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Abstract

Amina Saadi, Professional Doctorate in Health Psychology, 2025

This portfolio showcases the range of work I have completed as part of the Professional Doctorate in Health Psychology at Staffordshire University between 2022 to 2025. I completed my doctoral training whilst working in a pain management service at a specialist tertiary hospital in the NHS. To meet the doctoral requirements, I also took opportunities to complete work at University of Staffordshire and a private clinical health psychology practice.

The portfolio is organized into five sections, each aligned with the core competencies required for the Doctorate in Health Psychology:

1. Professional Skills
2. Advanced Research Methods
3. Consultancy in Health Psychology
4. Psychological Interventions
5. Teaching and Training in Health Psychology

Each part encompasses evidence for my development as a Health Psychologist. This includes research manuscripts, case studies and reflective commentaries that demonstrate my progression and learning for each competency. An overview of each section's contents is provided in the introductory chapter.

Introduction

This portfolio provides a comprehensive account of my journey in completing the competencies for the Professional Doctorate in Health Psychology between 2022 to 2025. It illustrates my progression from trainee to Health Psychologist and reflects on the experiences and skills I have gained and continue to build upon. Each section of the portfolio offers an insight into both the practical and reflective aspects of my training. A brief overview of the individual competencies is outlined below.

Professional Competence

The first chapter showcases the journey of my development as a Health Psychologist in the form of a reflexive report. It traces my journey from the early stages as a Trainee Health Psychologist working in the NHS to the point of nearing qualification and moving on to work in an academic setting. The report covers my growth across the five core competencies, as well as the additional key skills required of a Health Psychologist.

Advanced Research Methods

I completed two research projects as part of this competency. The first is a qualitative study exploring the experiences of healthcare support in individuals with Ehlers Danlos syndrome following diagnosis. This sensitive and personally significant project is accompanied by a reflective commentary that documents the research process from concept to completion, including generating the idea, completing participant interviews and writing up the research.

The second project is a systematic review investigating barriers and facilitators to influenza vaccine uptake in hospital-based healthcare workers. This was an especially timely topic given the impact that the COVID-19 pandemic had on vaccine attitudes.

Consultancy in Health Psychology

My consultancy work intersected with the systematic review and involved conducting the systematic review as a consultancy project. A full contract and working conditions agreement is provided, alongside a reflective commentary to illustrate the challenges and learning lessons I gained from managing each stage of the consultancy process.

Psychological Interventions

This section features two case studies alongside reflective accounts of delivering psychological interventions on an individual and group basis. The first intervention was a face-to-face individual intervention applying Acceptance and Commitment Therapy for a client adapting to a chronic health condition. The second was an online group intervention based on Cognitive

Behavioural Therapy for individuals with irritable bowel syndrome. Both case studies outline the therapeutic process and explore my personal insights through the delivery of these interventions.

Teaching and Training in Health Psychology

For this competency, I designed and delivered five sessions under the theme *"Applying Psychology to Long-Term Health Conditions"*. The sessions were tailored for various audiences, including healthcare professions and students, and varied in size and delivery format. A case study and evaluation are included to reflect on the planning, delivery and outcomes of the sessions.

Overall, the portfolio aims to showcase the breadth and depth of my training and competency, while also sharing my personal and professional reflections as a practitioner during this period.

Chapter 1: Professional Skills in Health Psychology

Reflexive Report

Introduction

This reflexive report will summarise my professional development as a Trainee Health Psychologist throughout my time on the Professional Doctorate in Health Psychology. The report will provide evidence demonstrating how I have met the core competencies set by the British Psychological Society (BPS) and the proficiency standards set by the Health Care Professions Council (HCPC) which must be met to register as a Practitioner Psychologist (HCPC, 2023).

My two-year placement was in an NHS tertiary hospital, the Royal National Orthopaedic Hospital (RNOH) NHS Trust. The RNOH was ranked as a global top 15 orthopaedic hospital due to the specialist orthopaedic care they provide for patients nationwide (Newsweek, 2023). The placement was within the Clinical Health Psychology department where I was part of a small team of qualified Health Psychologists. I predominantly worked on the inpatient pain management programme (PMP) which is a 3-week rehabilitation programme. Most patients on the PMP have a primary diagnosis of Ehlers-Danlos syndrome (EDS), Complex Regional Pain Syndrome, or Fibromyalgia, and present with transdiagnostic symptoms such as pain, fatigue, dizziness, and brain fog. Patients are treated by a multidisciplinary team (MDT) of psychologists, occupational therapists, and physiotherapists during their stay and are provided with a structured timetable consisting of 1-1 appointments and group sessions that are run by the various disciplines. The aim of the programme is to help patients manage their condition and symptoms better to live a more meaningful life and achieve their goals. Although the PMP formed the foundation of my work, my role also included supporting outpatients who required specific psychological input for their pain and other health symptoms that impacted their daily lives.

Post-placement

I have transitioned to working in a Health and Wellbeing service in higher education as a Mental Health Adviser where I lead on the mental health provision. The service is an MDT consisting of advisers in various specialist areas such as disability, general wellbeing, and finance. The role is fairly new therefore my day-to-day responsibilities vary greatly. Some tasks include but are not limited to:

- supporting students 1-1 with their mental health
- developing wellbeing interventions
- raising awareness of mental health and wellbeing on a university wide level
- service development and evaluation

- advising colleagues on student cases
- collaborating with external agencies (e.g., NHS)
- delivering staff training

Whilst this has been a significant change from my placement, the doctoral competencies and skills have served me well thus far.

