcare students’ competencies in dementia, this thesis has several recommendations concerning wider implications for the curriculum. These recommendations are in line with research calling for a more age-friendly curriculum (Meiboom et al., 2018, Garbrah et al., 2017). A recent study looked at the curriculum elements of undergraduate medical students to stimulate interest in geriatrics and working with older people more generally (Meiboom et al., 2018) and made five key recommendations:

- Patient-centeredness as an underlying concept (in the curriculum)
- A substantial amount of geriatrics integrated in the curriculum (to ensure the curriculum is representative of the patient population)

- Geriatrics, also in separate education or at least a clerkship, presented as intellectually challenging and emotionally appealing
- Positive role models
- A clear presentation of future professional perspectives.

The top four most important individual items were found to be: continuous exposure to geriatrics throughout the whole curriculum; a balanced curriculum, which is representative for medicine; give insight in the limited curative ability of medicine; and promotion of the field by prestigious individuals and by medical specialists. The results of this thesis support many of these general recommendations and specify elements relevant to preferences for working with people with dementia. First, it mirrors its emphasis on a balanced curriculum. Experiences of working with people with dementia are important for preferences and as dementia is a common co-morbidity in older adults seen in several healthcare settings, it should be proportionate representation in the curriculum. Specifically for dementia, this research indicates that this experience should take place in a range of settings. Second, it echoes the need for more emphasis on person-centred care practices, highlighting limitations of medicine and the need for the prominence of working with older people with dementia in the curriculum. For dementia, these aspects are integral as they are central aspects of this type of care, and not viewed as a core part of their practice. Third, in regards to future professional prospects, this study suggests students should be aware of career opportunities, as well as an understanding of the key professionals responsible for the management of dementia.

7.2.2 Practice and policy

Results from this thesis suggest that students' negative perceptions of working with people with dementia are based on practice environments they experience, and perceive as being less attractive when working with people with dementia. While some factors can be addressed through education, others are inherently attributed to the healthcare service environment. Therefore, practice recommendations include:

- X. The continued improvement of services for people with dementia, which allows healthcare professionals to work in an environment that they feel confident and able to deliver quality dementia care.

In the Prime Minister's Challenge on Dementia several commitments are outlined in relation to improving health and social care services for those affected by dementia (Department of Health, 2015), which are reflected in the NHS Five Year Forward Review (NHS England, 2014) and the NHS Long Term Plan (NHS England, 2019). Targets include: dementia friendly hospitals and care homes; improved diagnostic and post-diagnostic services; and a named healthcare professional responsible for care coordination. This includes the delivery of best practice (National Institute for Health and Care Excellence, 2018) and consistent implementation of the dementia care pathway for diagnostic and post diagnostic support (National Collaborating Centre for Mental Health, 2018).

However, these goals have not yet been adequately reached (Department of Health, 2018) and these results appear to mirror this in descriptions of students' accounts of their experiences working within dementia care. Also, the key to the success of services will be the effective utilisation of limited NHS resources (NHS England, 2019), at the time of writing this is more imperative due to strains on the healthcare system due to the COVID-19 pandemic and consequences of the UK leaving the European Union. Furthermore, due to the COVID-19 pandemic and the emerging required adaptations to services and unknown long-term impacts on dementia care, service delivery and meeting patients' needs may require further ongoing development. This thesis suggests that work to improve services will be important to attract students who want to work in an environment that can deliver quality care for patients and does not have barriers to deliver this such limited resources.

One of the key strategies to improve dementia care that has been identified is the use of healthcare staff acting as change agents to innovate and implement new practices to improve dementia care. This includes staff with expertise and authority to offer guidance or take responsibility to implement new working practices (Handley et al., 2017) and specific schemes such as dementia nurse consultants and dementia champions (Ellison et al., 2014, Wilkinson et al., 2016). Therefore this thesis argues a dualistic benefit, namely that increasing preferences in student and

newly qualified healthcare professionals may help to produce interested and engaged professionals to drive through changes in dementia care; improved services may, in turn, attract more interested professionals. HEIs are well placed to support emerging talent that could work as change agents.

No direct policy implications are indicated from this research but its findings are supportive of the importance of the improvement of services and education practices that have already been identified for action. However as the Prime Minister's Challenge on Dementia 2020 has reached its end, a review of its final impact is outstanding. Yet the COVID-19 pandemic and the exit of the UK from the European Union may prevent further resource allocation to this programme of work. A clear policy on dementia services post 2020 is lacking. As improving the dementia care workforce will be a continued need, this thesis has implications for education and practice that could be considered in ongoing work.

7.2.3 Future research: gaps and future work

This thesis has implications for improving our understanding of the concept of preferences, recommendations include:

- XI. The development of validated measures to assess preferences of healthcare professionals for working with people with dementia, as a clinical interest or towards relevant specialties.
- XII. Future research that measures attitudes to dementia and career preferences should aim to provide a description of the content of attitudes to dementia that are related to preferences.

Further research is indicated for some putative factors, including:

- XIII. Future quantitative research should explore the associations indicated in this study. This includes age, gender, empathy and tolerance to ambiguity and uncertainty. This could include whether there is a moderating influence of age.
- XIV. Future qualitative work should be conducted to understand cultural contexts. Including how cultural backgrounds influence perceptions of working with people with dementia.

- XV. Prestige and subjective norms should be investigated in relation to preferences for working with people with dementia.
- XVI. This thesis was not able to assert the character or personality traits of those who may have stronger preferences for this work. Future research could look at the role of personality or character traits that have the potential to be considered in recruitment, such as tolerance of ambiguity, or those possibly related to the appreciation of a biopsychosocial approach to healthcare.

7.3 Ethical considerations

Ethical integrity has been considered throughout and key reflections are presented in this section. Firstly, participants in SS3 did not receive any benefits from taking part in this study and required them to give up their own time for participation in the project. This was at a particularly busy time during their first two years post qualification. This was minimised as much as possible by being flexible around their schedule and ultimately lead to phone interviews being preferred. Furthermore, the burden to participants was reviewed during the onset of the COVID-19 pandemic; a decision was made to stop recruitment as it was deemed unreasonable to make this request of healthcare professionals during a time when they may already be strained.

Second, students may have felt a sense of duty to take part in SS3 due to taking part in the TFD evaluation research during their undergraduate training and previously expressing they would be willing to be approached in the future. Therefore although the consent procedure was distinct for this phase of work, this connection may have led to a perceived expectation. Medical students were also sent an introductory email by JW, this was felt to add credibility to the research invitation email, but as the Director of Undergraduate Teaching, students might have perceived pressure. However, after the introduction email, the invites were sent by the doctoral researcher, who would not be well known to the students, and therefore it was clear JW was not involved in this process and would not know who took part.

Lastly, during the qualitative fieldwork newly qualified healthcare professionals consistently outlined examples of poor practices in dementia care and expressed concern that patients with dementia needs were not being met. The examples

provided did not require action due to the lack of immediate danger. However, they were uncomfortable accounts and reflect widespread concern for current dementia services (Alzheimer's Society, 2016). While this thesis concerns career preferences, suggesting that the needs of patients being met are a positive influencer for preferences, central to this research is the fundamental belief and value that services should be inherently meeting patients' needs. Unfortunately, these results confirm that this frequently does not happen in practice, and therefore reinforces the obligation of services, commissioners and education and training providers in their duty to promote and deliver adequate dementia services.

7.4 Strengths and limitations

A review of the strengths and limitations are presented for each sub-study in its corresponding chapter, this section presents a review of the strengths and limitations of the overall thesis, with consideration of the components concerning the conceptual model and thesis design.

7.4.1 Strengths

There are four main strengths of this thesis.

The first strength of this research is that it is the first study to address a significant gap in the literature, namely the preferences of students and undergraduate professionals in relation to working with people with dementia. It is also a timely contribution to the literature given the recent changes in undergraduate education (Department of Health, 2013), including the ongoing development and implementation of undergraduate dementia educational programmes (Alushi et al., 2015) and the NHS workforce review (NHS England, 2019). The implications of this research should inform ongoing developments in education.

However, it must be noted that, during the last year, after the integration of these results, the landscape of healthcare education and clinical practice has rapidly changed due to the COVID-19 pandemic. Including the switch to online learning for undergraduate students and the revision of service delivery for healthcare. It has been acknowledged that people with dementia are a particularly vulnerable patient population to both the COVID-19 virus and its wider societal implications (Brown et

al., 2020). How this will affect training, practice and career preferences for working with people with dementia in the long term is uncertain. One speculation is that some of the difficulties already identified by students may be amplified, resulting in a reduction of preferences for working with people with dementia.

The second strength of this thesis is the advantage of using mixed methods in meeting the aim of the thesis. This has been achieved in two ways, firstly the sequential nature of the study allowing the use of connecting and building methods of integration (Fetters et al., 2013) and secondly and most importantly, using multiple sources of evidence to build a comprehensive conceptual framework.

In terms of connecting and building, these methods of integration have contributed in several ways. For instance, sampling students from the survey data in SS2 for the qualitative study in SS3 enabled some of the factors found in SS2 to be expanded and enabled students to be sampled based on previous preferences and demographics to include a variety of views. Also, the first phase of work (SS1 & SS2) helped sensitise the researcher to the topic and allowed the final qualitative study to be informed by the previous findings (see overview in Table 28).

In relation to creating the conceptual framework, the inclusion of both quantitative and qualitative components has allowed a comprehensive exploration of the factors associated with preferences for working with people with dementia, as a topic previously not explored this has contributed to our understanding in different ways. The quantitative results allowed associations to be verified while the qualitative work has expanded and enlightened why the factors are important to the students. Combining these sources has helped to explore the strength of evidence by the confirmation or dissonance of sources as well as the expansion of meaning. For example, a strength of SS3 is its explanatory power. Previous research, including SS2, only analysed brief statements included in surveys of students concerning reasons for preferences for working with people with dementia whereas SS3 used in-depth individual interviews. SS3 revealed a deeper explanation for previous factors identified as reasons for preferences, such as what it means for the work to be 'rewarding'.

Third, the composite framework is further strengthened through the exploration of factors associated with preferences for working with people with dementia using substantial data sources. The systematic review was rigorous and broad to ensure all relevant studies were included. In SS2 a large sample of data was analysed (n= 840) collected from four HEI sites. Detailed interviews in SS3 were included in the qualitative analysis (n=27).

Finally, consideration of quality and validity has been prioritised throughout this research. Firstly, for its component sub-studies; all quantitative and qualitative methods are specified with consideration of validity and rigour. Appropriate support was sought in both an experienced qualitative researcher and statistician, this included supervision throughout SS3 which aided rigour in the analysis. Second, for the integration and interpretation; the methods of integration and interpretation are detailed and transparent which is highlighted as a priority in mixed methods in health research (O'cathain et al., 2008). Specifically, the process of synthesising the conceptual framework included a comprehensive account of the data used (see section 6.1.3 and Appendix V), with a clear description of how the data were evaluated from each source to reach the conclusions presented (see section 6.1.3 and Appendix W). The use of GT in mixed methods is a growing methodological field (Creamer, 2018). The methodological literature was consulted and reviewed in section 2.2. A limitation found by the doctoral researcher is the lack of procedural guidelines to follow for methods of integration for MM-GT, however, MM-GT researchers promote flexibility and encourage the advancement and development of new protocols (Johnson and Walsh, 2019). This thesis takes a novel approach using a systematic review and quantitative and qualitative research to produce a conceptual framework and adds to this methodological literature. In terms of consideration on quality and validation in the development of MM-GT, the checklist produced by Guetterman et al. (2017) was consulted and how this thesis fulfils the criteria is outlined below in Table 36.

Table 36: Best practice for MM-GT checklist

Best practice for Mixed Methods–Grounded Theory checkpoints	Evidence in the thesis
Read and cite appropriate mixed methods methodological literature	A summary is presented in the methodology chapter 2 section 2.1. Key references include Fetters et al. (2013), Creswell and Clark (2017) Bazeley (2017).
Read and cite appropriate grounded theory methodological literature.	A summary is presented in chapter 2, section 2.2. Key references include Charmaz (2006).
Describe the reason for using mixed methods and specify which design.	The use of sequential mixed methods design is outlined in chapter 2, section 2.1. The rationale for mixed methods is in section 2.3.
Ensure methods match the research question from both mixed methods and grounded theory perspectives.	The research questions relating to each sub-study and methods are outlined in each corresponding chapter i.e. chapter 3, chapter 4, and chapter 5.
Describe the reason for using grounded theory and specify which approach.	Rationale for grounded theory and the constructivist approach to GT (Charmaz, 2006) is presented in chapter 2, section 2.3
Clearly identify the mixed methods procedures being used.	Types of integration are outlined in chapter 2, section 2.1.1, detailing the integration within the design, including connecting, building and at interpretation.
Clearly identify the grounded theory procedures being used.	Chapter 5 outlines GT procedures used i.e. constant comparison, memo writing, and theoretical sampling.
Employ mixed methods legitimisation strategies to address potential threats to validity.	Strategies include: each study individually evaluated, the integration included consultation with a 2 nd reviewer, and sample from SS3 drawn from SS2 for generalisability (Onwuegbuzie and Johnson, 2006).
Employ strategies for validating the grounded theory findings.	Rigour in the analysis is outlined in chapter 5, section 5.2.8. Including ongoing academic supervision and fieldwork notes and consideration of reflexivity.
Use standards for evaluating quality of the mixed methods components.	The criteria used in O'cathain et al. (2008) for assessing quantitative, qualitative, integration and inferences have been referred to in order identify and discuss strengths and limitations for each sub-study (sections 3.4.2, 4.5.4, 5.4.2) as well as for the conceptual framework (section 7.4). The thesis has also adhered to their Good Reporting of A Mixed Methods Study (GRAMMS) checklist.
Use standards for evaluating quality of the grounded theory components	Reference to Charmaz's criteria of credibility, originality, resonance, and usefulness (Charmaz, 2006). Outlined in 5.2.8.

7.4.2 Limitations

There are five main limitations to note.

First, while this study is a comprehensive exploration of the factors associated with preferences or working with people with dementia, it is not exhaustive. The factors in the framework are limited to only what was previously explored in the literature and were able to be explored in this programme of research. While the statistical analysis in SS2 was limited to only the data, and therefore outcome measures, previously recorded, SS3 allowed an open exploration of preferences. This means SS3 had the potential to include all of the factors of importance to students. However, it is acknowledged that not all factors may be volunteered or consciously available to students and therefore are not able to be explored qualitatively, for example, characteristics of the participants themselves. As shown in the literature on preferences for working with older people, factors are complex and wide-ranging, this framework represents a first attempt to conceptualise and bring together the factors associated with preferences for working with people with dementia, but further research is warranted.

Second, this framework includes factors associated with preferences for working with people with dementia and suggests links between some factors. However, it does not establish causal relationships with preferences or moderating relationships between factors. This is an area of future study that this conceptual framework helps to provide a basis for. It should also be noted that the findings used for the framework included significant associations only and did not take into account whether potential confounding variables were tested. Furthermore, this framework addresses factors related to the preferences of students and newly qualified healthcare professionals and is not able to infer how this affects their care practices towards people with dementia or their ultimate carer choice. However, exploring preferences post qualification adds to the credibility of how their preferences are influencing choices.

Third, this framework was created inductively from the results of the previous three sub-studies, including grounded theory qualitative work. It was created through systematic extraction as documented and included cross-validation with a second reviewer adding credibility to the findings. However, the role of the researcher in

integration must be acknowledged and alternative conceptualisations could have been made.