Professional Competencies

Research

I conducted a qualitative research project during my placement. It took 1.5 years from the initial point of developing the idea to completing the project. I started to explore research ideas early on in the doctorate having identified an area of interest that aligned with the population group I was working with; from observations of psychology sessions, there was a recurring theme of the poor experiences EDS patients had with the healthcare system, and how accessing the PMP felt *"life-changing"* and like *"nothing they have experienced before".* A lot of time was spent in 1-1 sessions and groups unpacking healthcare experiences that significantly impacted their mental wellbeing and core beliefs. Core beliefs are generalised inflexible beliefs that people hold about themselves, others and the world and they usually develop from experience, messages received throughout their lifetime and during times of stress (Beck, 2020). When core beliefs are inaccurate or unhelpful, it affects how people manage and their response to illness (Arestedt et al., 2015; Wenzel, 2012). For example, a patient who was repeatedly dismissed by healthcare professionals may have a belief of *"I am worthless"* or *"I cannot trust others"* and avoid seeking help in future. I was interested in understanding more about their experiences and the impact it had but was unable to identify any UK-based research. I therefore decided to work on a qualitative project as I could see the potential widespread impact it could have for service improvement. I collaborated with EDS UK, a charity providing support to those seeking diagnoses and those already diagnosed with EDS to advertise the research. I received an overwhelming response of over 200 emails within 24 hours of the research being advertised which reinforced the importance of the research and spurred my motivation to produce a high-quality paper. Although I already appreciated the value of research, the experience reinforced my appreciation for how research can serve as a voice to communities and lead to meaningful conversations. At approximately the same time I was recruiting for my research, EDS UK attended parliament to discuss the downfalls in care for EDS patients. The project was a key learning experience as I developed what initially started off as an idea into meaningful work. I learnt in-depth about a range of research processes such as applying for ethics within the NHS, development of materials such as the interview schedule and participant materials, conducting sensitive qualitative interviews, adapting research to ensure inclusivity, and analysing the data using reflexive thematic analysis. To disseminate the research, I presented the paper at the

Staffordshire University conference and plan to prepare the paper for submission to a peer-review journal to share the meaningful data.

Whilst I have not been directly involved in any new research projects since the completion of the above, I have had ongoing conversations with my academic and placement supervisor about applying for research grants and future EDS research. This may involve writing a second paper due to the richness of the results and/or developing a follow-up research project to build on the work completed. I hope to collaborate further with EDS services and charities to complete this valuable research and contribute to change.

The second research project I conducted was the systematic review, which focused on the predictors of influenza vaccine uptake among hospital-based healthcare staff and was, without a doubt, the most challenging assessment I completed for the doctoral programme. The scale and complexity of the project exceeded my initial expectations and tested my resilience. When I started the project, I expected that my prior experience of completing a smaller-scale systematic review would provide a solid foundation. Although it did give me clarity on the necessary steps of a review and I used familiar programmes like Rayyan to manage the review process, I quickly realised that the demands of this review were significantly greater. Refining the research question was difficult as it was either too broad and captured too many papers or too specific that it did not capture enough. I also later experienced challenges synthesising the data due to a lack of consistency with data reporting. Despite my best efforts and support from my supervisor, I was unable to meet my initial timeline and experienced delays. Whilst this may not have been an issue overall, I conducted the systematic review as part of a consultancy project which placed pressure on completing the review. However, it was important that I prioritised the quality and the integrity of the review over meeting the deadline. Completing the systematic review helped to enhance my understanding of systematic review processes and built my confidence in tackling more complex research tasks in future.

Consultancy

Consultancy was an area I had no prior experience in, yet it was one of the first competencies I decided to tackle, because an opportunity arose to work on a project with an Infection Prevention Control Team early on in the doctorate. I recognised this as an opportunity to challenge myself despite feeling nervous. The consultancy project was the systematic review I submitted as part of the doctorate and therefore I was able to fulfil two of the competencies simultaneously. Writing the consultancy contract was a key learning experience as I had not written a contract before and did not appreciate just how detailed contracts needed to be to protect both the client and the consultant. I eventually developed a clear contract that set out expectations, timelines, and the deliverables. The contract writing process emphasised the importance of clear communication and agreeing the specifics as I often came back to it to ensure I was delivering what was agreed and the consultancy relationship continued successfully.

Whilst I gained a great deal from the experience, particularly clarity about what consultancy involves, I identified areas for further development. Negotiation, for example, is a key skill and although there was some negotiation in this project, the client deferred decisions to me and was happy for me to take the lead. As a result, I did not get as much experience in navigating complex negotiations. This is a skill I need to progress further considering consultancy experiences can vary widely depending on the project, the client's style, and other external factors like deadlines and expectations. Opportunities to practice negotiation in consultancy have arisen in my current role where we are working with an external provider to improve our service. However, I am now in the position of the client rather than the consultant, therefore my priorities and expectations are different. It has given me a different perspective to acting as the consultant when I completed the competency.

Psychological interventions

Working as a Health Psychologist in the NHS often involves a substantial amount of time dedicated to designing, delivering, and evaluating interventions. This is the area I felt most confident in due to my prior clinical experience. Nonetheless, I have furthered my clinical skills and gained experience in a diverse range of psychological interventions, particularly in the context of pain management.

I began the doctorate with a strong foundation of Cognitive Behavioural Therapy (CBT) principles, but this was not always the most suitable approach for pain management patients. A priority for learning I identified at the start of the placement was to expand my skillset to other therapeutic modalities such as Acceptance and Commitment Therapy (ACT) and Compassion-Focused Therapy (CFT). These approaches are effective for working with pain management as patient goals commonly centred around grief, acceptance, and adjustment to change (Feliu-Soler et al., 2018; Gooding et al., 2020; Van de Graaf et al., 2021). Utilising ACT was especially valuable for helping patients to develop psychological flexibility and to adapt to the realities of living with chronic pain (Hughes et al., 2017), therefore we worked on aligning their actions with their values. I found that I also resonated with the principles of ACT which made it easier to implement. CFT was important in addressing self-criticism and shame, emotions that were frequently tied to living with pain (Malpus et al., 2023). The most valuable skill I developed for my continued clinical practice was to be able to integrate these approaches simultaneously. I moved beyond relying on a single therapeutic framework and instead adopted an integrative, patient-centred approach that is more suited to pain management and complex presentations. I now feel more confident to tailor interventions to the individual depending on their challenges and goals, drawing on a range of psychological models. Since completing the placement, my interests have led me to expand further and start learning more about Internal Family Systems Therapy (IFST) and how it fits with other modalities (Schwartz & Sweezy, 2019).