Fourth, there are limitations in each of the sub-studies, SS1, SS2 and SS3, which contribute to the validity of the framework. The strengths and weakness of each sub-study are outlined in each corresponding chapter, but most importantly this includes:

- I. **Generalisability:** the main research (SS2 & SS3) was undertaken in the UK context, specifically in HEI sites mainly in the south of England. While it incorporated the wider global literature from SS1 into the resulting framework some of the conclusions drawn may be more applicable to UK contexts. As the nature of patients and the structure of healthcare systems are generally comparable globally, especially in high-income countries, these findings will be of relevance. However, caution is needed when generalising across countries.
- II. **Sampling:** the sample for SS2 and SS3 included participants who had either taken part in TFD or did not and formed a control group. However, all participants took part in the Time for Dementia research project, this may have introduced bias into this research; this sample is mainly representative of a group of students in which their university may have increased visibility of dementia in their curriculum. Also, response rates were not able to be calculated for all samples and large dropout rates in SS2 may have introduced bias.
- III. **The validity of measures:** as has been noted as an area of future work, the measures of preferences used in this study were based on non-validated measures or those developed not in the UK. These measures were selected at the time of the conception of the TFD evaluation and therefore generated the available data for this study. A dementia question was added later to medical students for this study (SS2 part 2), as no dementia relevant question was previously included. There is a need for a validated measure of preferences for working with people with dementia. For this study, the open text questions included with the measures allowed for some understanding of the credibility and face value of the items in terms of preference, and the SS3 data added validity due to exploring preferences in detail with participants.

Fifth, this thesis took a broad approach to dementia preferences in terms of the areas defined as related to working with people with dementia in both clinical interest and recognised specialties. It also included medical and nursing students. It did consider at multiple points the varying context and differences between medical and nursing students and was sensitive to this. However, a more focused approach may have led to more depth. For example, only exploring nursing students in relation to working with people with dementia in a single setting, such as the hospital, may have provided a more concentrated understanding of preferences towards that context. Also, at points, it was difficult to reconcile the differences between medical and nursing students into a coherent picture. However, the advantage of this broader approach is that the implications are more applicable to healthcare education and preferences in general. This has utility for dementia education programmes aimed at taking a multi-disciplinary approach as is common in practice, such as TFD.

7.5 Thesis contributions

The results of this thesis have contributed to the understanding of student and newly qualified doctors' and nurses' preferences for working with people with dementia and the influencing factors. It makes a novel addition to the literature, the specific contributions are:

I. The conceptualisation of 'preferences for working with people with dementia'.

This is the first study to outline a definition of preferences for working with people with dementia in nursing and medical students.

II. Identifying key factors influencing and associated with preferences for working with people with dementia in students and newly qualified healthcare professionals.

Factors influencing preferences are complex and interlinked, this represents the first study to conceptualise this for preferences of student and newly qualified healthcare professionals for working with people with dementia. This is also the first to explore dementia preferences and factors in the UK as well

as investigating positive factors (in contrast to negative factors) associated with higher preferences for working with people with dementia.

III. Evaluation of the role of a dementia educational programme, TFD, as a factor in preferences for working with people with dementia.

These findings add to the limited literature on the evaluation of dementia education programmes and career preferences. It is the first to assess the contribution of a UK intervention, TFD, on student preferences.

IV. Identification of unique aspects of working with people with dementia that may contribute to low preferences for working with older people

This thesis identified aspects of working with people with dementia that contribute to low preferences, that are distinct from factors associated with working with older people. This includes unique challenges related to additional difficulty, type of work, making a difference, and how making a difference and patients' needs are defined for people with dementia.

In addition to the conceptualisation of preferences and the factors associated with these preferences, there are wider contributions of the thesis:

V. Identification of a paucity of research exploring dementia preferences in students, and none previously in the UK.

The systematic review identified only three studies that had previously explored preferences for working with people with dementia in healthcare students. This study represents a further advancement to this literature but highlights the need for more.

VI. Contributed to an understanding of the popularity of working with patients with dementia within the UK.

This research (SS2) is the first to explore the popularity of working with people with dementia in healthcare students in the UK. Working with patients with dementia was an unpopular career choice for nurses, and for medical students, the results were indicative of low preferences in related specialty choices but high (TFD group) and moderate (non TFD group) preferences for wanting to work with people with dementia, in general, were found. However,

caution is needed in the interpretation of these results as a validated measure to assess preferences is lacking.

VII. Contributed to an understanding of changes during undergraduate education.

A lack of longitudinal literature on preferences has previously been noted, including none on dementia. The longitudinal data in SS2 and follow up interviews in SS3 add to this literature, suggesting preferences for working with people with dementia may decrease during training.

VIII. Contribution to MM-GT literature

This thesis adds to the growing body of literature on MM-GT and demonstrates how this methodology can be used to build a conceptual framework, including the innovative use of systematic review. The quality of this research has been assessed using standards for evaluation of MM-GT.

7.6 Conclusion

This thesis is the first study to explore factors associated with career preferences for working with people with dementia in students and newly qualified healthcare professionals in the UK. It makes an original contribution to the literature on dementia preferences, most significantly through the novel development of a conceptual framework for understanding career preferences in students and newly qualified professionals.

This work has demonstrated that there is a range of factors that are associated with preferences for working with people with dementia. It suggests that factors of significance are: student characteristics and perceived alignment with the attributes needed to work with people with dementia; the importance of making a difference to patients' lives; the perception of working with people with dementia as a 'different type of care'; the impact of experiences including dementia educational programmes; perceptions of people with dementia including care challenges and enjoyment from interactions; and career characteristics such as challenges due to systems and care environments.

This framework provides a platform for future work further exploring preferences related to working with people with dementia and provides recommendations for education and practice. Specifically, the implications of this thesis include that HEIs should consider their role in preferences when reviewing the curriculum content in relation to working with people with dementia. The curriculum should ensure students are trained in key competencies, as well as encouraging a value on psychosocial and person-centred models of care. Dementia educational interventions such as Time for Dementia offer a way to meet training aims and positively influence preferences. Future evaluations of dementia education should assess preferences as well as knowledge and attitude outcomes. However, competency and interest may not lead to more willing healthcare professionals if the needs of people with dementia are not prioritised in clinical settings; healthcare professionals want to work where they can be effective and make a difference to patient lives. The improvement of both education and services in dementia care is integral to both the improvement of outcomes for patients with dementia and preferences of student and newly qualified healthcare professionals for working with this patient group.

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Appendix

Appendix A. Presentations and publications

Publications

Hebditch, M., Daley, S., Wright, J., Sherlock, G., Scott, J., & Banerjee, S. (2020). Preferences of nursing and medical students for working with older adults and people with dementia: a systematic review. *BMC medical education, 20*, 1-11.

Key Conferences

34th International Conference of Alzheimer's Disease International. 10-12 December 2020. Virtual Conference. Poster 1: Medical and nursing students' preferences for working with people with dementia; a systematic review. Poster 2: Student nurses' preferences for working with people with dementia; a longitudinal study.

RCN international nursing conference. 2nd-4th September 2019. Sheffield. Participation in a TFD Symposium, individual 15 min presentation: Student nurse preferences for working with people with dementia.

29th Alzheimer Europe Conference. 23-25 October 2019. The Hague, Netherlands. Poster presentation: Student nurses' preferences for working with people with dementia

AIMEE conference (Medical education). 25th -28th August 2019. Vienna. E-poster with 3 min presentation: Medical students' preferences for working with people with dementia: a systematic review.

Appendix B. SS1 Example search results

MEDLINE Returned search 25.04.2018

Search History	Results	
1	exp Career Choice/	20934
2	exp Specialization/	23209
3	("career preference" or "career choice" or "intent* to work" or speciali*ation or "career intent*" or "special*ty choice" or "special*ty interest" or (Special* adj4 interest*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	67714
4	1 or 2 or 3	67714
5	exp Aged/	2799684
6	exp DEMENTIA/	145818
7	("older adult*" or "older people" or elder* or dementia or geriatric* or aged).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	4948351
8	5 or 6 or 7	4990700
9	exp Students, Nursing/	21440
10	exp Students, Medical/	28507
11	exp Students, Health Occupations/	5! 9365
12	((student* ad j3 nurs*) or "medical student*" or "allied health* student*" or "health* student*").mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	64874
13	9 or 10 or 11 or 12	86129
14	4 and 8 and 13	516

Appendix C. SS1 Extraction template

BACKGROUND INFORMATION	
Extracted by:	
Reference:	
STUDY DESIGN	
Design	E.g. Longitudinal survey design, intervention study with control, and intervention with re/post, mixed methods. Describe both QUANT and QUAL design.
Country	Of participant data origin, can be more than one country
Main Objectives	Main aims/ objectives/ research questions. Either copy and paste if short, or rephrase.
Student type	Nursing or medical students
Response rate (Quant)	% at start of project and at each time point, if multiple
Number (Quant)	Of participants, broken down by any sub groups if relevant e.g. Year 1: Year 2: Or Intervention: Control:
Number (Qual)	
Data collection, Sampling (for Qual)	How participants sampled for qualitative work
Definition of career preference investigated	Type of 'preference' and career Examples include; Preference to work with older people intent to specialise in geriatrics Interest In working with people with dementia attitude towards working with older patients Include actual definition by study if given.
Name of career preference measure (Quant)	Full name and abbreviation or note unstandardized/ unnamed
Details of career preference Measurement used (Quant)	Give details of measurement used (e.g. Likert scale, rankings or application data). Include the questions or choices of rankings used Source of measure (i.e. do they give a reference for it or was it developed for this study)
Results on relative popularity/	Quant: Note the popularity of related field e.g. overall interest or ranking compared to other fields. Provide statistic, if relevant : Relationship, Significance

average preference (could be Quant or Qual)	Qual: If specific theme that speaks to popularity of field (rather than factors for/against field), note here.
Dementia Relevance	Include any mention of dementia in paper (if paper is not specifically looking at dementia career preferences)
Any other notes	E.g. Any other points of interest in article that you think are important but not covered in other boxes. Any recorded or known link to other papers that are from the same study
MMAT Score	/5 (Calculated from MMAT)

Qualitative Data		
Qualitative Method details Include type of data used, questions used and method of analysis. In papers with different sections/ multiple aims (not just exploring career preferences), give an overview of all analysis but state if only a section is relevant to career preferences, and only extract those themes.		
Main Theme	Explanation	Quotes
1.name given by author 2.Suggested name (i.e. factor)	1. Author explanation. Copy and paste if appropriate. Only include short extracts if long explanation. Include any sub themes. 2. Own (short) summary of Theme.	

Quantitative Data				
Name of variable (factor)	Details of Measurement (of factor)	Sig	Association	Notes/univariate/multivariate stats
e.g. AGE e.g. previous experience e.g. year of training e.g. country (use name given by author)	Scale used, Reference	Sig. or n.s or Not reported Sig must be set to at least <0.05 If factor is explored by sub groups: bold. For example: Male: sig Female: n.s	Only if Sig For all factors report in terms of its relationship from low to high Preference Positive Negative Descriptive:	
Details of intervention	Details of control/comparison	sig	Association	notes
Components of intervention. Aim of intervention	e.g. pre/post, comparison groups, active controls	Sig. or N.S. or Not reported Sig must be set to at least <0.05 Include any sub groups.	Positive Negative Descriptive:	

Appendix D.SS1 Overview of studies

Short Reference (full references below)	Design/ Methods MMAT Score Out of *****	Participants Student type, Country Number: Qt= Quantitative QI= Qualitative	Main Objectives
1 Abbey, J., et al. (2006)	Qualitative (focus groups) ***	Nursing, Australia Qt: n/a QI: n=14	Explores aspects of aging care placements in relation to students' intentions to pursue a career in aged care.
2 Alsenany, S. (2010)[A] Alsenany, S. and A. Al Saif (2012) [B][full text not found]	Mixed Methods (Thesis). Cross-sectional Surveys with open questions (student data) ****	Nursing, Saudi Arabia Qt: Phase 1 n=566 Phase 2 n=200 QI: Unknown	"The aims of this study are to explore the attitudes, knowledge, willingness, intentions and work preferences towards the care of older people among nursing students in the undergraduate nursing curricula in Saudi Arabia."
3 Ayoğlu, F. N., et al. (2014)	Cross-sectional comparative survey ***	Nursing and Medical, Turkey Qt: n= 618 (Nurses n=339 Medics n=279) QI: n/a	"to evaluate the attitudes of nursing and medical students toward older people"
4 Bagri, A. S. and R. Tiberius 5(2010).	Qualitative (focus groups) ***	Medical (allopathic),USA Qt: n/a QI: n=30	"ascertain medical students attitudes on Geriatrics"
5 Ben Natan, M., et al. (2015).	Cross-sectional survey *****	Nursing, Israel Qt: n=200 QI: n/a	To explore 'factors related to nursing students' intention to work in geriatrics upon graduation

6	Boyle, V., et al. (2014).	Cross-sectional Survey ****	Medical, New Zealand Qt: n=711 Ql: n/a	"This study describes gender patterns of current specialty interest among medical students at the University of Auckland, and models the predictive effect of gender compared to other career influencing factors"
7	Briscoe, V. J. (2004).	Quasi-experimental study (Solomon four-group design, Survey pre/post intervention) ***	Nursing, USA Qt: n= 104 (Experimental n= 41, Control n=63) Ql: n/a	To investigate attitudes and knowledge after a gerontology course, and the association of career preferences with attitude and knowledge.
8	Brown, J., et al. (2008).	Multi-method, multi-stage approach. Cross-sectional Survey and Qualitative Focus groups. ***	Nursing, UK Qt: n=718 Ql: not known	To identify the best practice for teaching care of older people, that supports positive interest in the field.
9	Byszewski, A., et al. (2017).	Quasi experimental study, pre/post survey after intervention ***	Medical, Canada Qt: n=93 Ql: n/a	Develop and evaluate an informational podcast on geriatrics
10	Carlson, E. and E. Idvall (2015) [A]Carlson, E. (2015).[B]	Cross-sectional survey (with open text) ***	Nursing, Sweden Qt: n=183 (1st yrs.) [A] QL: n=224 (1st yrs. and 3rd yrs.) [B]	The aim of this study was to explore student nurses' reasons for and against a future career in aged care"
11	Che, C. C., et al. (2018)	Cross-sectional survey ****	Nursing, Malaysia Qt: n= 1462 Ql: n/a	"determine the associations between demographical characteristics and working intentions towards older people, as well as to determine the predictors of intentions to work with older people among nursing students"

12	Cheng, M., et al. (2015)	Cross-sectional Survey ****	Nursing, China Qt: n=916 Ql: n/a	"The purpose of this study was to examine the motivation for choosing gerontological nursing as a career and to identify the associated factors among student nurse"
13	Chi, M. J., et al. (2016).	Cross-sectional survey *****	Nursing, Taiwan Qt: n=612 Ql: n/a	"This study aimed to explore Taiwanese nursing students' willingness to work with older persons and factors associated with this"
14	Chua, M. P., et al. (2008).	Cross-sectional survey ****	Medical, Singapore Qt: n=244 Ql: n/a	"This study determined medical students' attitudes towards older people and their willingness to consider a career in Geriatric Medicine."
15	Curran, M. A., et al. (2015)	Cross-sectional survey (with open questions.) **	Medical, USA Qt: n=27 Ql: n=27	"This study sought to obtain medical students' perspectives on barriers and facilitators toward pursuing a career in academics and/or in geriatric psychiatry or geriatric medicine."
16	Darling, R., et al. (2017)	Cross-sectional survey ***	Nursing, Turkey Qt: 468 Ql: n/a	"The purposes of this study were to assess the overall attitudes of nursing students at a Turkish university toward the elderly and to identify the effects of demographic and social factors on attitudes"

17	de Guzman, A. B., et al. (2013)	Cross-sectional survey ****	Nursing, Philippines Qt: n=839 Ql: n/a	"Anchored on the key constructs of Ajzen's Theory of Planned Behaviour (1985), this paper seeks to test a model that explores the influence of knowledge, attitude, and caring behaviour on nursing students' behavioural intention toward geriatric care."
18	Diachun, L. L., et al. (2006)	Longitudinal Survey (1st and 2nd yr.) with open text questions ****	Medical, Canada Qt: n= 108 matched (T1 n= 121, T2 n= 118) Ql: n/a	"This study explored student interest in and barriers and enticements to geriatric medicine as a career choice."
19	Diachun, L. L., et al. (2006).	Quasi-experimental design (longitudinal survey initially after intervention, and one year later) **	Medical, Canada Qt: n=42 Ql: n/a	"This study tested the hypothesis that experiential education is superior to a traditionally didactic approachStudents' attitudes toward older people and interest in geriatric medicine were also evaluated 1 year after undergoing a didactic or participatory first-year learning session in geriatrics"
20	Duggan, S., et al. (2013).	Qualitative (focus groups) *****	Nursing, UK (Ireland) Qt: n/a Ql: n=32	"To explore students' perceptions of working with older people and the extent to which their preregistration curriculum is preparing them for this role."