Another key area of learning was understanding the distinction between brief inpatient interventions and longer-term outpatient work. Inpatient interventions felt more immediate and intensive as there was a requirement to address their needs within a shorter timeframe. Outpatient interventions on the other hand allowed for deeper therapeutic work which I personally preferred. I could guide the patient through their journey and observe the long-term impact it has on their life. The different approaches meant that I adapted the interventions and methods I use to suit the context and patient needs whilst setting realistic expectations about what we could achieve. I have been utilising these skills in my current role as many of the student interactions and interventions I deliver are brief and it is important their needs are met swiftly. The quality of my work has been recognised since the placement concluded; I received feedback from my placement supervisor that inpatients and outpatients attending their one-year follow-up appointments have shared how meaningful the work we completed together was and the positive impact it has had.

Teaching and training

Teaching and training is a competency I particularly enjoyed as sharing knowledge and skills with others aligns closely with my values of professional growth. I planned a range of teaching sessions that gave me the opportunity to adopt different approaches and tailor them to varied audiences and settings. Drawing on my background as a Psychological Wellbeing Practitioner (PWP), I delivered a course of three sessions to PWPs at Staffordshire University focusing on theoretical knowledge and applying it in clinical practice. My understanding of the PWP role made it easier to design and deliver sessions that were engaging and provide content that was applicable to their day-to-day responsibilities. I also delivered two sessions within my placement to the MDT and to physiotherapy and occupational therapy students. The development of these sessions required greater thought and careful planning as I was less familiar with their training and job roles. It did however prepare me well for future teaching and training as I will not always be delivering sessions to psychologists.

Although I had some prior experience delivering teaching, the doctorate introduced teaching models and theories that were entirely new to me. Frameworks such as Race's (2007) model of learning, Bloom's (1956) taxonomy, and having a well-thought-out pedagogical approach all helped me to structure and deliver effective teaching sessions. For example, adopting a constructivist approach shifted my focus towards incorporating greater opportunity for active engagement rather than didactic methods. I also used interactive tools such as Slido to enhance the participation which was received well. These frameworks enhanced the quality of my teaching and gave me the confidence to plan structured and purposeful sessions that meet the learner's needs.

A challenge I encountered across teaching sessions was balancing the timing with providing enough meaningful and useful content. I was eager for learners to take away as much knowledge as possible, but I had to consider the feasibility since too much information in a short period of time can be overwhelming and difficult to process. Timing was a recurring piece of feedback I received, especially after a session where technical difficulties caused delays. Although some factors were beyond my immediate control, this experience highlighted the importance of building space to process and flexibility into session plans.

Since completing the competency, I have continued to develop and deliver training in my current role. I independently designed and delivered face-to-face and online sessions such as:

1. Reasonable Adjustments for Students with Mental and Physical Health Issues
2. Supporting Students with Mental Health Concerns
3. Developing Self-Compassion and Taking Care of Your Wellbeing.

The skills and models I have learnt during the doctorate have proved invaluable as the sessions have involved conducting thorough needs assessments, developing clear learning outcomes, and tailoring the content to meet the needs of a diverse audience. The feedback I have received thus far has been positive with areas of constructive improvement highlighted such as including more student case studies to supplement learning. I have continued to receive requests to deliver training suggesting that the sessions are useful and effective therefore the teaching and training skills have become fundamental to my current role.

Professional competence

Reflecting on my professional skills development as a Trainee Health Psychologist has been central to my journey to ensure I meet the standards of a competent Health Psychologist. I have been using Rolfe et al., (2001) What, So What, Now What model to guide my written reflections. The model has provided a structured approach to reflecting on my experiences and identifying how I will improve my professional skills. Although, there may have been other models that I would have benefitted from also using. My reflections consist of areas for improvement as well as celebrating progress and achievements. A difficulty I have faced is acknowledging my progress and noticing what is going well. In the earlier stages of training and placement, I often felt out of my depth and struggled to see how I was evolving. By documenting my reflections over time, the diary has become an objective account of my journey and serves as a reference point for tracking my development.

I have engaged in reflective practice as consistently as possible, though I did struggle to maintain written records when clinical priorities demanded my focus. Nevertheless, each week I attended clinical supervision where there was space to engage in verbal reflection. This helped me to stay grounded when the NHS working environment became busy and overwhelming. It also encouraged me to prioritise professional growth rather than falling into a routine of repetitive actions and practices. A recurring issue that we reflected on was my ability to take care of my own wellbeing and balancing my needs with the needs of others. This was an important point we came back to as one of the HCPC standards for a Practitioner Psychologist is to *"look after their health and wellbeing, seeking appropriate support where necessary"*. It is crucial that as a qualified Health Psychologist I can recognise the impact my wellbeing has on my practice and to actively implement strategies or take action if my health affects my ability to work effectively. Whilst I have made significant progress with working towards a better balance, it remains a priority for me to develop greater awareness of my physical and mental wellbeing. Going forwards, reflective practice will be as an essential tool for my professional development and I am committed to continuing it as a trainee and when qualified.

Professional skills

Legal, ethical, and professional standards

Legal, ethical, and professional standards are crucial in the NHS; they ensure the safety and wellbeing of individuals accessing the service whilst maintaining compliance with local and national legislation. Safeguarding patients is a key responsibility I hold as I am required to prioritise safety, even in ethically complex scenarios. There have been instances when I have needed to make safeguarding referrals because a patient disclosed that they were at risk, even when it conflicted with their wishes and they did not provide consent. Whilst this has been a challenging aspect of training as a Health Psychologist due to the conflict it can raise in the therapy relationship, I feel confident making decisions that prioritise safety and feel equipped to navigate different situations, whether it is with patients or students. I consciously act in their best interests and keep them well-informed where appropriate to reduce distress and uncertainty whilst maintaining the legal, ethical, and professional standards required of me.