21	Dunkle, S. E. and R. S. Hyde (1995)	Cross-sectional survey with longitudinal component **	Nursing, USA Qt: n=85 Ql: n/a	"Identify factors that influence physical therapist and nursing RNS students intentions and behaviours towards working with the elderly, and to test the application of the Theory of Reasoned Action."
22	Fagerberg, I., et al. (2000).	Longitudinal Qualitative study (interviews and Diaries) *****	Nursing, Sweden Qt: n/a Ql: n=27	To understand the reasons for where student nurses would like to work after graduation, in relation to elderly care.
23	Fitzgerald, J. T., et al. (2003).	cross-sectional survey ****	Medical, USA Qt: n=171 Ql: n/a	This study examined medical student's interest in geriatrics "Are knowledge, positive attitudes, and prior experience with older adults associated with an interest in geriatric medicine?"
24	Fox, S. D. and J. E. Wold (1996)	Quasi-Experimental (pre/post survey with open questions- [not extracted]) ***	Nursing, USA Qt: n=144 Ql: n/a	"evaluate perceived learning and attitude changes following a gerontological placement in final year nursing students"
25	Gates, K., et al. (2009).	Qualitative (Focus Groups) ***	Nursing, Canada Qt: n/a Ql: n=27	To understand student "perspectives, experiences, values, ideas and opinions" about working with older adults.

26	Gonzales, E., et al. (2010)	Quasi-experimental (with pre/post survey with control and focus groups) ***	Medical, USA Qt: n= 208 (For preference data only: T1: Treatment n=104, Comparison n=92. T2:Treatment n = 87 Comparison n= 76) QI: n/a	To explore the impact of 'Vital Visionaries' (an intergeneration art program) on attitudes toward older adults, perception of commonality with older adults, and career plans.
27	Gould, O. N., et al. (2012).	Longitudinal Survey (beginning and end of year, for 1st, 2nd and 4th years) with open questions. ***	Nursing, Canada Qt: n= 58 matched (T1 n=170, T2 n=75) QI: n=195	"This study investigates novice(first and second years) and experienced (fourth years)student nurses' attitudes about caring for patients across the lifespan"
28	Happell, B. (1999) [A] Happell, B. and J. Brooker (2001) [B] Happell, B. (2002). [C] Happell, B. (2002). [D]	Longitudinal Questionnaire (with open questions) ***	Nursing, Australia Qt: T1 n= 793 T2 n=521 QI: n/a	To explore the career preferences of nursing students at the beginning and end of their course.
29	Haron, Y., et al. (2013)	Cross-sectional survey ****	Nursing, Israel Qt: n=486 QI: n/a	"To gather last-year student nurses' views on geriatric nursing as a career choice and identify the factors behind those views."
30	Henderson, J., et al. (2008)	Cross-sectional Survey (with open questions) ****	Nursing, Australia Qt: n=262 QI: n/a	To assess attitudes in first-year nursing students to older people and working with older people.

31	Herdman, E. (2002).	Qualitative (Semi-structured questionnaires) ****	Nursing, Hong Kong Qt: n=96 Ql: n/a	"to explore student nurses' reasons for undertaking a nursing degree course, their career specialty preferences, the rationale behind these preferences and their views of working with elderly patients."
32	Hughes, N. J., et al. (2008).	1)Cross-sectional survey (with 1st year students) 2)Quasi-experimental, Pre/Post intervention Survey (with 4th year students) **	Medical, UK (Scotland) Qt: 1) n= 163 2) n= 70 matched Ql: n/a	"To evaluate the attitudes of first- and fourth year medical students toward older people and the relationship between these attitudes and possible career choice."
33	Hweidi, I. M. and S. M. Al-Obeisat (2006)	Cross-sectional survey ****	Nursing, Jordan Qt: n=243 Ql: n/a	"The purpose of this study was to identify Jordanian nursing students' attitudes towards older people and to consider whether the attitudes of the selected sample had any bearing on the care provided for this client group"
34	Jefferson, A. L., et al. (2012).	Quasi-experimental (pre/post Survey following intervention , with reflective essays) *****	Medical, USA Qt: n=45 Ql: n=45	"The purpose of this study is to evaluate the PAIRS Program and its effectiveness in enhancing medical education as a service-learning activity and replication model for the Buddy Program™."
35	King, B. J., et al. (2013).	Longitudinal mixed-methods (Survey at y1, y2, y3 and y4, and focus groups) ***	Nursing, USA Qt: n= 80 (T1 n= 80 T2 n= 43 T3 n=75 T4 = 66) Ql: n=10	"The purpose of this longitudinal mixed methods study is to describe and explain student nurse attitudes and preference changes over time"

36	Kloster, T., et al. (2007).	Longitudinal Survey (start and end of course) with open text questions ***	Nursing, Norway Qt: n/a Ql: n=187 [for content analysis for reasons wanting to/ not wanting to work in 'aged care institution']	"identify Norwegian undergraduate nursing students' career preferences at the beginning and end of their nursing education programme, together with their reasons for these preferences"
37	Koehler, A. R., et al. (2016)	Quasi-experimental (pre- and post-test survey following intervention) ***	Nursing, USA Qt: n= 266 matched (T1: 266 T2: 266) Ql: n/a	"To examine the impact of a stand-alone course in gerontological nursing on undergraduate nursing students' perceptions of working with older adults and career intentions."
38	Koskinen, S. (2016) [A] Koskinen, S., et al. (2012) [B]	Multi phased design (Thesis) 1) Cross-sectional Survey 2) Quasi-experimental pre-post-test design evaluation ****	Nursing, Finland Qt: 1) N= 183 2) N=87 (intervention n=40 , teaching as usual n=36) Ql: n/a	"The purpose of this two-phased study is to examine the interest of nursing students in choosing a career in older people nursing."
39	Lea, E., et al. (2016).	Quasi-experimental design (pre/post Survey following intervention) ***	Nursing, Australia Qt: n=71 (T2. Post Survey data explored only) Ql: n/a	"To investigate which aspects of student nurses' experiences of residential aged care facility clinical placements affect perceived likelihood of choosing a career in residential aged care post graduation."
40	Lee, A. C. K., et al. (2006)	Cross-sectional survey ***	Nursing, Hong Kong Qt: n=219 Ql: n/a	"The present study aimed to examine the knowledge and working preferences toward the elderly among undergraduate nursing students in Hong Kong."

41	Lu, W.-H., et al. (2010).	Quasi-experimental (pre/post survey with focus group) ***	Medical, USA Qt: n=137 (Intervention n=46 Control n=91) QI: n=9 (intervention)	"The purpose of this study was to examine the impact of an extracurricular geriatric program on medical students' knowledge of, and attitudes toward, the elderly and their interest in studying geriatric medicine"
42	McKenzie, E. L. and P. M. Brown (2014).	Cross-sectional survey (with open text) ***	Nursing, Australia Qt: n=135 QI: n=116	"This study aimed to investigate factors influencing nursing students' intentions to work in dementia care and to explore perceived barriers to working in dementia care"
43	Ni Chroinin, D., et al. (2013).	Cross-sectional survey **	Medical, Republic of Ireland Qt: n=274 QI: n/a	"(i) career choices of senior medical students; (ii) interest in geriatric medicine; (iii) factors influencing such choices; and (iv) the impact of a 6-week Medicine in the Community module."
44	Pan, I. J., et al. (2009)	Cross-sectional survey ****	Nursing, Taiwan Qt: n=362 QI: n/a	"The aim of this research was to establish Taiwanese undergraduate nursing students' attitudes toward older people. "
45	Rathnayake, S., et al. (2016)	Cross-sectional survey ****	Nursing, Sri Lanka Qt: n=98 QI: n/a	"Examine the attitudes of undergraduate nursing students toward older people and their willingness to work with older people in Sri Lanka."

46	Robbins, T. D., et al. (2011).	Cross-sectional Survey ****	Medical, UK Qt: n=1,562 Ql: n/a	"To describe attitudes to, and perceptions of, geriatric medicine among the students of all UK medical schools."
47	Samra, R. (2013).	Qualitative (individual interviews) [Sub study 3 in Thesis] *****	Medical, UK Qt: n/a Ql: n=22	To conceptualise medical student and doctors attitudes towards older people (in UK hospital settings). The aim of Sub study 3 was to "explore factors involved in junior doctors' decisions to pursue or not pursue geriatric medicine as a career choice"
48	Schigelone, A. S. and B. Ingersoll-Dayton (2004).	Qualitative study (Individual interviews) ****	Medical, USA Qt: n/a Ql: n=20	To explore the reasons for first-year medical students interest or uninterested in pursuing geriatrics.
49	Shen, J. and L. D. Xiao (2012).	Cross-sectional survey (with open questions) ****	Nursing, China Qt: n=622 Ql: n/a	To explore factors affecting nursing students' intention to work with older people.
50	Stevens, J. A. (2011).	Longitudinal Survey (3 time points, start, middle, end of course) ***	Nursing, Australia Qt: n= 150 Matched data (T1 n= 203, T2 n=189, T3 n= 160) Ql: n/a	"The main research objectives in this study were to (1) develop a profile of nursing career preferences and the rationale underpinning those choices and (2) compare these results with other literature to indicate if this profile is changing."

51	Swanlund, S. and A. Kujath (2012).	Cross-sectional study (with open questions) **	Nursing, USA Qt: n=50 Ql: n/a	Four research questions including 'what factors would help increase student interest in gerontology?'
52	Voogt, S. J., et al. (2008)	Cross-sectional survey ****	Medical, USA Qt: n=231 Ql: n/a	"..the purpose of this study was to more clearly understand the specific factors involved in choosing geriatric medicine as a career path among first-year medical students."
53	Xiao, L. D., et al. (2013)	Cross-sectional comparative survey ****	Nursing, Australia and China Qt: n= 466 (Aus. n= 262, China n= 204) Ql; 460	"The aim of this study was to compare Australian and Chinese nursing students' attitudes and intentions to care for the elderly and the factors affecting these intentions."
54	Zakari, N. M. A. (2005)	Cross-sectional Survey (With open text questions) *****	Nursing, Saudi Arabia QT: n=506 Ql: n=33	Examine the relationships between attitudes, knowledge, willingness and intention to work with the elderly and predictors of intention.
55	Zhang, S., et al. (2016).	Cross-sectional survey ****	Nursing, China Qt: n=382 Ql: n/a	"The purpose of this study is to explore the relationships among knowledge about aging, care willingness, attitude towards the elderly and gratitude."
56	Zisberg, A. P. R. N., et al. (2015)	Cross-sectional survey ****	Nursing, Israel Qt: n=224 Ql: n/a	"The aim of this study was to examine the effect of nursing education on students' knowledge, attitudes, and preferences to work with older adults in an ethnically diverse Israeli society"

References for Appendix D: overview of studies table

- 1 Abbey, J., Abbey, B., Bridges, P., Elder, R., Lemcke, P., Liddle, J., & Thornton, R. (2006). Clinical placements in residential aged care facilities: the impact on nursing students' perception of aged care and the effect on career plans. *Australian Journal of Advanced Nursing*, 23(4), 14-19.
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Appendix E. SS1 Factor Table

Note: each number represents a reference, as labelled in overview table above (Appendix D)

	Nursing students	Medical students	Nursing students	Medical students	
Factor	Variables (Quant) Number= Reference Significant finding= Sig ($p < 0.05$) OR Non-significant = n.s Association with preferences (recorded only if sig): Positive= (+) , negative (-) or descriptive (vs)		Themes (Qual) Number= Reference (See key below)		Summary of association with preferences
CATEGORY 1: STUDENT CHARACTERISTICS					
Age	56: n.s, 13: n.s, 29: n.s, 10: n.s, 11: n.s, 21: n.s, 30: n.s. 49: Sig (-), 40: Sig (-). 42: Sig(+)	14: n.s, 32: n.s, 52: n.s, 18: n.s.			Conflicting evidence on age. For nurses, Younger for older people, older for dementia.
Gender	38: Sig (Female), 11: Sig (Female) 5: Gender Sig (Male). 56: n.s, 12: n.s, 13: n.s, 29: n.s, 30: n.s, 10: n.s.	6: Sig (Female), 14: Sig (Female), 43: Sig (Female), 18: Sig (Female) 23: n.s, 32 n.s, 52: gender. n.s.			Evidence of link with gender (female), stronger in medical students.
Year of training	56: Sig (-), 27: Sig(-) ,40: Sig(-), 50: Sig(-), 28: Sig(-),	18: Sig(-), 19: Sig (-)			Negative association suggested for both, but some conflicting evidence.

	11: Sig (3 yr. higher vs 1-4), 35: Sig(+) 49: n.s, 54: n.s.				
Ethnicity & nationality	56: Sig (Jewish, vs Arab), 11: Sig (Indian; Malay; Chinese), 53: Sig (China, vs AUS)	52: Sig (Caucasian vs. others) 43: Sig (Irish vs. non-Irish) 14: n.s (Malay/Chinese/India n/other) 32: n.s	54. Culture and religion and family; 'Building on a strong foundation'		Supporting evidence (various- cultural context).
Religion	2: Sig. (Students believed in a relationship between taking care of older people and their religious beliefs) , 5: Sig (Religion vs. Secular) 13: n.s. (Sec/rel), 29: n.s. (Jewish/ Non)				Limited association for nurses only, not explored in medical.
Family characteristics	Close relationships: 12: Sig (Close relationship with an elderly relative. Yes vs No) 12: Sig (Live older family relative. Yes vs No) 12: Sig (Have older family members.	Close relationship: 23: n.s (Important relationships) 52: n.s (interaction with grandparent and quality of relationship) Other: 6: Sig (+) (Perceived influence of friend/family in area)		48: Family Ties	Evidence for a relationship in nurses. Limited evidence for medical; perceived family and friend influence in area.

	<p>Yes vs No) 13: Sig (Grandparents main caregivers during childhood. Yes vs No) 13: n.s (Live with grandparents)</p> <p>Other: 12: Sig (Parents attitudes to older people: good vs general/worse) 12: Sig (Only child at home. No vs Yes)</p>				
Knowledge	<p>7: n.s, 56: n.s, 54: n.s, 17: n.s , 40: n.s</p> <p>40: Sig (+), 55: Sig (+),</p>	23: n.s, 41 n.s.	<p>54: Lack of knowledge or ability. 28: Not personally suited. 22: 'Education and nurse educators in elder vs acute care' (feeling unprepared). 35: Feeling underprepared. 49: Do not feel confidence working with older people.</p>	15: Lack of knowledge (of specialty and exposure to geriatric population	Limited association for both; more qualitative evidence about perceived skills (In nurses).