I have also encountered further ethical challenges when managing sensitive situations and confidentiality. There was an occasion where a patient's family member contacted me to express their concerns and request for more information about their psychological treatment. The situation required careful consideration of confidentiality, ensuring that the patient's right to privacy is upheld and that the concerns of the family member are addressed. I adhered to ethical guidelines by explaining the boundaries of what could be shared and directed the family member towards appropriate support. I documented and maintained clear and appropriate records of the discussions with the family member, the wider team and actions taken to manage the situation as clinical notes can be used as legal evidence. Documenting information thoroughly and objectively is a key skill I continue to implement in my practice regardless of the context as it provides an account of how a situation was managed, especially if there are issues raised in future.

The same standards have remained equally relevant in my current role as it is centred around the wellbeing of students. Even in a different context, the fundamental principles of safeguarding, confidentiality, and ethical decision-making are central to my work. My experiences during the doctorate have equipped me to navigate maintaining professional standards in a new work setting, ensuring that my practice continues to prioritise the wellbeing of those I work with.

Health psychology advice and guidance to others

Over the course of the training, I have had numerous opportunities to provide health psychology advice and guidance. Working as part of an MDT means that colleagues often look to you for input and recommendations. Within my placement, it was predominantly to colleagues such as nurses, physiotherapists, and occupational therapists. The advice included educating them on health psychology models such as the Health Belief Model (Becker, 1974), strategies to encourage implementation of new behaviours, and how to deal with patients who were struggling to make long-term change to better manage their health. Evaluation of the advice and guidance I provided highlighted that there were benefits for both the colleague and the patient. The colleague shared that they felt more confident to problem-solve and work with the patient in a different way, and the patient was more willing to make change and adhere to the treatment recommendations.

Reflecting on my progress since the start of the doctorate, I felt insecure about providing advice and whether my recommendations would be trusted. I have doubted whether my contributions would be valuable and have hesitated to contribute my perspective in discussions. I discussed this in clinical supervision at the start of my placement and my supervisor provided reassurance that the ideas and thoughts I had were relevant and appropriate. As my placement progressed, I developed greater confidence in my professional knowledge and ability to provide health psychology advice, therefore I started to share and contribute more. The growth has been affirmed through feedback received at my NHS appraisal and my placement visits where the value of my contributions to the team were noted.

Now in my present role I work closely with disability and wellbeing colleagues where I confidently share health psychology advice and guidance. Not only has this supported their work, but it has also demonstrated the value of Health Psychologists and integrating psychological principles into wellbeing initiatives.

Communication skills in different contexts

Communicating in various contexts and forms is a skill that is key for a psychologist and working in healthcare settings (BPS, 2017). I have had opportunities to develop my communication skills across contexts and with different audiences. There are several areas that have stood out to me as learning opportunities where I have tailored my approach to meet the needs of the situation (see Table 1).

Table 1

Communication Skills and Adaptations

Communication consideration	**Adaptations**
Language	Working with patients has required me to use accessible, friendly language, rather than clinical terminology that may create a barrier between the practitioner and patient. I have been mindful to avoid language that could be perceived as dismissive or fail to reflect a patient's experience. For example, using phrases that suggest an emotions and/or psychology cause pain is not received well. Instead, explaining the full context and explaining it as an *influence* or *may play a role* is more helpful. The language sensitivity has been essential for developing trust and rapport with patients.
Group vs individual sessions	I have been particularly aware of the differences in communication when delivering group sessions compared to 1-1. Generally, I would opt for simple and broader messaging in groups to account for differences in learning styles and experiences so that it is more applicable to all members of the group. Nevertheless, sometimes the way that patients relate to content can be difficult to navigate in a group session as they interpret content differently. I try to follow up by encouraging them to reflect and relate it to their own experience or provide a variety of patient examples to demonstrate the point. However, in 1-1 sessions I can be more specific as I only need to

	consider the needs of one individual and tailor it to them specifically.
Neurodiversity	There is a known relationship between neurodiversity traits and EDS (Casanova et al., 2020) therefore adapting communication for neurodivergent patients has been another area I have worked on. I have learnt to avoid overly open-ended questions as it can be difficult for patients to answer and know how much information to share and what is relevant. I ask questions that are more structured and directive which helps patients to respond within the appropriate context and boundaries. I would like to expand on this area further by attending training on working with neurodivergent adults, particularly with the increasing rates of diagnoses.
Communicating with staff vs patients	Communicating with staff has differed from patient interactions. Clinical language is appropriate as there is a shared understanding of clinical concepts. The conversations are often more detailed, and the focus is on sharing information to plan a patient's care rather than demonstrating empathy and understanding. However, I have still drawn on and used empathy skills with colleagues as I have had to have difficult conversations that have required professionalism and sensitivity. These varied experiences have enhanced my ability to adapt my communication style to suit the context (i.e. staff or patient), ensuring clarity, respect, and effectiveness in all interactions.
Patient assessment and treatment letters	Written communication is as important as verbal communication. Writing assessment and end of treatment patient letters required me to strike a balance between being sufficiently detailed while remaining concise. This was extremely difficult for me when I was working with patients over a long period of time, and everything felt important for me to include. I developed my skill by reading other letters written by psychologists in the team and

	asking for feedback from my supervisor before sending letters off which I found very helpful. I have also adopted a patient-centered approach by reviewing letters with patients before sending them out and addressing the letter directly to the patient with the GP copied in rather than the other way around. I felt that this demonstrated greater respect for the patient as the letters are a story of their journey and experiences.