Positive Attitudes	<p>To Older people: 3: Sig (+) 16: Sig (+), 33: Sig(+),45: Sig(+), 56: Sig(+), 55: Sig (+), 54: Sig(+), 2:Sig (+), 12 Sig (+), 11: Sig (+), 17: Sig (+), 29: Sig(+), 30:Sig(+) 49: Sig (+) , 42 Sig (+) 51: n.s 22: n.s.</p> <p>Patients: 44: Sig (+), 2: Sig (+), 13: Sig (+).</p> <p>Gratitude. 55: Sig (+).</p>	<p>To older people: 3: Sig (+), 41: n.s.</p> <p>Patients: 14: Sig (+), 23: Sig (+), 23: Sig (+), 52: Sig (+), 32: Sig (+).</p>			<p>Strong association for a relationship with attitudes to patients and older people (in nursing), a smaller amount of literature on medical but indicative of the same relationship.</p>
Misc. student characteristics	<p>13: Grades. n.s. 13: Join school clubs. n.s 13: Paid attention to issues related to older adults. Sig (Yes, vs no)</p>				<p>Miscellaneous</p>

CATEGORY 2: COURSE CHARACTERISTICS					
Course Characteristics	Type of course: 11: Sig (Public vs private) 29: Sig (College, diploma vs University) 55: n.s ,11: n.s. ,11: n.s Integrated vs standalone: 11: n.s, 21: n.s location: 13: n.s Nurse educator certified on Gerontological nursing : 11: n.s	Allopathic vs Osteopathic: 52: n.s Type of geriatric course content: 46: n.s			No clear associations. Support for public vs private and university vs college in nurses.
CATEGORY 3: EXPERIENCES					
Previous experience	Previous Experience: 8: Sig (+), 55: Sig (+), 12: Sig (+), 29: Sig (+) 11: n.s, 21: n.s, 21: n.s. Work: 56: Sig (+), 38: Sig (+) 30: Sig (+), 10: n.s, 21:n.s, 49: n.s.	Previous experience: 46: Sig (+). 14: n.s, 23: n.s. 52: n.s, 18: n.s, 18: n.s, 32: n.s, Work: 52: n.s. Voluntary: 52: n.s. Graduate level entry 43: Sig (+).	22: Precollege experiences of elderly		Strong support for a positive relationship in nurses. Association not consistently found in medical.

	<p>Volunteer: 13: Sig (+)</p> <p>Amount: 13: Sig (+), 38: Sig (+), 50: Sig (+).</p> <p>Nursing home experiences: 13: n.s. Taking related gerontological courses (y/n). 13: n.s.</p>			
Clinical placements	<p>Positive clinical placement: 12: Sig (+), 39: Sig (+).</p> <p>Aspects of placements: Rating of pedagogical atmosphere in placement 10: Sig (+). Rating of supervisory relationship. 10: Sig (+) Usefulness of feedback. 39: Sig (+).</p>	<p>Perceived influence of positive placement 6: Sig(+)</p> <p>Self-reported impact of placement on interest 18: Sig(+)</p>	<p>8: Transformative nature of placements. 20: Influence of clinical placements on career choice. 35: Meeting or challenging expectations. 35: Dispelling Myths. (+) 1: Poor clinical placements</p> <p>Aspects: 22: Preceptors as role models (weak for OP care)</p>	<p>Moderate support for both medical and nursing students, role of quality highlighted in qualitative literature.</p>

	<p>Supportiveness of nurse mentors: 39: Sig (+). Supportiveness of care workers 39: Sig (+). 11: Sig (care home placement, Vs. general or geriatric ward)</p> <p>Rating of leadership style of manger. 10: n.s. Rating of premises. 10: n.s. Role of nursing teacher. 10: N.s.</p>				
Educational Intervention's	24: Sig (+), 37 Sig (+), 2: Sig (+), 38: n.s, 42: n.s	32: Sig(+), 41: Sig (+), 43: Sig(+) 9: n.s, 26: n.s, 19: n.s		34 'Influence on Specialization'	Support of effect of several interventions for medical and nursing students.
General experiences	8: Sig (recorded previous experience as positive vs. negative experience)		54: Positive personal experiences 54: Unconstructive personal experiences. 30: Negative experiences of caring for older people.	48: Amount and Quality 15: Positive experiences with older adults	Support for the association of positive and negative experiences.

			25: 'disposition towards elderly'		
CATEGORY 4: CAREER CHARACTERISTICS					
Professional development	29: Sig (those with higher preference rate opportunity to pursue Clinical Nurse specialists role as influencing factor)		1: Career concerns 50: Negative effect on career 28: Have previously worked in OP (seek new experiences). 31: Future prospect (pursue in future)	15: 'Increased demand for geriatric care'	Lack of perceived professional development negatively associated. Unique for nurses.
Financial and prestige considerations	Importance of Prestige: 39: Sig(-) Importance of Finance: 29: n.s	Importance Finance: 18: Sig (-) Importance of Prestige: 18: Sig (-), 18: Sig (-).	49: Financial concerns. 1:'Status concerns' 42: Profession (Conditions: pay and staffing) 42: Profession (Culture: stigma and perceived unethical).	15: Financial concerns 4: Prestige and limited Financial rewards	Evidence for negative association with financial concerns and prestige concerns in nursing medical students.

Lifestyle considerations		43: Travel rated as important in career. Sig (+) 18: Length of training as a barrier Sig(-) 18: Internal medicine residency (barrier): n.s 18: Lifestyle is an important consideration: n.s 18 Lifestyle issues (barrier) n.s			Explored in medical only, but limited support.
CATEGORY 5: PATIENT CHARACTERISTICS					
Age of patients	Opportunities to work with older people 39: Sig (+).	Hope practice mostly: With adults 18: Sig (+) With children 18: Sig (-) With seniors 18: Sig (+) More satisfying working with younger patients 18: Sig (-).			Positive association for those hoping to work with older patients and those with preferences for working with older people.
Communication difficulties			30: Not being able to communicate or relate to older people. 31: Communication issues. 42: Patient contact (communication)	4: Interacting with elderly patients	Factor associated with nursing and medical.

Nature of patients illness		<p>18: I would rather not work with chronically ill patients: Sig (-). 18: Chronicity of patients is a barrier to pursue geriatrics: Sig (-)</p> <p>18: Find caring for a patient with an acute illness more satisfying (vs chronic illness): n.s. 18: Caring for patients with a single well-defined illness: n.s</p> <p>Cognitive capacity: Cognitive capacity of patient (barrier): 18: n.s 'Cognitively intact' more satisfying 18: n.s</p>	<p>54: Discomfort with ageing process (depressing and hopeless). 10: Feeling of hopelessness. 28: Lack of clinical recovery</p>	<p>4: The futility of care 47: Limited capacity to make a difference.</p> <p>15: Characteristics of the older population (complexity, depressing, boring).</p> <p>48: Patient responsibility</p>	Factor associated with nursing and medical.
Disposition of patient and family		<p>Family dynamics: 18: Complex family/social issues (barrier): n.s 18: I would rather deal with an older patient with no family members than with an older patient who has</p>	<p>54: Positive and negative impressions of older people. 54: Understanding ageing (empathy and the need of elders)</p>	<p>4: Unrealistic expectations of patients 48: Perceptions of geriatrics (frustrating, noncompliance)</p>	Evidence for the role of patient dispositions (different concerns for medical and nursing).

		family members who need to be informed of the patient's care: n.s	28: characteristics of patients (dislike) 50: Negative view of older people 42: Patient contact (safety)		
CATEGORY 6: WORK CHARACTERISTICS					
Complexity		A barrier is my lack of comfort with ambiguity: 18: Sig (-). 18: Complexity of patients (barrier) n.s.		4: The overwhelming nature of managing older patients 47: Being a generalist 4: Difficult ethical dilemmas.	Medical only.
Boring	Diversity 29: Sig (+), those who rate the current state of gerontological nursing as more diverse)		36: Lack of challenge and boring. 10: Slow-paced and lacking action. 10: Boring, stressful and depressing. 31: Boring 22: Students image of elderly vs reality of work (slow-paced, limited variety, poor prospects) 28: Negative nature of work	4: Lack of intellectual stimulation. 48: Perceptions of geriatrics (boring)	An overall qualitative theme in nursing and medical students. Pervasive in nursing.

			(boring uninteresting and depressing) 30: Nature of work (boring, physical demands, limited range of tasks-less diversity) 49: Nature of work (boring, unchallenging and lack of achievement) 28: Less diversity than other areas. 42: Profession (diversity).		
Emotional nature of work (Inc. fear and discomfort)	12: Sig (-)		51: Unpleasant emotions around disabling conditions 28: Fear and discomfort 30: Fear of death and dying. 42: Personal demands (emotional)	4: The emotional burden of caring for older people 48: Fear of death and dying (+ associated)	Associated with medical and nursing students.
Control and autonomy	29: Nurse powers Sig (+, those who rate nurse powers higher) 29: Expanded case management Sig (+,		Negative: 1:'Fear of being in charge but not in control' 25: Sense of agency		A sizable factor for nurses. The factor is complex, with some seemingly contradictory elements.

	those who have higher preferences said that increased case powers would influence preferences)		22: 'Influence of power' (lack of). 1: 'A free hand but no one to reach out to' 22: Working alone as a nurse without support. Positive: 10: 'Independent and autonomous work' (positive aspect of work)		
Poor environment	Positive Ratings of working conditions: 29: Sig (+)		Negative: 25: Quality of work life. 10: Unqualified and unengaged staff. 22: 'Financial cutbacks' (impacting care) 49: Work environment Positive: 10: Harmonious environment (less stressful)	47: Understaffed and overworked.	Support as negative factor (more in nursing).
Focus on Quality of life (as a barrier)		18: Barrier is focus on quality of life Sig (-)	25: Quality of life of residents 22: 'Comprehensive view of health	48: Role of doctors (to cure)	Support as a negative factor (in both). Shares overlap in with themes

			care- realities in elder and acute care'		related to 'nature of patients' illnesses.
Positives (long term relationships and rewarding)	Ability to provide continuity of care 39: Sig (+)		10: Long term relationships. 54: 'Incentives in elder care' 36: Meaningful and enjoyable work. 10: Meaningful and enjoyable work. 51: 'Developing a value for gerontology' (developing relationships, and appreciating complexity)	48: Perceptions of geriatrics (slower pace, interacting with patients and building relationships)	Positive Association. Specifically patient interaction in both medical and nursing.
Lack of Procedures		Technical Procedures rated as important in career: 43: Sig (-). 18: Non-procedure-oriented specialty. n.s 18. Think doing a diagnostic procedure (e.g., lumbar puncture) would be more Satisfying than cognitive. n.s			Limited evidence of a negative association.

Heavy workload			36: Heavy workload 42: Personal demands (physical)		Qualitative evidence as a negative factor. Nursing only.
CATEGORY 7: THEORY OF PLANNED BEHAVIOUR					
Attitudes (to behaviour)	11: Sig (+)*, 17: Sig (+)*, 21: Sig (+), 5: Sig(+) Behavioural beliefs: 5: Sig (+) 21: Sig (+) Caring behaviours (attitudes): 17: Sig (-)				Evidence of Positive Association. Nursing only.
Subjective norms	5: Sig (+) ,11: Sig(+), 21: Sig(+) Normative beliefs: 5: Sig (+) 21: Sig(+)				Evidence of Positive Association. Nursing only.
PBC	11: Sig (+), [17: n.s.]** 5: n.s, Control Beliefs: 5: Sig (+)				Mixed evidence for positive association. Nursing only.
Behaviour (job selection)	21: Sig (+).				Limited evidence for an association.

Appendix F. SS2 Nurse career preference ranking measure

4. If you are a **Nursing Student** (adult or mental health) please rank your preferred specialities below. Please only use one rank per choice (i.e. only rank one option as your no 1)

Career Specialities	Rank 1 (most preferred) - 11 (least preferred)
Children	
Operating theatre	
Intensive care	
Surgical	
Medical	
Community health	
Older people	
Developmental disability	
Psychiatric nursing	
Community mental	
People with dementia	

Please explain why your Rank 1 is your most preferred career choice:

Please explain why your Rank 11 is your least preferred career choice:

Please explain your choice of Rank for a career working with 'people with dementia':

—

Appendix G.SS2 Medical student career choices (JSE specialty preferences)

Which specialty do you plan to pursue? [Please choose only one]

- Anaesthesiology Dermatology Emergency Medicine
- Family Med./General Prac. Internal Med. (see below) Neurology
- Neurosurgery Obstetrics/Gynecology Ophthalmology
- Otolaryngology/ENT Orthopaedic Surgery Pathology
- Pediatrics Physical Med./Rehabilitation Plastic Surgery
- Preventive Medicine Psychiatry Public Health
- Radiology Surgery (see below) Urology
- Other _____
- Undecided

Medical Sub-specialty: [Please choose one if your primary specialty interest is Internal Medicine]

- Cardiology Critical Care/Pulmonary Endocrinology
- General Internal Medicine Gastroenterology Hematology/Oncology
- Infectious Disease Nephrology Rheumatology
- Other _____
- Undecided

Surgical Sub-specialty: [Please choose one if your primary specialty interest is Surgery]

- Cardiothoracic Colorectal General Surgery
- Transplant Trauma/Critical Care Vascular
- Other _____

Appendix H. Validity and Reliability of TFD Students Measure

Extract taken from 'TFD student measure guidance' guidance document for TFD evaluation.

Alzheimer's Disease Knowledge Scale (ADKS) (Carpenter et al, 2009)

- Test-retest reliability (0.81; 2-50 hours; $p < .001$)
- Correlates with self-report knowledge about AD ($r = 0.50$; $p < .001$)
- Adequate internal consistency in a range of populations (0.71; Carpenter et al., 2009)

Dementia Knowledge Questionnaire (DK-20) (Shanahan et al, 2013)

- Adequate test-retest reliability (ICC = .73)
- Marginal internal consistency (0.63)
- Established face and content validity, acceptable test-retest reliability, good construct validity

Medical Condition Regard Scale (MCRS) (Christison et al, 2002)

- Good Internal consistency (.87)
- Good test-retest reliability (.84; 17 days)

Approaches to Dementia Questionnaire (ADQ) (Lintern et al., 2000)

- Good Internal consistency (.83) ((0.78) Shanahan et al., 2013)
- Good retest reliability (.76)

Dementia Attitudes Scale (DAS) (O'Connor & McFadden, 2010)

- Reliability (Cronbach's alpha = 0.83)
- Social comfort (alpha = 0.82) and dementia knowledge (alpha = 0.75)

Jefferson Scale Empathy (JSE) (Hojat et al., 2001)

- Reliability (Cronbach's alpha = 0.81 HP-Version)
- Test-retest reliability coefficient was 0.65 (Hojat et al., 2002 as cited in Hojat 2009).

Appendix I. SS2 Medical student dementia preference measure (Dementia preference question)

Do you want to work with people with dementia when you qualify?

Please tick one box only

Not at all Unlikely No opinion Possibly Very likely

Please explain why:

.....
.....
.....
.....

2. What is your most preferred clinical specialty? Please write on the lines below

.....

Please explain why:

.....
.....
.....
.....

3. What is your least preferred clinical specialty? Please write on the lines below

.....

Please explain why:

.....
.....
.....
.....

Appendix J. SS2 JSE preferences breakdown and coding for analysis

Specialty listed in JSE	Medical /Surgical subspecialty *	Coding of open text responses (T5)
		Only unique responses listed - = no responses
Anesthesiology	-	Anaesthetics
Dermatology	MEDICAL	Dermatology
Emergency Medicine	-	A&E Emergency Medicine
Family Medicine / General Practice	-	GP or General Practice
Internal Medicine (Other/not specified)^	MEDICAL	Medicine Medicine- unsure which pathway yet Intensive care
Cardiology	MEDICAL	Cardiology
Critical Care/Pulmonary	MEDICAL	-
Endocrinology	MEDICAL	Endocrine Endocrinology
General Internal Medicine	MEDICAL	-
Gastroenterology	MEDICAL	gastroenterology
Hematology/Oncology	MEDICAL	Oncology
Infectious Disease	MEDICAL	Infectious diseases Internal medicine infectious diseases
Nephrology /renal medicine	MEDICAL	-
Rheumatology	MEDICAL	-
Neurology	MEDICAL	neurology
Neurosurgery	SURGICAL	-
Obstetrics / Gynecology	-	Obstetrics and gynaecology O&G OBS & Gyne
Ophthalmology	-	-
Otolaryngology/ENT	SURGICAL	ENT Ear, nose and throat
Orthopaedic Surgery	SURGICAL	Trauma and Orthopaedics Orthopaedics Orthopaedic surgery
Pathology	-	-
Paediatrics	-	paediatrics
Physical Medicine / Rehabilitation	MEDICAL	-
Plastic Surgery	SURGICAL	Plastic surgery
Preventive Medicine	-	-
Psychiatry	-	psychiatry
Public Health	-	Public health
Radiology		Radiology
Surgery (other / not specified)	SURGICAL	Surgery Surgery- vascular/general Max-fax surgery

Cardiothoracic	SURGICAL	-
Colorectal	SURGICAL	-
General Surgery	SURGICAL	General surgery
Transplant	SURGICAL	-
Trauma/Critical care	SURGICAL	-
Vascular	SURGICAL	-
Urology	SURGICAL	-
Other	-	Stroke medicine. sexual health/HIV/GUM Homeless medicine/GP Homeless health care FCU
Undecided	-	Don't have one Don't know yet Not sure unsure Including where more than one specialty given: Paediatrics/A&E Neurology/psychiatry Neurology/Neurosurgery Medicine/General Practice Haematology/oncology GP/Elderly/palliative care Geriatrics/Acute medicine General Practice/Psychiatry General Practice/A&E Endocrinology/Gen med Emergency medicine/General practice Emergency medicine and palliative Elderly medicine/oncology CofE, Palliative, Gp Cardiology/oncology Anaesthetics/GP/Radiology (interventional?) Acute medicine/A&E A&E/General Practice
ADDED CATEGORIES for RECODED Variable		
Geriatrics/elderly medicine	MEDICAL	Inc: 'Elderly' 'Care of the elderly' 'General medicine – geriatrics'
Palliative care	MEDICAL	Palliative care
Acute medicine	MEDICAL	Acute medicine

* as related to UK training pathways, based on definitions by Health Education England (2020).

^For UK students this is assumed interpreted as 'medicine' and all-encompassing subspecialties or refer to specific training pathway 'internal med', which is a 'medicine' pathway.

Appendix K. SS2 Profile of Adult nurses rankings

	T1 (n=342)				T2 (n=250)				T1-T2 n=210	T3 (n=103)				T1-T3 n=93
	Mean	Median	IQR	Rank	Mean	Median	IQR	Rank	P Value	Mean	Median	IQR	Rank	P Value
Medical	3.5	3.0	1.0-5.0	1	3.6	3.0	2.0-5.0	2	0.837	3.2	2.0	1.0-4.0	1	0.976
Intensive Care	3.8	3.0	2.0-5.0	2	3.6	3.0	2.0-5.0	3	0.075	3.3	2.0	1.0-4.0	2	0.076
Surgical	3.9	3.0	2.0-5.0	3	3.4	2.0	2.0-4.3	1	0.001	3.4	3.0	2.0-5.0	3	0.232
Operating Theatre	5.3	5.0	3.0-7.0	4	5.3	4.0	3.0-8.0	5	0.415	6.5	6.0	4.0-9.0	6	<0.000
Community Health	5.6	6.0	3.0-8.0	5	5.2	5.0	3.0-7.0	4	0.046	4.2	4.0	2.0-6.0	4	<0.000
Older People	5.7	6.0	3.0-8.0	6	6.1	6.0	4.0-8.0	6	0.042	6.0	6.0	4.0-8.0	5	0.434
Dementia	6.2	6.0	4.0-8.0	7	7.1	7.0	5.8-9.0	7	<0.001	6.7	7.0	5.0-9.0	7	0.209
Children	7.4	8.0	5.0-11.0	8	7.4	7.0	5.0-11.0	8	0.917	7.9	9.0	5.0-10.0	9	0.026
Psychiatric Nursing	8.0	9.0	6.0-10.0	9	8.1	9.0	6.0-10.0	10	0.468	8.1	8.0	7.0-10.0	10	0.585
Developmental Disability	8.0	8.0	7.0-10.0	10	7.9	8.0	7.0-9.0	9	0.891	7.8	8.0	6.0-10.0	8	0.546
Community Mental	8.5	9.0	7.0-10.0	11	8.5	9.0	7.0-10.0	11	0.863	8.7	9.0	8.0-10.0	11	0.307

A significant change between time points as calculated by the Wilcoxon Signed-Ranks test. The p-values are presented in the table for comparisons between T1 and T2, and, T1 and T3.

Appendix L. SS2 Profile of mental health mean rankings

	T1 (n=91)				T2 (n=60)				n=51	T3 (n=25)				n=20
	Mean	Median	IQR	Rank	Mean	Median	IQR	Rank	P- Value	Mean	Median	IQR	Rank	P- Value
Psychiatric Nursing	1.8	1.0	1.0-2.0	1	2.0	1.0	1.0-2.0	1	0.848	1.8	1.0	1.0-2.0	1	0.226
Community Mental	2.4	2.0	1.0-3.0	2	2.8	2.0	2.0-3.0	2	0.173	2.5	2.0	1.5-2.0	2	0.495
Dementia	5.0	4.0	3.0-7.0	3	5.6	5.0	3.0-9.0	4	0.237	5.2	4.0	3.0-7.0	4	0.626
Community Health	5.5	5.0	3.0-7.0	4	5.4	5.0	4.0-7.0	3	0.679	4.9	5.0	3.0-6.5	3	0.668
Children	6.3	6.0	4.0-9.0	5	5.9	5.0	3.0-8.0	5	0.725	6.4	6.0	4.0-9.0	6	0.167
Older People	6.3	6.0	4.0-8.0	6	6.2	6.0	4.0-8.0	6	0.779	5.7	5.0	4.0-7.5	5	0.448
Developmental Disability	6.9	7.0	5.0-9.0	8	6.7	6.0	5.0-9.0	7	0.219	6.6	7.0	5.0-8.5	7	0.332
Medical	6.9	7.0	5.0-9.0	7	7.1	7.0	6.0-8.0	8	0.225	7.4	7.0	6.0-9.0	8	0.024
Intensive Care	7.7	8.0	6.0-9.0	9	7.7	8.0	6.0-10.0	9	0.803	7.8	8.0	6.0-10.0	10	0.639
Surgical	8.2	9.0	6.0-10.0	10	8.2	9.0	7.0-10.0	10	0.767	8.7	9.0	8.0-10.0	9	0.443
Operating Theatre	9.0	10.0	8.0-11.0	11	8.4	9.0	6.3-11.0	11	0.101	8.9	9.0	8.0-11.0	11	0.297

A significant change between time points as calculated by the Wilcoxon Signed-Ranks test. The p-values are presented in the table for comparisons between T1 and T2, and, T1 and T3.



London - Queen Square Research Ethics Committee

HRA NRES Centre Manchester
Barlow House
3rd Floor
4 Minshull Street
Manchester
M1 3DZ

Please note: This is the favourable opinion of the REC only and does not allow the amendment to be implemented at NHS sites in England until the outcome of the HRA assessment has been confirmed.

08 January 2018

Dr Stephanie Daley
Clinical Research Fellow
Centre for Dementia Studies
South London and Maudsley NHS Foundation Trust
MHOA Directorate Offices
Maudsley Hospital
115 Denmark Hill
SE5 8AZ

Dear Dr Daley,

Study title:	Time for Dementia: Evaluation of a novel multi-professional longitudinal clerkship in dementia.
REC reference:	15/LO/0046
Protocol number:	N/A
Amendment number:	3 06.10.17
Amendment date:	07 November 2017
IRAS project ID:	165491

- The Time for Dementia programme is being rolled out to other universities across Kent and Sussex. The research team wish to introduce a new phase to the study, in order to evaluate the iterative development of the programme, as well as the transfer of learning into practice and upon clinical preferences. They would also like to continue to assess the programme on family (person with dementia and carer) quality of life.

This consists of 4 changes:

1. Consent new family carers to the study (Section A17-1) and ask them to complete self-report and proxy measures of Quality of Life. Consent to take part in the study and completion of measures will be undertaken by a research assistant by telephone.

The Research Team will continue to use the DEMQOL-proxy, a modified satisfaction survey and to introduce three new measures at this phase; The Clinical Dementia Rating Scale, The SF-DEM: Social Functioning in Dementia scale and the C-DEMQOL.

2. To invite people with dementia to take part in the qualitative evaluation of the study only. If the person with dementia is interested in taking part in either a focus group of in-depth interviews, a home visit will be arranged, and capacity to consent will be assessed and documented by a trained Research Worker prior to gaining consent to participate in the study. Participants who do have capacity will be asked to sign a consent form, those who do not, will not be consented into the study. The person with dementia and their carer will then be invited to undertake either a focus group or an in-depth interview.

3. To follow up students who have previously consented to take part in the study into practice and to obtain their consent to complete further measures of dementia knowledge and attitude, as well as clinical preferences. This will also involve qualitative interviews.

4. Study information about Time for Dementia will be placed on Social Media platforms, e.g. Facebook, Twitter with local trusts, Alzheimer's Society and local voluntary sector and carer groups.

The above amendment was reviewed at the meeting of the Sub-Committee held on 12 December 2017 by the Sub-Committee in correspondence.

Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

The Sub-Committee reviewed the amendment and requested confirmation that a lone worker/distress policy was in place. The Sub-Committee also requested further information in relation to the extra burden additional assessments would have on participants, and queried how this would be managed by the research team. The Sub-Committee also queried how the data from the focus groups would be collected and analysed.

Professor Banerjee responded on behalf of the research team and confirmed that a lone worker/distress policy was in place, and provided a copy for information. Professor Banerjee confirmed that the main burden for participants would be the interviews, however the research team had minimised the data that would be collected in order to reduce the burden of participation.

Professor Banerjee advised that focus groups would be audio recorded, transcribed verbatim and checked for accuracy. Professor Banerjee advised that analysis would combine the focus group and individual interview data and would begin with descriptive coding. Outstanding transcripts would then be coded from the other focus groups and individual interviews as part of the second phase. Professor

Appendix N.SS3 Participant information sheet

Regardless of whether you decide to take part or not take part in the study, it will have no impact on any reference which you might receive from your university.

What will happen to me if I take part?

If you do decide to take part, you will be given questionnaires to complete to assess your knowledge and attitudes towards dementia and long term illnesses as well as your career plans and clinical preferences. A small number of students will also be asked to take part in an individual interview. These will explore individuals career preferences, attitudes towards dementia, as well as depth of dementia knowledge and will be used to provide insight into student experiences of the Time for Dementia programme.

What are the possible disadvantages and risks of taking part?

The primary disadvantage of taking part is the time involved in the study however in most instances this is likely to be minimal. Questionnaires will be sent to you and should have minimal impact on your time. Those taking part in individual interviews will be asked to dedicate some additional time (approximately 1 hour in total) at a time and location that is convenient to you.

What if there is a problem?

If you have any problem concerning the research then please contact a member of the research team. You are able to withdraw from the research at any point. This will have no impact on it will have no impact on any reference which you might receive from your university. Your data already collected as part of the research will be kept for analysis and publication unless otherwise requested. If you do decide to withdraw consent for the use of your data, such data will be deleted from the research and will not be used in any subsequent analysis.

What are the possible benefits of taking part?

In taking part in this study, you will help us to evaluate the benefits of the Time for Dementia programme in the education of medical, paramedic and nursing students. This evaluation will provide vital information on the potential costs and benefits of the programme in terms of student satisfaction, knowledge and attitudes to long term conditions and in particular, dementia.

Will my information in this study be kept confidential?

Yes. Information gained from interviews and questionnaires will be kept confidential. When processing and storing information, we will comply with the Data Protection Act 2018 and the General Data Protection Regulations to protect your confidentiality and as such your information will be labelled or 'coded' with a participant number, not your name. We will work with the coded information for an indefinite period of time and store it securely. By agreeing to take part in this research,

you will be agreeing to your interview and questionnaire information, being seen by other people who will check that the research has been conducted correctly. These people will include the Medical Research Council, ethics committees and regularity authorities. Anyone who works with your information agrees to hold it in confidence.

What should I do if I want to take part?

If you wish to take part, please read and sign the consent form.

What will happen to the results of the research study?

When we have collected all the results for this study we will analyse them and then publish and present the results. You will not be identified in any publication or presentation. If you would like to find out more about any research published from this study, please contact the research team on the contact details below.

Who is organising and funding the research?

Time for Dementia is funded by Health Education England working across Kent, Sussex and Surrey.

Who has approved this study?

This research has been approved by NRES Committee – London Queen's Square.

Contact for Further Information

If you require any further information about this study then please do not hesitate to contact: Dr Stephanie Daley on 07717 571679.

Thank you for reading this information sheet.

Appendix O.SS3 Participant consent form



Newly Qualified Healthcare Professional Consent Form

TIME FOR DEMENTIA- Post Qualification

Please
initial
box

I confirm that I have read and understood the information sheet dated 06 October 2017 for the study (**Time for Dementia- Post Qualification**). I have had the chance to read the information and ask questions about the study and am satisfied with the answers I have been given.

I understand that my participation in this study is voluntary and that I am free to stop at any time, and I do not have to give a reason for doing so. I understand that if I ask to stop the study my medical care and legal rights will not be affected in any way.

I understand that all personal data relating to volunteers is held and processed in the strictest confidence, and in accordance with the Data Protection Act 2018 and the General Data Protection Regulations. I agree that I will not seek to restrict the use of the results of the study on the understanding that my anonymity is preserved.

Occasionally an external regulator or funding body may ask to look at the data for this study to check that it is being run correctly.

I understand that if I take part in an individual interview it will be recorded.

Name of Participant Date Signature

Researcher to complete:

- I have explained the information in this document and encouraged the participant to ask questions and provided adequate time to answer them.

Name of Researcher Date Signature
or Person Seeking Consent (If different from researcher)

Participant ID:

Appendix P. SS3 Example Topic Guide (with amendments)

Newly Qualified Healthcare Professionals – Draft Interview Topic guide - Phase 1 revisions

KEY: Red= TFD Cohort only. Yellow=Changes made in phase 1

Opening:

- Tell us a bit about where you are working now? (*Nurses: is this where you wanted to work*)

Career intentions

- What area do you wish to work in? Why?
(*If not known, currently most preferred areas*)
- What would be your least favoured areas to work in? Why?
- What do you think is the most important factor is important for you when considering your career choices?
- What other factors have influenced your thinking about your career preferences?
- In what way did your thoughts about your career preferences/ clinical specialties change during your training or work?

Working with patients with Dementia

- In your current role do you work with patients with dementia?
- Do you feel your undergraduate training prepared you for working with patients with dementia?
(*If yes/no- How so?*)
- What other experiences have you had of dementia? What influence has this had?
- What are the challenges working with people with dementia?
- What are the best aspects of working with patients with dementia?
- Do you feel Time for Dementia has influenced your practice in any way?
(*If yes – how so?*)
- What are your reflections on Time for Dementia?

Preferences for working with dementia

- What careers would you say specialise in working with people with dementia?
- What are your views on a career working with patients with dementia in [example career]?
(*Specifically identify areas they have identified, if not already explored in preferred/not preferred*)
- In general, how do you feel about working with people with dementia?
- Within your career, would you say you prefer or not prefer to work with patients with dementia? Why?
- Have your preferences for working with people with dementia changed over undergraduate? Or during work? Why?
(*Look at previous rankings given for changes to discuss*)
- Did the TFD programme impact upon your thinking about your clinical preferences/specialities?
- What do you think would influence students' preference for working with people with dementia?

Revision 1

Original questions:

What do you think is important for you when considering your career choices?

What do you think has influenced your thinking about your career preferences?

Changed to distinguish between most important factors and other factors.