Team-working skills

I was fortunate to work in a team composed entirely of Health Psychologists. The shared background meant that we had a natural alignment in our approach and perspective, making it easier to collaborate and co-ordinate patient care. In MDT meetings where there were healthcare professionals from various training backgrounds, I noticed that different priorities and goals could impact team working. When differing opinions led to disagreement or conflict regarding a patient, I handled the situation by focusing on our shared goal of improving the patient's quality of life, justified my perspective and maintained a respectful dialogue. An important characteristic of being an effective team player is being able to share your perspective and opinion whilst acknowledging and considering that of others. These experiences helped me to navigate professional relationships and still advocate for a patient's best interests, especially with senior colleagues. Nevertheless, I have had positive experiences of working collaboratively with other professionals such as psychiatrists, occupational therapists, and physiotherapists. We completed joint patient appointments and took advantage of the benefits of shared expertise. It was useful to meet in advance when we offered joint appointments as we agreed on each person's role and the aim and priorities for the appointment therefore helping us to work together more effectively. It reinforced the importance of finding common ground and establishing roles and boundaries from the outset. An important consideration I have had when working as a team and collaborating with colleagues is confidentiality. I have consistently been mindful of confidentiality and carefully considered whether sharing patient information is necessary. Patients have been informed that the information they share in psychology sessions is confidential and that any details shared with colleagues is strictly on a need-to-know basis, which I have sought to respect.

Unlike my placement where health psychology was embedded within the service, I am now the sole Health Psychologist in the team. I work alongside colleagues from different disciplines who may not have heard of health psychology or fully appreciate what it can offer. It has required a greater effort on my part to establish effective team dynamics and identify how we can work together. An effective method to bridge the gap has been regularly updating each other on projects, seeking opportunities to collaborate, and demonstrating the value of health psychology by sharing knowledge. Overall, it has been received well, and the team are open to learning.

In addition, the role has come with the responsibility of leading the planning and implementation of wellbeing initiatives, being the first point of contact for mental health related queries and providing advice to other departments in the institution. Stepping into a position that involves leadership qualities such as influencing change and decision-making has been personally uncomfortable as I feel responsible for always making the right choices and performing to a high standard. However, this is an area I am working on through external supervision as leadership qualities will be crucial for progressing in my career.

Involvement of service users and carers

Every patient I have worked with has contributed to my training and played a vital role in growing my professional skills as a Health Psychologist. Their unique needs and perspectives have challenged me me to adapt and consider different approaches in all aspects of my work.

Specific projects where I have engaged service users was for my qualitative research where they contributed to designing the interview schedule to ensure it was clear and appropriate for the aims. The approach aligns with the strong recommendation of incorporating patient and public involvement in health research (Boivin et al., 2018). I also involved patients in an additional project I worked on at the RNOH where we developed a pre-hospital admission handbook to reduce hospital admission anxiety. The project arose because of feedback from patients who shared they felt uncertain and anxious prior to hospital admission for the PMP. Research shows that hospitalisation significantly impacts patients' emotional and psychological wellbeing (Alzahrani, 2021). I sought feedback from multiple patients during the design stage and after its development to ensure it met their needs effectively. This collaborative approach aligns with evidence supporting the long-term benefits of co-design to enhance service quality and health outcomes (Kiran et al., 2020). Taking into account the patient perspective has shown me how it differs from that of a healthcare professional. For both projects, incorporating the patient perspective has demonstrated why services should be designed in collaboration as there were areas they identified that I had not considered.

The principles of servicer user involvement have carried over to my present role. I am in the process of implementing a wellbeing service evaluation form with the input of students, as well as developing a perinatal support group and setting up a student focus group to gather information so that it aligns with their specific needs and expectations.

Issues associated with equality, diversity, and inclusion

Several issues related to equality, diversity, and inclusion arose during my placement. I seemed to find myself have recurring conversations with other team members about them and documented the presenting issues and my reflections (see Table 2). A few were related to protected characteristics outlined in the Equality Act 2010. Noting these characteristics, it shows how important it is that the services we provide are inclusive and not discriminatory explicitly or implicitly through processes, systems, and structures.

Table 2

Characteristics and Issues in Healthcare

Characteristic	**Issue**
Learning difficulties	For patients with learning difficulties, the standardised approach for delivering information to patients in the NHS is not always suitable. Factors such as complex clinical language, fast-paced discussions due to time pressures or abstract concepts can create barriers to their engagement and learning. To make care accessible, we have a duty to adapt processes and materials where possible to allow patients to take part meaningfully and avoid them being excluded.
Religion	Religious beliefs and practices influence how people engage with healthcare. These issues can come up at the point of accessing care, decisions to accept treatment, during treatment and follow-up. Tailoring care to align with a patient’s faith can improve how comfortable they feel and their willingness to engage, ultimately improving their health outcomes. Ignoring religious requirements can lead to disengagement or a reluctance to participate / reach out for help.
Gender identity	Hospital wards are typically set up as single-sex spaces, as at it was in my placement. The set up does not account for patients who are non-binary or transgender. It can lead to feelings of discomfort or exclusion during their hospital stay. Whilst we offered patients the choice of ward placement, the structure of hospital settings is not inclusive, and some patients described feeling uncomfortable with needing to decide to go in an all-male or all-female ward.

Need to engage in CPD

Continuing professional development (CPD) is an ongoing process and the cornerstone of my professional development as a Health Psychologist. I have been consistently engaging in CPD and staying up to date with new developments and best practices. Each week I attended a "Tuesday Teaching" session on placement where professionals from diverse disciplines and backgrounds shared their knowledge, skills, and research in the context of pain management. This has provided me with valuable insights into the work of other healthcare professionals. Although the sessions were not always health psychology related, they allowed me to work more effectively with colleagues and provide better patient care as I understood their work and multidisciplinary approaches.

The insight into other professional's work also allows me to be creative with building new connections and identifying where health psychology can be integrated.

In addition, I have attended specific training courses on ACT and CFT which have been key to my ability to deliver interventions confidently in my placement. The frameworks have helped me to adapt my therapeutic approach to meet the needs of patients whom CBT often is not effective for. Nevertheless, there is ample room for improvement in my clinical skills. Both during my placement and in my role with students, I have been in a position where additional skills and knowledge in trauma approaches would have been beneficial and helped me to handle situations better. Although I seek out additional knowledge through research and supervision, I am aware of my professional boundaries and appropriately refer patients or students to specialised services where necessary. With the right knowledge and skills, I could offer more to those with trauma symptoms therefore I am exploring training options.

Research-focused CPD has also been essential for my development. I attended a thematic analysis workshop led by Braun and Clarke that helped to refresh my research skills and prepare me for completing my qualitative research project. I recognise that my clinical skills are currently stronger than my research skills and therefore I aim to prioritise research based CPD opportunities. This is particularly important as I plan to expand on the EDS research I conducted, and it will be key that I have the necessary skills to do so effectively.

Organisational and systemic issues

I experienced first-hand the strain caused by issues recruiting and maintaining staff in the NHS. We were consistently one qualified Health Psychologist down for the duration of my placement. The staff shortage placed additional pressure on myself and departmental colleagues to continue to deliver the service and meet patient demands. I have observed how staff shortages, an ongoing issue across the NHS and psychological services, can impact the quality of care provided to patients. Balancing the organisational challenges and duty of care to patients with my own personal needs has been challenging but I continuously remain aware of my capacity.

As well as recruitment challenges, I have an insight into the financial constraints that influence decision-making within NHS services. Resources are often limited and can affect the availability of tools, training, and other provisions that could significantly improve patient care. There were many creative ideas that staff proposed to improve the service and patient satisfaction that unfortunately did not come into fruition due to cost. It highlighted how challenging it is to balance financial budgets with continuing to deliver services without compromising care. In contrast to my current role, the organisation is not publicly funded and therefore I have noticed greater flexibility in accessing resources. So far, this has included procuring services for students to access 24/7 support and counselling, funding wellbeing initiatives, and external training opportunities for staff. However, there are similarities with the NHS as the wider organisation faces pressures to attract an increasing number of students to continue to bring in income and deliver a service to the students.

Personal development as a professional Health Psychologist

Looking back on my training journey over the last 2.25 years, I did not realise how many steps forward I have taken and the extent of my development. Health psychology theories and models were simply knowledge to me, and I did not always appreciate how theoretical knowledge translated into practical application. Learning about models such as the Health Belief Model (Becker, 1974) and COM-B (Michie et al., 2011) during the master's programme provided a solid foundation, but it was during the doctorate that I have truly seen these theories come to life and applied them in practice. My experiences on placement and discussion with health psychology colleagues working in different settings has shown me the diversity in how the theory translates and can be applied. I started to make meaningful connections between theory and practice spontaneously which has helped me to develop as a clinical practitioner and as a researcher. This in turn has enhanced my ability to independently identify opportunities for sharing health psychology knowledge and advocating for its value as it is an under-represented field. I am in a much stronger position to effectively do so compared to at the start of the training.

My ability to work independently has also improved considerably. Initially, I sought reassurance and feedback as I felt that I had an impossibly long road ahead of me to becoming a "good" psychologist. I explored the beliefs I had in clinical supervision and one of the characteristics I identified of a competent psychologist was confidence and being able to work autonomously. By the end of the placement, I was independently managing a patient caseload, developing treatment plans, exercising personal initiative by adapting to patient situations, and taking accountability for my decisions. Even when questioned by colleagues, I have justified my decisions and actions with rationale and evidence, which has strengthened my professional identity as a psychologist. Independence and autonomy have proven invaluable in my current role as I lead on mental health provision and am required to implement change and make decisions without the input of colleagues. I know this level of autonomy would have felt overwhelming at the start of my journey, but the doctorate has prepared me well and I feel more empowered. In my yearly NHS appraisal, I set a goal of *"to feel more like a psychologist"*. In one of my final clinical supervision sessions, my supervisor asked me *"Do you now feel like a psychologist?"*. I answered *"almost"* which is a long way to come from "*nowhere near*".

Reflecting on my development as a Health Psychologist would not be complete without mention of setting boundaries. This was an ongoing discussion in supervision, and I set goals to improve my boundary setting. Being more established in my psychologist identity, greater awareness of my professional values and having a stronger sense of the type of psychologist I want to be, has helped me to recognise the importance of assertiveness and boundaries and to feel more comfortable implementing them. It has had an impact on how I work in a team and with service users without compromising the quality of my work and practice. I have transferred these skills to my current role where I have had to establish new processes and set expectations on a wider organisational scale that is much less familiar with psychology than my placement.

The shift from working in a team of Health Psychologists in the NHS to a higher education setting has been a significant change. My journey so far has been incredibly meaningful and shaped who I am as a Health Psychologist. Looking to the future, I intend to build on these foundations and develop the skills discussed across the competencies and professional standards by continuing with written and verbal reflection retrospectively and in the moment. I am dedicated to ongoing development in diverse ways to ensure I evolve with the health psychology profession as it grows in years ahead.

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Chapter 2: Research: From Design to Dissemination

Qualitative Research Manuscript

A Thematic Analysis of Healthcare Support Experiences in Individuals with Ehlers Danlos Syndrome

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Abstract

Purpose: Ehlers-Danlos syndrome (EDS) is a multifaceted health condition that is poorly understood by healthcare practitioners (HCPs). People with EDS report challenges and obstacles with accessing appropriate healthcare post-diagnosis. The purpose of this study was to understand experiences of healthcare support in people with EDS and identify their unmet needs.

Method: Twenty adults with EDS were invited to share their experiences of healthcare post-diagnosis. Semi-structured interviews were conducted online. The transcripts were coded and analysed using reflexive thematic analysis.