Original questions:

What do you think is important for you

Revision 5

Question added to make explicit other experiences that have had an influence.

Revision 9

Previous questions:

What would you identify as a career working with dementia?

Do you see yourself working with patients with dementia in future?

Ask them specifically about areas they have identified as careers working with people with dementia from previous question. Rationale: to explore how they feel about these specific areas.

Revision 13

Before interview, look at students preferences to say if any marked changes- and ensure covered in interview, if not prompt.
Before interview, look at students preferences to say if any marked changes- and ensure covered in interview, if not prompt.

Appendix Q.SS3 Example Memos

Phase 1

26/09/2019 Reasons/factors for preferences. These preferences do not necessarily have to be for a chosen specialty (medics) or chosen career (nurses) but preferred areas i.e. some medical students have a preference for a specialty that they are not pursuing. These reasons/factors are concerning a specialty interest or specialty choices. Some students explain how they are not pursuing their first preferences.

13/08/2019 (taken from work log) discussion with SD:

The Code *limitations of medical treatment* is felt not to fit under the topic 'best aspects of working with people with dementia'. I need to change the name or put with a different topic. Perhaps change the name to: 'recognise the limitations of medical intervention but making difference another way' / 'making a difference other the medical intervention' / 'recognising need for intervention other than medical interventions'?

Previously named: Limitations of medical treatment

Changed to: Recognising the need to go beyond medical treatment

Phase 2

29/11/2019 Challenges= reason/factor for low preference?

Challenges described by students... are these framed as negatives of working with people with dementia? Or are they just what is difficult about it? I.e. do these difficulties link to reasons for low preferences? Or where preferences are high- What is the difference between the challenges students describe with low and high preferences? Go back and compare instances.

29/11/2019 Possible focused code: rewards of impacting patients

Possible names: rewards from making a difference, gaining rewards from impact, rewarding nature of the impact

Students feel that the best aspect of working with people with dementia is being able to 'make a difference' to the patient (inherent to goal in medicine/nursing, not unique to dementia) but acknowledges in dementia this is done through improving Quality of life. Specifically through:

Psychosocial interventions

Avoiding admissions

Skilled communication

Also the importance of involving other HCP- making a difference through referrals.

Appears relationship:

Making a difference → Rewarding

Students also describe satisfaction in 'doing the best you can' and feeling appreciated by patients. Also, the idea that because it is hard/condition so difficult making a difference the rewards are greater?

FURTHER DEVELOPMENT: The best aspect of improving quality of life- some students appear to relate this as outside of their role- does this come up elsewhere in interviews? Is there a difference between those with different preferences in terms of their perceptions of making a difference? What does the literature say about rewarding work in healthcare and in relation to choosing a healthcare career?

Phase 3

Memo on accounts of changes possible category: changes in preferences for working with dementia

These codes relate to accounts of change in preferences, stating when the change occurs and the cause (e.g. placements, previous experience or foundation year).

Of those that describe a change - There appears 5 main types of account:

Overcoming fears: experience undergraduate had on challenging fears for those with limited experience

Influence of specific placements: role of placements (Inc. TFD) influencing perspectives

Realities as foundation year doctor: facing the reality of foundation year/work

Gaining appreciation: an appreciation of working with people with dementia over time

Decreased preference due to exposure to other areas: gain more appreciation for acute

FURTHER DEVELOPMENT: explore further elements of when, cause and how preferences change?

What are the underlying factors/causes of change?

24/03/2020 Possible Category: role of the care environment

Other names: quality of care environment /suitability of care environment/

Participants described that the quality of care that patients would receive/ they would be able to deliver for people with dementia in particular settings. They described poor and good care environments or settings (or roles?) that would make it harder or more challenging to deliver care.

They expressed that a number of factors (e.g. environmental or external factors, characteristics of patients) meant that care would be sub-optimal for patients with dementia. A reoccurring theme was the contrast between poor and good quality care environments for people with dementia, specifically in contrast between acute and community care. Hospital wards were seen as 'no place for somebody with dementia' [Quote]* ...and some described unmet needs in particular settings, on describing a surgical ward: [Quote]... this had a direct influence on preferences for working with people with dementia within settings, and between settings: [Quote]

Theorized Relationships:

Rewards of impacting patients ---- participants would want to work in quality care environments where they had the chance to make a difference to patients (e.g. meet their needs). Reasons for the environment being poor are described as a complex interplay between perceptions of patients (nature of condition) and external or environmental factors (time, systems, and teams)

* Quotes have been removed from original notes.

Appendix R. SS3 Initial coding scheme phase 1

Phase 1 open coding.

Seven transcripts. Saved 23/10/2019

The table below outlines the number of individual codes, files and references linked to each topic. Topics were simple descriptive names for what the codes were related to. For instance, under 'best aspects of working with people with dementia' there were 13 unique codes, with 26 individual instances over the seven transcripts.

Name	Number of codes	Files	References
1.DEMENTIA	n/a	7	299
BEST ASPECTS OF PEOPLE WITH DEMENTIA	13	7	26
CHALLENGES OF WORKING WITH PEOPLE WITH DEMENTIA	23	7	32
CHANGES IN DEMENTIA PREFERENCES	4	5	5
CURRENT EXPEREINCES OF DEMENTIA	14	6	14
DEFINING SPECALTIES RELATED TO DEMENTIA	15	7	24
PERCEIVED INFLUENCES ON OTHER PEOPLES PREFERENCES	26	7	35
PERSONAL EDUCATIONAL EXPEREINCES OF DEMENTIA	27	7	45
PREFERENCE FOR WORKING WITH PEOPLE WITH DEMENTIA	27	7	28
PREFERENCES FOR CAREERS WORKING WITH PEOPLE WITH DEMENTIA	33	4	48
LONG TERM CARE	2	1	3
NOT PREFFERED (Dementia on wards)	15	2	32
NOT PREFFERED (OAP)	13	2	13
RECOMENDATIONS AND PERECPTIONS OF EDUCATION IN DEMENTIA	15	7	19
WORKING WITH PEOPLE WITH DEMENTIA IN FUTURE	15	6	23
2. REASONS FOR PREFERENCES	47	7	66
3.CHANGES IN PREFERENCES	12	7	43
4.MOST IMPORTANT FACTORS	23	7	32
5.LEAST FAVOURED (Not D related)	15	5	16
MISC	4	4	7
TOTAL	313	7	463

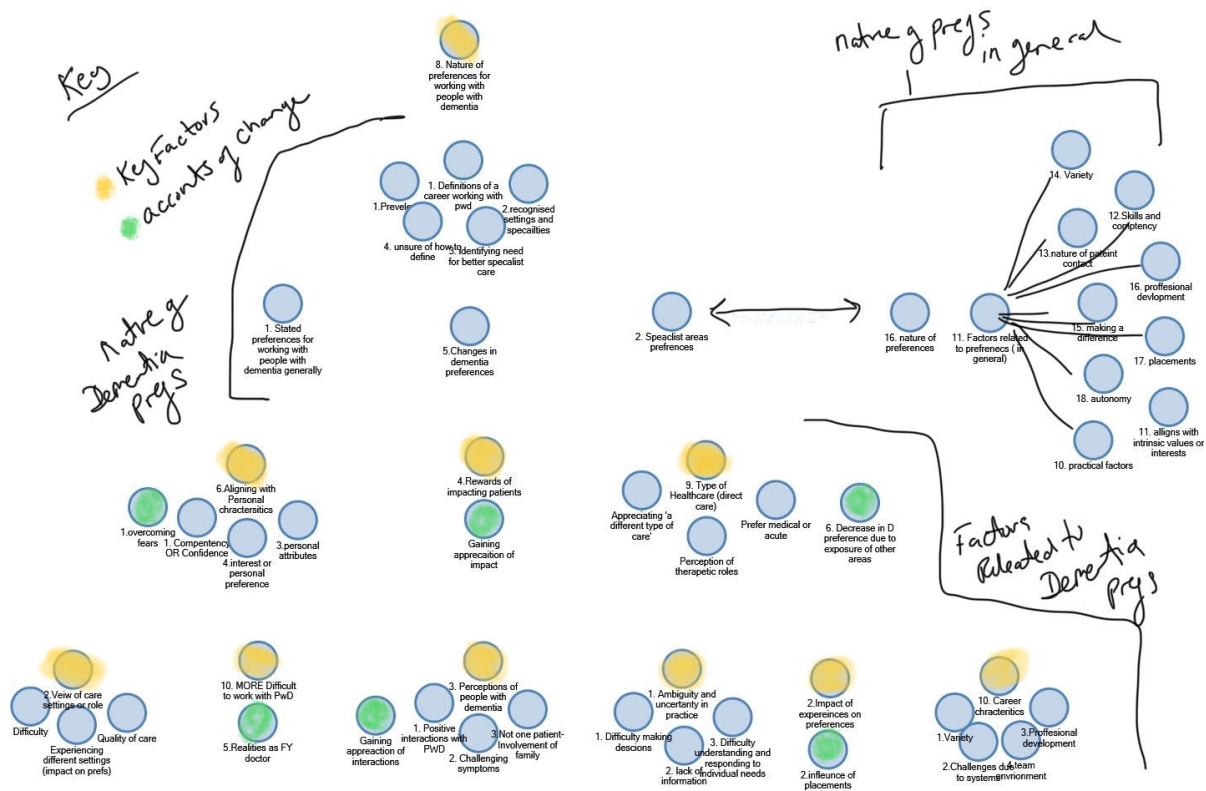
Appendix S. SS3 Focused coding scheme phase 2

16 transcripts. Saved 12/02/2020

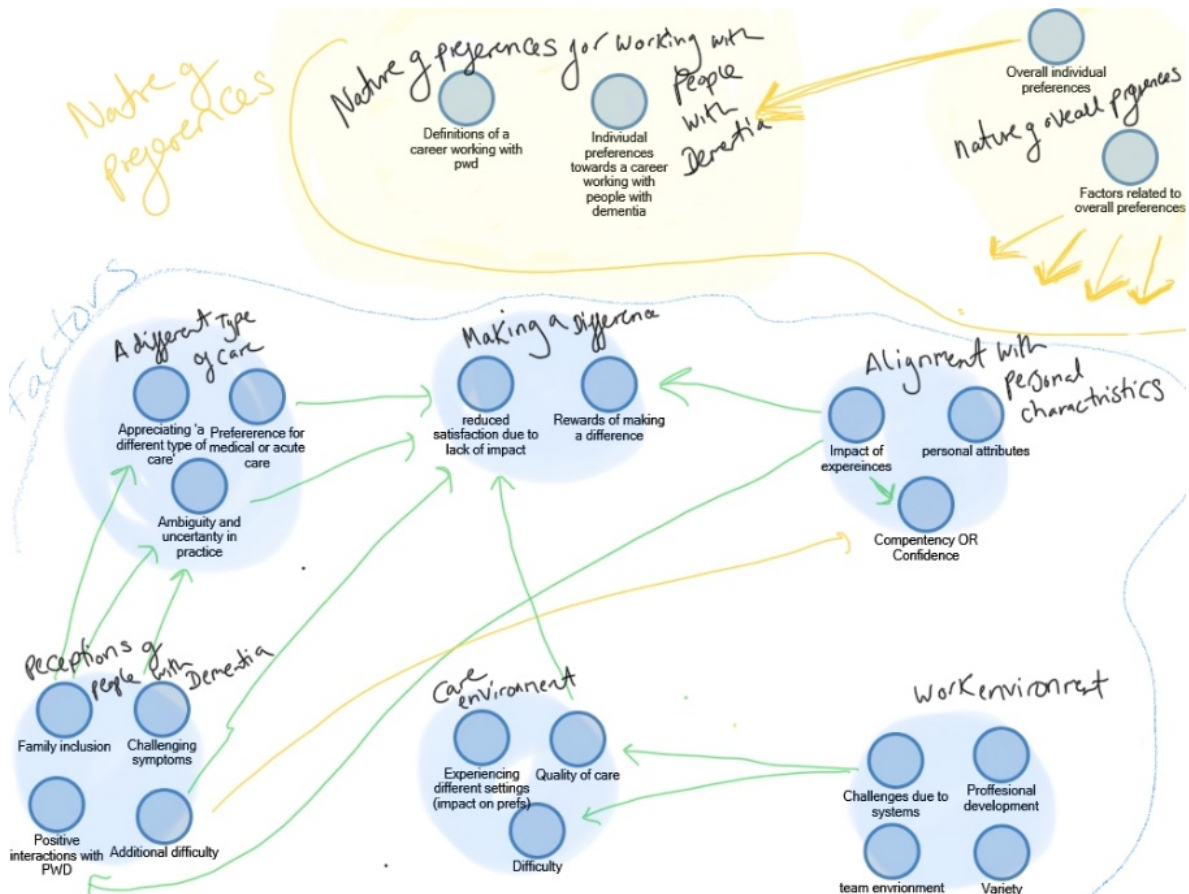
	Files	References
MAIN FOCUSED CODES	16	499
1. Nature of preferences for working with people with dementia	16	105
1. Definitions of a career working with person with dementia	16	59
2. Direction of preferences	16	46
2.Rewards of impacting patients	14	69
1. Making a difference	10	28
2. Difficult to make a difference	7	20
3. Rewarding	7	14
4. Unsatisfying	3	7
3. Perceptions of people with dementia	16	65
1. Difficult symptoms	13	30
2. Positive interactions with person with dementia	6	19
3. Not <i>one</i> patient- Involvement of family	8	13
4. Differences between person with dementia	2	3
4. external or environmental factors	11	49
1.Time	7	22
2.team environment	5	12
3.Proffesional development	3	8
4.Challenges due to systems	4	7
5.Aligning with Personal characteristics	15	43
1.Impact of experiences on preferences	12	18
2. Competency OR Confidence	10	17
3.personal attributes	2	6
4.interest or personal preference	2	2
6. Role of Care environment	8	37
7.Changes in dementia preferences	15	29
1.overcoming fears	3	11
2.infleunce of placements	4	8
3.stable preference for working with person with dementia	5	5
4.gaining appreciation	3	3
5.Realities as FY doctor	2	2
8. Ambiguity and uncertainty in practice	9	27
1. lack of information	5	15
2. Difficulty making decisions	3	7
3. Difficulty understanding and responding to individual needs	3	4
9. Role or type of nursing or medicine	7	18
10. MORE Difficult to work with Person with dementia	7	15
MISC codes to drop or develop	13	42

Appendix T. SS3 Examples of mapping exercises

Example 1: Mapping of hierarchy of initial focused codes



Example 2: Mapping of relationships between final categories and subcategories



Appendix U. Systematic review update 26/05/20

The search for the systematic review in SS1 was conducted in September 2018. To ensure that the most recent literature was included in the final conceptual framework an update was conducted in May 2020. This was after SS3 (chapter 5) and before the integration (chapter 6). This consisted of examining all of the alert searches (that were set up during the main search) and a review of papers known to the researcher for possible relevant articles that might meet the original criteria. This was conducted by MH, who screened each possibly relevant article based on title and abstract for relevance, those irrelevant were discarded. A second reviewer was not used for pragmatic reasons. 22 papers were identified and the full text downloaded and added to Endnote (version X7). These were screened against the original criteria. Five papers were included and extracted onto the existing template. A review for potential multiple publications of data was conducted. A narrative summary is provided below, followed by a summary of each study and its factors in a Table.

Summary of factors

Two studies of medical students were found; both only explored educational interventions in relation to career preferences. One found qualitative support for a positive impact on preferences (Goldman and Trommer, 2019) while another found no significant difference (Washington and Shaw, 2019). This is reflective of the original review with multiple, but not all educational interventions finding associations. The study that found an association is for a project that involved longitudinal contact with people with dementia which is of particular relevance for this review as one of only two studies to explore this.

Three studies explored nursing preferences, including factors of student characteristics, course characteristics, experiences and work characteristics

Student characteristics: two studies found evidence for an association with female gender (Chai et al., 2019, Matarese et al., 2019), consistent with the review. There was continued mixed evidence on age; one study found older students held higher preferences (Matarese et al., 2019), while another was not significant (Chai et al., 2019). Year of undergraduate study was only explored in one study and found not significant (Matarese et al., 2019). Nationality was found significant in one study (Matarese et al., 2019) supporting previous evidence that cultural contexts are a factor. One study explored family characteristics and found a good relationship with older people was related while living with older family members and experience of taking care of the elderly were not (Chai et al., 2019). This study also found that attitudes to older people found positively associated, as consistently found in the review. Interestingly this study also found a positive association with empathy, which was not previously explored quantitatively (Chai et al., 2019).

Course characteristics; there was evidence that attending Public University (vs private) was associated (Matarese et al., 2019); which supports a previous finding in the review. One study found that positive evaluations of gerontological nurse teachers' abilities were significantly associated with preferences; which is a novel finding (Garbrah et al., 2020).

Experiences: Previous work experience was not associated in one study (Matarese et al., 2019), in contradiction to the majority of nursing findings in the review. One study found preferences were greater the end of clinical placement rather than the end, and associated with positive ratings of gerontological placement (Chai et al., 2019), supporting placements as a factor.

Work characteristics: one study found that the emotional nature of the work, anxiety with ageing, was associated with preferences, this mirrored results of one other previous study in the review. However, this also conducted in China with the same researchers; the relationship between the studies was unclear and this may be from the same dataset.

In conclusion, few studies met the original criteria in the period from September 2018 to May 2020, none were in the UK. These results are generally confirmatory of the review findings and do not tip the balance of the evidence in new directions. Important findings include that one study explored preferences related to dementia (Goldman and Trommer, 2019) and two novel findings were found in relation to working with older people; empathy (Chai et al., 2019) and gerontological teachers' abilities (Garbrah et al., 2020) were positively associated with preferences. Caution is needed when interpreting these results due to the lack of systematic procedures. However, this exercise provides confidence in previous conclusions by considering the most recent published literature.

Systematic review update: summary table

Short Reference (Full references below)	Design/ Methods	Participants Student type, Country Number: Qt= Quantitative Ql= Qualitative	Main Objectives	Factors (Qt variables or Ql themes) (+/-) sig p>0.05 or ns or main theme
Goldman, J. S., & Trommer, A. E. (2019)	Qualitative (reflections)	Pre-Med students USA Qt= n/a Ql=95	To evaluate the impact of ' a friend for Rachel' a dementia educational intervention	Theme: Educational intervention 'Impact on career choice and learning about good medicine'
Matarese, M. et al. (2019).	Cross sectional survey	Nursing students Italy Qt= 1534 Ql=n/a	The study aimed to 1) identify the most and least preferred areas of clinical practice for their future career of undergraduate students attending Italian nursing schools, and 2) determine the student characteristics that influence their career preferences.'	Variables: Age Sig (+), Gender Sig (Female vs male) Year group , ns Type of course Sig (Public vs private.) Nationality Sig (Italian vs Others) Previous work experience , ns
Chai, X., et al. (2019)	Longitudinal Survey (3 time points, 1m, 4m, 7m end of 3rd year clinical placement)	Nursing China Qt= 305 matched data Ql=n/a	The objectives of this study were to examine student nurses' career motivation toward gerontological nursing and to explore potential predictors using Bandura's reciprocal determinism.	Variables: Gender Sig (Female vs male) Age , N.S Clinical placement Sig (beginning of clinical placement lowest) Clinical practice environment , Sig (+) Family characteristics Sig (good relationship with older people Yes vs No), n.s lived with older family members, n.s experience of taking care of elderly Attitudes Sig (+) towards older people, Sig (+) empathy Emotional nature of work Sig (-) ageing anxiety Misc. student characteristics Sig (nursing top major vs not top major) , ns (living rural places)
Garbrah, W., Kankkunen, P., & Välimäki, T. (2020)	Cross sectional survey	Nursing Finland Qt=4243 Ql=n/a	To explore nursing students' perspectives of their gerontological nurse teachers' abilities and its association with the students' willingness in older people nursing.	Variables: Course characteristics Sig (+) (evaluation of gerontological nurse teachers ability's)
Washington, E., & Shaw, C. (2019)	Quasi - experimental pre/post Survey following intervention	Medical students USA Qt= 92 Ql=n/a	To evaluate a pilot of a virtual reality (VR) geriatric immersion prior to the start of their geriatrics coursework	Variables: educational intervention N.s

Appendix V. Extraction of results from SS1, SS2 and SS3

SS1: Systematic review Dementia preferences: Var (sig) and themes, and commentary. Older people preferences: summary of evidence for 'factor'	SS2: Longitudinal survey data Variables: Significant finding= Sig (P<0.05) univariate (unless stated) OR Non-significant = n.s Association with preferences (recorded only if sig): Positive= (+) , negative (-) or descriptive (vs) Themes: combined themes	SS3 : Grounded theory study Themes: conceptual categories and sub categories relating to factors.
<p>Dementia only results:</p> <p>Variables:</p> <ul style="list-style-type: none"> Age (older sig) , Attitudes: positive ageism (sig) Negative ageism (n.s) Aged care Intervention (n.s), (McKenzie and Brown, 2014) Indication for year and gender (for working with 'cognitively intact' older adults) (Diachun et al., 2006b) <p>Themes:</p> <ul style="list-style-type: none"> profession (conditions, culture, diversity), personal demands (physical and emotional), patient contact (communication and safety) experience (lack of, previous) (McKenzie and Brown, 2014) Intervention –'Influence on specialisation', (Jefferson et al., 2012) 'Impact on career choice and learning about good medicine' (Goldman and Trommer, 2019) <p><u>Commentary :</u> Suggestions that working with people with dementia may be detrimental to preferences for working with older people (Che et al., 2018, Swanlund and Kujath, 2012) Also generally references to challenges of working with people with dementia when working with older people in themes/ quotes used in literature.</p>	<p>Variables</p> <ul style="list-style-type: none"> TFD Sig (+) (multivariate medical students) Gender: Female (medical not nursing) Age n.s Ethnicity n.s Only explored in nursing: Course year (lower) Attitude Sig (ADQ, DAS, MCRS T1&T3 , only MCRS multivariate) Knowledge Sig (DK T1 only, ADKS n.s T1&T3) Empathy sig (Jeff T1 & T2) Previous experience (T1 only) Nursing branch: Sig T1 & T3 (Mental health vs Adult Nurses) T1 multivariate only. <p>Themes:</p> <ul style="list-style-type: none"> <i>Prevalence-</i> recognition of inevitability. Includes <i>inevitable</i> (doctors) <i>recognising prevalence</i> (nurses) <i>Not now</i>, for nurses- in future, <i>prefer to gain new experiences, pursue in future.</i> <i>Enjoyment and Interest/other interests: lack of interest, interest/enjoy related specialties (doctors), enjoyment and interest, prefer other areas (nurses)</i> <i>Negative aspects of the work/ characteristics of the work:</i> challenges meeting needs, communication challenges and work environment. Emotional difficulties and personal attributes needed (doctors only?) <i>Positive aspects of work:</i> rewarding nature, enjoyment. Holistic (nurses), complexity and personal attribute and confidence (doctors) 	<p>Themes:</p> <p><i>Making a difference</i></p> <ul style="list-style-type: none"> Rewards of making a difference Reduced satisfaction in lack of impact <p><i>Alignment with personal characteristics</i></p> <ul style="list-style-type: none"> Competency or confidence Impact of experience Personal attributes <p><i>A different type of care</i></p> <ul style="list-style-type: none"> Appreciating 'a different type of care' Preference for medical or acute care Ambiguity or uncertainty <p><i>Perceptions of people with dementia</i></p> <ul style="list-style-type: none"> Care Challenges (challenging symptoms) Additional difficulty Positive interactions with people with dementia Involvement of family <p><i>Care environment</i></p> <ul style="list-style-type: none"> Difficult care environment Quality of care Experiencing different settings <p><i>Career characteristics</i></p> <ul style="list-style-type: none"> Team environment Challenges due to systems Professional development Variety

<p>All findings (older adult literature)</p> <p><u>Overall Key factors (older adult lit):</u> Attitudes- consistently related Characteristics of work, patients and career- boring, emotional, focus on QoL, nature of illness, Commination difficulties, and negative dispositions. knowledge and feeling prepared, cultural context, Role of HEI and interventions (decrease over education, and influence of interventions) Positive factors- limited but relationships, enjoy interactions, autonomy in nurses. student characteristics (female gender)</p> <p><u>Overall Categories:</u></p> <ol style="list-style-type: none"> 1. <i>student characteristics</i> (age, gender, year of training, ethnicity and nationality, religion, family characteristics, knowledge, positive attitudes) 2. <i>course characteristics</i> (no clear associations- public vs private) 3. <i>experiences</i> (previous experience, clinical placements, educational, general experiences) 4. <i>career characteristics</i> (professional development, financial and prestige considerations, lifestyle considerations) 5. <i>patient characteristics</i> (age, communication difficulties, nature of illness, disposition of patient and family) 6. <i>Work characteristics</i> (complexity, boring, emotional nature of the work, control and autonomy, poor environment. Focus on quality of life (as a barrier), positives of work (long term relationships and rewarding), lack of procedures, heavy workload) 7. <i>TPB</i> (attitudes, subjective norms, PBC) 	<ul style="list-style-type: none"> • <i>Personal attributes and Skill set: (aligns with personal skill set/ lack of skills experience-nurses) for doctors discusses personal characteristics in negative/positive of work.</i> • <i>Influence of experiences- positive past experiences, personal experiences (nurses).</i> <p>Themes broken down by student type:</p> <p><u>Doctors:</u> <i>Negative aspects of work-</i> emotional difficulties, and challenges meeting needs and personal barrier including feeling personal characteristics needed. <i>Lack of interest</i> <i>Interest /enjoy related specialties</i> <i>Positive aspects of the work</i> - rewarding, enjoyment and complexity, personal attributes including understand needs and confidence in communication skills</p> <p>Themes not directly related to preferences: <i>Inevitable, Would not discriminate, Recognition of importance, Ambivalence, Depends on specialty.</i></p> <p><u>Nurses</u> <i>Aligns with personal skill set</i> <i>Positive aspects of work-</i>holistic and rewarding <i>Enjoyment and interest</i> <i>Positive past experiences</i> <i>Prefer other areas</i> <i>Negatives characteristics work-</i> with the work environment and communication with patients. <i>Lack of skills or experience</i> <i>Personal Experiences</i> <i>prefer to gain new experiences</i></p> <p>Other comments: general prevalence and pursue in future</p>	
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Appendix W. Components of the conceptual framework

<p>Components of the framework:</p> <p>Concepts:</p> <p>Definition</p> <p>Main Factor</p> <p>Contextual factors</p>	<p>Evidence from sub-studies</p> <p>SS1: Individual themes/variables from dementia-specific studies [older adults: factors found within the literature of preferences for working with older people or general commentary]</p> <p>SS2: Variables or themes (both nurses and doctors)</p> <p>SS3: Themes (Conceptual categories and subcategories)</p> <p>n/a= not explored</p> <p>Themes: main qualitative <i>themes</i></p> <p>Variables: Sig= (p<0.05) OR Non-significant = n.s Association with preferences (recorded only if sig): Positive= (+) , negative (-) or descriptive</p>	<p>Do results confirm, contradict, or expand.</p> <p>Nature of association for dementia preferences.</p> <p>(I.e. do findings support each other? do they contradict each other? does one result explain or add insight to another? what is the nature of the association?)</p>	<p>Evaluation of evidence for factor</p> <p>Limited/further study= Not explored across studies/limited evidence that needs further study</p> <p>Moderate= Some supporting evidence across studies.</p> <p>Consistent = sources of confirmatory evidence/ major qualitative theme supported by other evidence/multiple significant quantitative results</p>
<p>Main Factor: Student characteristics and perceived alignment with attributes</p>			
<p>Age</p>	<p>SS1: Age Sig (+). (McKenzie and Brown, 2014) [Older adults: limited evidence for Age Sig (-)]</p> <p>SS2: n.s relationship</p> <p>SS3: Maturity is mentioned as a character trait (in theme <i>personal attributes</i>)</p>	<p>SS2 did not confirm the previous finding in SS1 that older students had higher preferences.</p> <p>SS3 some students held perception that younger students are more focused on technical and fast-paced and 'maturity' needed for working in dementia.</p>	<p><i>Limited evidence for association with age: possibly older students.</i></p>
<p>Gender</p>	<p>SS1: Some limited evidence for dementia -male more likely to want to work with 'cognitively intact' patients. (Diachun et al., 2006b) [Older adults: Female consistently + associated]</p> <p>SS2: Female Sig (in medics)</p> <p>SS3: n/a</p>	<p>SS1 Suggested possible link that was confirmed in SS2 (medical only).</p> <p>Gender not explored in SS3 due to qualitative nature.</p>	<p><i>Moderate Evidence for female preferences</i></p>

Cultural influencers: Ethnicity, nationality and religion	<p>Ss1: n/a</p> <p>[Older adults: indications for cultural considerations - ethnicity, nationality and religion]</p> <p>SS2: n.s relationship found for ethnicity (White British vs Other ethnic groups). No comparisons of nationality or religion.</p> <p>SS3: isolated accounts of cultural influence within <i>personal attributes</i> theme. UK Context.</p>	<p>SS2 did not confirm SS1 finding of differences in ethnicity for working with older people. Indications of complexity in SS3.</p>	<p><i>Area for further study</i></p>
Student type	<p>SS1: n/a</p> <p>[Older adults: n/a]</p> <p>SS2: Nursing branch Sig (Mental health vs Adult),</p> <p>SS3: n/a</p>	<p>Not explored in previous literature (SS1), differences found between nursing branches in SS2. Differences between nurses and doctors and preferences not explored in SS2 or SS3, however observations of differences in the relevance of themes between doctors and nurses in SS3.</p>	<p><i>Limited evidence for high or low preferences associated with student type, but contextual differences in the importance of some factors.</i></p>
Knowledge & Perceived competency	<p>SS1: Theme: <i>experiences (lack of)</i>. (McKenzie and Brown, 2014)</p> <p>[Older adults: Limited association for association with objective knowledge in both nurses and doctors; more qualitative evidence about perceived skills, and PBC (In nurses)].</p> <p>SS2: Theme: <i>personal attributes and skill set</i>. Variable: knowledge Sig (+) at T1 (univariate only) but not at T3.</p> <p>SS3: Major theme: <i>competency and confidence</i>. There was a clear dichotomy in those who held higher or lower preferences in terms of their perceived competency or confidence in working with people with dementia. Accounts of how changed also how increased in other areas dulls original interest.</p>	<p>Consistent confirmation for perception (SS1,SS2,SS3), weak for objective knowledge.</p> <p>SS3: expands on why.</p>	<p><i>Consistent evidence as a central factor</i></p>

<p>Empathy (general)</p>	<p>SS1: n/a [Older adults: one study found a relationship with empathy and nurses preference for gerontology in china (chai 2019)]</p> <p>SS2: Var: Sig (+) associated at T1 and T3 (nurses only)</p> <p>SS3: Mentioned as a character trait (in theme <i>personal attributes</i>)</p>	<p>Association with general empathy found in SS2, Also in SS1 but only with older people. Very minor subtheme in SS3.</p>	<p><i>Limited evidence: area for further study</i></p>
<p>Attitudes (Quantitative measures)</p>	<p>SS1: Ageism Sig (+).(McKenzie and Brown, 2014) [Older adults: consistent association but varied definition of the construct.]</p> <p>SS2: Var: Sig (+). Specifically: MCRS, ADQ and DAS at T1 and T3. MCRS significant multivariate predictor (nurses only)</p> <p>SS3: Not quantitatively measured, but themes relating for preferences include salient attitudes, feelings and thoughts about people with dementia and working with people with dementia were explored.</p>	<p>SS1 and SS2 Confirm that quantitative measures of attitudes associated with dementia preferences.</p> <p>SS3: expands on this finding by exploring attitudes to patients with dementia in a healthcare setting related to preferences with the most salient conceptualised within factors in this framework.</p>	<p><i>Consistent evidence for higher preferences associated with positive attitudes</i></p>