Results: Three themes were developed: 1) time to prove yourself, 2) care that wounds, and 3) missing pieces of the healthcare puzzle. Participants reported that they faced disbelief of symptoms and communication with HCPs felt dismissive. Three main consequences were highlighted: physical harm from inappropriate advice, lack of trust in HCPs, and an impact on their psychological wellbeing. Changes that were expected to significantly improve the care they received were greater EDS knowledge, improved interprofessional working practices and better co-ordination of care.

Conclusions: Adults with EDS report poor experiences with the healthcare system which has had a significant impact on their wellbeing. Recommendations for practice include improving communication, EDS training for HCPs, and a multidisciplinary treatment approach.

Keywords: *Ehlers-Danlos syndrome, hypermobility, healthcare experiences, lived experience, dismissal*

1. Introduction

Ehlers-Danlos syndromes (EDS) is a group of heritable, connective tissue disorders that can be characterised by joint hypermobility, skin hyperextensibility, tissue fragility and variable organ dysfunction (Ghali et al., 2019). The prevalence of EDS is estimated to be between 1 in 5000 to 1 in 100,000 worldwide (Brady et al, 2017; Miklovic & Sieg, 2023). The latest international classification of EDS, done in 2017, identifies 13 subtypes with distinct and clinically overlapping features (Castori & Hakim, 2017; Malfait et al., 2017). Of the 13 variants, the most common are hypermobile EDS (hEDS), classical EDS (cEDS), classical-like EDS (clEDS), vascular EDS (vEDS) and cardiac-valvular EDS (cvEDS) (Mafait et al., 2017).

Diagnosis of EDS is often made in rheumatology clinics or for the rarer sub-types, in a genetics service. Clinical presentation can vary greatly between patients depending on the EDS variant, but symptomatology can also overlap with features of other conditions such as fibromyalgia, chronic fatigue syndrome and osteogenesis imperfecta (Fairweather et al., 2023; Hakim et al., 2017; Morabito et al., 2022). There is also the prevalence of physical comorbidities such as gut dysfunction, dysautonomia, mast cell diseases and psychological comorbidities such as neurodivergent traits of attention deficit hyperactivity disorder (ADHD) and autism spectrum disorder (ASD), depression and anxiety (Bulbena et al., 2017; Eccles et al., 2024; Scheper et al., 2015). The variable presentation of EDS between patients in addition to the comorbidities has meant that the condition is misunderstood (Sobey, 2014). Diagnosis can be a lengthy and complex process with an average time to diagnosis of 10 years (Halverson et al., 2023). Even once a confirmed EDS diagnosis is provided, there are currently no specific therapies approved to treat EDS and the focus is on symptom management.

Due to the variety of symptoms and prevalence of comorbidities, a multidisciplinary approach that focuses on preventing symptom progression and maintaining quality of life is necessary to appropriately manage EDS (Knight, 2013). Healthcare professionals (HCPs) such as rheumatologists and cardiologists oversee symptoms and complications in their respective areas whilst general practitioner’s act as the primary care provider and refer patients to specialists where needed (Proske et al., 2006; Sobey, 2014). However, HCPs across general and specialist disciplines experience challenges with providing care to EDS patients. Insufficient training and knowledge regarding EDS are cited as one of the most prominent challenges (Dockrell et al., 2021), raising concerns about the potential impact on the quality of care provided. Managing the diverse clinical manifestations of EDS along with the physical and psychological comorbidities can be difficult for HCPs with the lack of training and knowledge they receive about the condition. As a result, treatment and management advice may be insufficient and strain the patient-provider relationship.

Poor healthcare experiences can result in repeated requests for help and clinical consultations, therefore adding to the narrative of the ‘complex patient’ and creating a high-stress and hostile clinical environment (Loeb et al, 2016). HCPs may feel lost and overwhelmed by the level of input patients need, particularly when they are uncertain how to help due to poor knowledge and the atypical presentation. When patients are labelled as “complex” or “difficult”, it contributes to poorer experiences and worse health outcomes (Hinchey et al., 2011), leaving patients distressed, unsatisfied, and requiring further medical input. HCPs may also discharge ‘difficult’ patients prematurely or refer them to a psychiatrist or psychologist if they had multiple physical problems and struggled to understand the symptoms (Clark & Knight, 2017; Serour et al., 2009). This is noteworthy as the prevalence of EDS is higher for females than males, approximately 7:1 (Demmler et al., 2019). A clear gender health inequality exists as females are less likely to be taken seriously and it is more likely that their problems are attributed to psychological causes compared to males (Moretti et al., 2023). This is reflected in the EDS population as females are diagnosed on average nine years later than males (Demmler et al., 2019). In addition, neurodivergence presents a barrier in patient-provider communication. HCPs misunderstand autistic patients and are unsure how to adapt and interact with them in medical consultations (Stromberg et al., 2022). Understanding the healthcare experiences of this specific patient group and the factors impacting their care is crucial to better address their unique physical and psychological needs.

Currently there is little research examining healthcare experiences in EDS patients. One study explored experiences of obtaining a diagnosis of one subtype of EDS (Halverson et al., 2021). The journey to diagnosis was described as a ‘hero’s journey’ with multiple challenges: working with clinicians was described as difficult due to a lack of empathy, doubt, and dismissive treatment from HCPs which led to inaccurate diagnoses. Subsequently, there were negative psychosocial consequences such as self-doubt and isolation from social circles which contributed to symptoms of depression and anxiety. However, this paper did not explore experiences with healthcare professionals’ post-diagnosis when the focus starts to shift to long-term symptom management and living with the condition. Expectations and needs from healthcare services are likely to vary compared to when people are pursuing a diagnosis, thus it is important to consider how people are supported in terms of treatment and management. Research has touched on experiences with healthcare systems post-diagnosis with a specific focus on encounters where people felt disrespected and their dignity was not upheld (Berglund et al., 2010). Several themes were identified including being belittled by HCPs, not being treated as a person, symptoms being attributed to psychological factors, broken trust and healthcare avoidance. However, it was questionnaire based and was limited in terms of the depth of information collected. Adding to the literature is a mixed methods study by Estrella et al. (2024) who explored healthcare experiences post-diagnosis among hEDS and hypermobility spectrum disorder (HSD) patients in the United States (US). The participants reported low healthcare satisfaction, which subsequently had an impact on their quality of life and symptom management. The most common desired change highlighted by patients was greater knowledge about EDS among HCPs. Although this provides valuable insight, the healthcare system in the US is structured differently to the United Kingdom (UK). Whilst there are likely to be shared challenges, it may not represent the healthcare experiences of those with EDS in the UK.