Main Factor: Impact of Experiences			
<p>Overall experiences</p>	<p>Overall experiences could be characterised as those individuals that had positive or negative influencers to preferences. Various types of experiences and ways of influence.</p> <p>SS1: Themes: negative experiences = <i>experiences (previous)</i> (McKenzie and Brown, 2014), educational interventions= <i>Influence on specialisation (Jefferson et al., 2012)</i>, '<i>Impact on career choice and learning about good medicine</i>'(Goldman and Trommer, 2019).</p> <p>Var: Aged care placement n.s (McKenzie and Brown, 2014), Also commentary that dementia exposure detrimental to working with older people.</p> <p>[older people: mixed evidence for experiences i.e. previous experience, clinical placements, educational, general experiences]</p> <p>SS2: Themes: influences of experiences; <i>positive past experiences and personal experiences (-)</i> (nurses).</p> <p>Var: T1 Previous experience Sig (+) and TFD Sig (+).</p> <p>SS3: Major theme- the <i>impact of experiences</i>: students describe how various positive or negative experiences have shaped their preferences</p>	<p>Evidence overall that various types of individual experiences can contribute to held preferences positively or negatively. SS3 expanded on influence; Participants identified how their experiences impacted their <i>confidence or competency</i>, recognition of the <i>rewards of making a difference</i> and appreciate <i>positive interactions</i> with people with dementia.'</p>	<p><i>Consistent Evidence for the impact of some individual experiences contributing to preferences.</i></p>

<p>Pre-educational experience</p>	<p>SS1: n/a</p> <p>[For older adults: Strong support for a positive relationship in nurses. Association not consistently found in medical.]</p> <p>SS2: Var: previous experience Sig (+) correlated T1, not T3 (Nurses)</p> <p>SS3: identified within Theme: <i>Impact of experiences</i></p>	<p>Not explored in dementia but some association in nurses for older adults found in SS1, This was also found In SS2 (Only able to explore nurses). However only for T1.</p> <p>SS3: found that students described the previous experience in terms of increasing <i>competency or confidence</i></p>	<p><i>Limited evidence</i></p>
<p>Dementia Educational programmes</p>	<p>SS1: Aged care placement n.s (McKenzie and Brown, 2014). Themes: 'Influence on specialisation' (Jefferson et al., 2012) and 'Impact on career choice and learning about good medicine' (Goldman and Trommer, 2019).</p> <p>[Evidence In older adult literature for interventions with older adults]</p> <p>SS2: TFD Sig (+) associated with nurses (at univariate level) and medical students.</p> <p>SS3: identified within Theme: <i>Impact of experience.</i></p>	<p>SS1 and SS2 some confirmatory evidence for an association.</p> <p>SS3: Confirms that some students recognised impact on preferences (more generally rather than for a recognised specialty) and expands on why may influence.</p>	<p><i>Consistent evidence</i></p>
<p>Personal experiences (e.g. Family)</p>	<p>SS1: n/a</p> <p>[older people: some evidence that family characteristics of students e.g. relationships with older family member influences working with older people- mainly positively]</p> <p>SS2: <i>Personal experiences</i> as a deterrent (nurses)</p> <p>SS3: positive influence described in Theme: <i>impact of experiences.</i></p>	<p>SS2 and SS3 suggest that for some students experiences with family affect their preferences, but describe contradictory influences. While in SS2 some described how experience with family negatively Influenced preferences in SS3 this was consistently described as a positive influence and included: wanting to make a difference and implement change; increased confidence; and realising the enjoyment from interactions with people with dementia.</p>	<p><i>Limited evidence for the influence of experiences with family, mixed directions.</i></p>

Placements	<p>SS1: Theme: barriers= experiences (previous) (McKenzie and Brown, 2014).</p> <p>[older people: Clinical placements (Inc. role of quality placements) and general commentary about exposure to people with dementia being detrimental to preferences for working with people with dementia]</p> <p>SS2: placements cited throughout themes as reasons/ experience of working with people with dementia e.g. <i>positive past experiences</i> (nurses) and interest/enjoy related specialties.</p> <p>SS3: see Theme – <i>impact of experience</i>; Role of evaluation fit and building perceptions of specialties. Also within theme <i>experiencing different settings</i> suggests students see that experience working with people with dementia in different settings may be influential in preferences.</p>	All sub-studies indicate some influence of placements of preferences, in the general or specific context.	<i>Consistent evidence</i>
Main Factor: Making a difference			
Rewards of making a difference	<p>SS1: n/a</p> <p>[Older people: rewarding nature of work identified in positives of work factor, and also links to control and autonomy factor]</p> <p>SS2: Themes: ‘rewarding’ was a feature of <i>positive aspects</i> theme.</p> <p>SS3: Major Theme: <i>Rewards of making a difference</i></p>	SS3 Expands on observation of working with people with dementia as ‘rewarding’ (SS2) and helps link between other factors how might influence preferences. The rewarding attributes of working with older people were identified in SS1.	<i>Consistent evidence for central factor in higher preferences.</i>

<p>Reduced satisfaction due to lack of impact</p>	<p>SS1: no direct account for dementia but links to other factors found (e.g. characteristics of patients/work/competency) to preferences.</p> <p>[Older people: 'lack of impact' found as a trait in factors around patient characteristics, specifically the nature of patients illness]</p> <p>SS2: Challenging meeting needs in <i>negative aspects of the work</i> theme (doctors)</p> <p>SS3:Major Theme: <i>reduced satisfaction due to lack of impact</i></p>	<p>SS3: Expands previous understanding of barriers and challenges by linking together and explanation for impact preferences.</p>	<p><i>Evidence as central factor for why other factors affect negatively</i></p>
<p>Main Factor: A different type of care</p>			
<p>Appreciating a different type of care</p>	<p>SS1: n/a- lack of positive research</p> <p>[Older people: Some evidence for link with appreciating unique aspects of work such relationships and complexity]</p> <p>SS2: Within Theme: <i>positive aspects of work</i> students acknowledge the complexity and holistic nature of work.</p> <p>SS3: Major Theme '<i>appreciating a different type of care</i>'</p>	<p>SS3 Expands on previous findings of positive aspects related to its more unique characteristics of the work</p>	<p><i>Consistent Evidence for central factor in higher preferences.</i></p>
<p>Preferences for medical or acute,</p>	<p>SS1: n/a</p> <p>[Older people: characteristics of patients; nature of illness and work characteristics: link to focus of QoL (barrier), lack of procedures]</p> <p>SS2: n/a, related to Theme: other interests, as students related low preferences to other interests.</p>	<p>SS3 Expands on students see work as not aligning with type of work they wish to do and value.</p>	<p><i>Consistent Evidence for central factor in lower preferences.</i></p>

	<p>Nb. Popularity of acute/medical areas</p> <p>SS3: Theme: <i>preferences for medical or acute</i></p>		
Ambiguity or uncertainty	<p>SS1:n/a</p> <p>[Older people: within complexity factor e.g. lack of comfort and ambiguity found associated with geriatrics]</p> <p>SS2: n/a</p> <p>SS3: Theme: <i>Ambiguity or uncertainty</i></p>	<p>Not explored or identified a theme in SS1 and SS2 in dementia, but some indications in older adult literature around complexity and ambiguity. SS3 found descriptions of ambiguity and uncertainty in negative preferences.</p>	<p><i>Moderate evidence for lower preferences</i></p>
Stigma and prestige of profession	<p>SS1: n/a</p> <p>[Older people: career characteristics: prestige (in financial and prestige factor) and subjective norms in TPB]</p> <p>SS2: n/a</p> <p>SS3: Acknowledgement throughout that it is not generally perceived as a desired area. It is unclear how this directly impacts individual preferences.</p>	<p>No sub study specifically explored or identified a link for prestige of the work directly impacting preferences for working with dementia, however evidence for the perceived understanding of lower prestige, and indications of factor in previous research in older people.</p>	<p><i>Area for Further study</i></p>

Main Factor: Perceptions of patients with dementia			
<p>Care Challenges (Challenging symptoms)</p>	<p>SS1: Themes: patient contact (communication and safety) (<i>McKenzie and Brown, 2014</i>).</p> <p>[Older people: patient characteristics: communication difficulties, disposition). in commentary, dementia used examples in of challenges working with older people]</p> <p>SS2: Themes: difficulties with communication mentioned in <i>negative aspects of work</i> theme.</p> <p>SS3: Participants outlined symptoms, behaviour or characteristics of dementia that they found particularly challenging. These included:</p> <ul style="list-style-type: none"> • Difficulties in Communication • Lack of patient compliance • High-risk patients • Complexity • Differences between patients • Aggression <p>While these challenges were not in isolation a factor for negative preferences, they were related to (or caused) many other factors which were found to be difficult, for example, difficulties in communication and differences between patients contributed to the perception of <i>ambiguity and uncertainty</i> in practice. These care challenges also contributed to the perception of <i>additional difficulties with this patient group</i>.</p>	<p>All 3 studies confirm that communication with patients is identified as a challenge.</p> <p>SS3 highlights that communication and other care challenges affect preferences through the resulting type of work, and the additional difficulty it poses (compared to other patients)</p>	<p><i>Consistent evidence, particularly communication difficulties</i></p>

<p>Additional difficulty</p>	<p>SS1 & SS2: challenges and difficulties identified implied why low preference, but no central themes or variables about it being <u>more</u> difficult.</p> <p>SS3: Theme: additional difficulty</p>	<p>SS1 and SS2 implied difficulties identified, but SS3 expands on how because of these difficulties, seen as more difficult than other patients can result in lower preference. Difficulties viewed differently for those with preferences.</p>	<p><i>Moderate Evidence for factor, particularly in the context of general preferences</i></p>
<p>Positive interactions</p>	<p>SS1: n/a.</p> <p>[older people: in positives of work- enjoy interactions and relationships]</p> <p>SS2: No single theme but identified across themes: <i>positive aspects</i> of work and <i>enjoyment and interest</i> working with people with dementia around interactions and relationships</p> <p>SS3: Theme: <i>positive interactions</i></p>	<p>Not found to be explored in SS1, limited evidence in older people literature. SS2 and SS3 that positive interactions with patients attributed to preferences.</p>	<p><i>Consistent evidence for the higher preferences</i></p>
<p>Involvement of family</p>	<p>SS1: n/a</p> <p>[older people: In the disposition of family and patient factor: difficult family dynamics explored for geriatrics but not found sig]</p> <p>SS2: n/a</p> <p>SS3: Theme: <i>Involvement of family</i></p>	<p>No evidence for being associated with preferences ss1 and SS2. SS3 illustrated that students felt it could be one of the <i>additional difficulties</i> related to working with people with dementia but also reflected on how part of holistic nature and positive of <i>different type of care</i>.</p>	<p><i>Limited Evidence, as a component in perceptions adding to factors.</i></p>

Main Factor: Career characteristics			
Team environment	<p>SS1: n/a</p> <p>[older people: mentors as influencers within <i>clinical placements</i> factor]</p> <p>SS2:n/a</p> <p>SS3: Theme: <i>team environment</i> - as important and perception of good teams</p>	No evidence explored or found in SS1 & SS2. SS3 some evidence for perceptions of good teams (as positive) and consideration in preferences.	<i>Limited evidence</i>
Challenges due to systems & work environment	<p>SS1: Theme: profession (conditions); staffing, Theme: profession (culture): unethical behaviour, Personal demands (physical) (McKenzie and Brown, 2014).</p> <p>[Older people: heavy workload (physicality), poor environment (resources)]</p> <p>SS2: Theme: under <i>negative aspects of the work</i> mentions work environment</p> <p>SS3: Themes: <i>Challenges due to systems and care environment (quality and difficulty)</i>.</p>	SS1, SS2, SS3 confirm negative views of work Specifically systemic challenges (organisation and resources issues) and views of working with people with dementia is some care environments with difficulty and reduced quality patient care.	<i>Consistent evidence</i>
Professional development	<p>SS1: Theme: profession (culture /conditions) includes stigma of the profession, and pay.(McKenzie and Brown, 2014)</p> <p>[older people: <i>Career characteristics: professional development</i> (nurses only), and financial concerns (in <i>prestige and financial concerns</i>)]</p> <p>SS2: Small theme: <i>prefer to gain new experiences</i> (nurses only)</p> <p>SS3: Theme; <i>professional development</i> (mainly nurses)</p>	SS1, SS2, SS3 evidence that not seen as best for professional development, acquiring skills or pay. Nurses only.	<i>Consistent evidence (nurses only)</i>
Variety	<p>SS1: Theme: <i>profession (diversity)</i> (McKenzie and Brown, 2014).</p> <p>[Older adults: Boring and unchallenging- consistent theme - diversity in practice and monotonous work cited]</p>	SS1 found barrier is lack of variety, SS3 found both positive and negative. No results in SS2.	<i>Moderate evidence</i>

	<p>SS2: n/a</p> <p>SS3: Theme: <i>variety</i></p>		
<p>Emotional Nature of the work</p>	<p>SS1: Theme: <i>physical (emotional) (McKenzie and Brown, 2014)</i></p> <p>[older people : Work characteristics (emotional nature of the work- psychologically challenging, fear of death & dying)]</p> <p>SS2: within theme <i>Negative aspects of work</i> emotional difficulties cited.</p> <p>SS3: Some accounts of emotive responses (and emotional conflict) but not directly preferences related to work being 'sad' or too emotional.</p>	Evidence in SS1, limited accounts in SS2 & SS3.	<i>Limited evidence</i>
<p>Lifestyle considerations</p>	<p>SS1:n/a</p> <p>[older people: limited evidence for association with lifestyle consideration factor]</p> <p>SS2: n/a</p> <p>SS3: In overall preferences (but not dementia specific)</p>	Not explored or identified in all SS, except in overall preferences evaluation of career choices (not dementia specific)	<i>No evidence</i>
<p>Contextual factor: Care environment, role and setting</p>	<p>SS1:n/a</p> <p>[Older adults: not explored]</p> <p>SS2: not analysed, but medical students' indications that preferences for spec vs clinical interest; high general preference but low specificity.</p> <p>SS3: Theme: <i>Care environment (quality and difficulty, and experiencing different settings)</i></p> <p>Theme: <i>individual preferences</i></p> <p>Differences between preferences directed to in recognised vs clinical interest is established AND diff in Clinical interest and recognised specialties depending on role and setting.</p> <p>Some factors more relevant depending on this context.</p>	Not explored SS1 and SS2, definition explored in SS3 and prominent factors within specific contexts outlined.	<i>Consistent evidence</i>

<p>Contextual factor: Time</p>	<p>SS1: limited for dementia- indication for year of study, for working with 'cognitively intact' patients (Diachun et al., 2006b).</p> <p>[Older people: student characteristics (year of training) - Evidence for preferences higher in earlier years of training]</p> <p>SS2: Var: year of study (in nurses)</p> <p>Themes: 'not now'; <i>prefer to gain new experiences, pursue in future.</i></p> <p>SS3: Students gave accounts of changes; higher and lower preferences over time (differing factors), in descriptions of <i>individual preferences for dementia</i> – participants (mainly nurses) identified changes in future. Also in theme: <i>professional development</i>; need to gain more skills now.</p>	<p>Evidence in SS1 & SS2 to suggest general decrease over time during training.</p> <p>SS3: students' accounts suggest why changes in preferences occur (factors) and identify that they have changed (higher or lower). For nurses appears theme that something to pursue in future and not good for now.</p>	<p><i>Consistent evidence for temporal element i.e. preferences are not stable</i></p>
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