The aim of this study is to build upon existing literature by expanding on our understanding of UK-based healthcare experiences for people diagnosed with EDS and the subsequent impact. High quality care is not only characterised by actionable outcomes such as referrals and treatment. Interactions and communication with healthcare providers also form a crucial part of people's experiences and illness management (Vermeir et al., 2015b; Howick et al., 2018), which our study seeks to explore. Understanding experiences and perceptions is important as the perceived quality of healthcare can influence health outcomes such as reported pain and disability (Ferreira et al., 2013). Furthermore, inadequate care and management from HCPs can cause unnecessary distress, suffering and pain that affects various aspects of an individual's life. By exploring experiences, this study also aims to shed light on unmet needs and identify potential changes to healthcare delivery for individuals diagnosed with EDS that can improve their overall experiences and outcomes.

Research Questions

1. What are the healthcare experiences of people with EDS?
2. What are the unmet needs of people with EDS?

2. Materials and Methods

2.1 Design

Using a qualitative design, 20 semi-structured interviews were conducted with individuals with a diagnosis of EDS confirmed by a rheumatologist or geneticist. Semi-structured interviews enable participants to discuss their experiences within the boundaries of the topic we are exploring, whilst also offering a deeper insights into their thoughts and feelings that quantitative studies often miss (DeJonckheere & Vaughn, 2019; Green & Thorogood, 2018).

The data was analysed using reflective thematic analysis (RTA), which is used for identifying, analysing, and reporting recurring patterns within data (Braun and Clarke, 2006). RTA focuses on generating themes across data sets, which can result in actionable outcomes with clear implications for practice and changes to healthcare delivery (Sandelowski & Leeman, 2012). The intention of this research is to explore experiences of healthcare support and subsequently identify how experiences can be improved at a broader scale, making RTA a suitable method to address the research question. The author adopted a critical realist epistemological position, which focuses on understanding real world experiences rather than simply describing it (O'Mahoney, 2016). The present research aims to understand subjective experiences and identify patterns, thus thematic analysis and critical realism are highly compatible (Braun & Clarke, 2021).

2.2 Reflexivity

Reflexivity in research involves recognising and reflecting on one's own beliefs, judgements, and experiences and how these may influence the research process and data interpretation (Gilgun, 2008; Subramani, 2019). Acknowledging these influences is essential, as researchers are not separate to the research they conduct (Palaganas et al., 2017). The first researcher who was also the interviewer entered this study with experience of working therapeutically with EDS patients, along with personal lived experience. This background provided a deeper insight into the challenges they faced with accessing and receiving healthcare support, and the subsequent impact it has. To maintain continuous self-awareness, a reflective diary was utilised to document thoughts and ideas that emerged throughout the research, ensuring that key insights from the earlier stages were not overlooked or misrepresented (Probst, 2015). The second author also had experience of working therapeutically with EDS patients. They engaged in self-reflection and remained aware of their biases throughout and how their experience may influence interpretation of the data.

2.3 Participants and Recruitment

Adults aged 18 and over with a diagnosis of EDS were invited to take part in the research via social media and newsletter advertisements through the Ehlers Danlos UK charity and posters at the Royal National Orthopaedic Hospital NHS Trust as they provide rheumatology and pain management support for EDS patients. Individuals interested in taking part contacted the first author using the contact details provided on the poster. They were sent a Qualtrics link containing the information sheet, screening questionnaire, consent form and brief demographic questionnaire to complete. All participants were required to meet the inclusion criteria of a confirmed clinical diagnosis of any EDS sub-type for at least one year, fluent in English and had access to a device with working internet connection for the interview. Participants were not eligible to take part if they were in a mental health crisis or acute episode of a mental health condition, were not well enough to take part (e.g. if they were in hospital), and if they lacked capacity to provide informed consent. Over 200 people expressed an interest in taking part. Due to the volume responses, 20 participants were selected at random from those who completed the consent form. No incentives were provided for participating in the study.

2.4 Data Collection

Semi-structured interviews were conducted in English on MS Teams by the first author, a female researcher. At the start of the interview, participants were provided with information related to the interview purpose and reminded of their right to withdraw at any time without providing a reason. They were reassured that their honest account of experiences would not affect their access to care or treatment plans in any way and that they would remain anonymous. All interviews were audio and video recorded with the participants consent. Participants also had the option of switching off their video for the interview and were informed that they could request for the recording to be stopped at any point. A semi-structured interview schedule was followed during the interviews to obtain a comprehensive view of experiences of healthcare support. The interview schedule included open questions on overall experience with services, communication, appropriateness of healthcare support, gaps in healthcare, and desired changes for care and treatment (see Table 1 for examples). The interview schedule was developed based on the observations of the first and second authors who were working clinically with people with EDS. Prior to the interviews commencing, the questions were reviewed with three EDS patients at the Royal National Orthopaedic Hospital NHS Trust to assess clarity and appropriateness of the questions. Suggested modifications were discussed with the second and third author before any final changes were implemented. The final questions were piloted in an interview with one individual with EDS, and since no changes were required, the interview was included in the final data analysis. Interviews lasted between 39 minutes and 76 minutes.

Table 1

Example Interview Questions and Prompts

Main question	Prompts / follow-up questions
Can you tell me about your experiences of healthcare support since your diagnosis of EDS?	What was your experience of the appointments you attended, and the support offered to you?
	How did your experience differ between the general and specialist services?
What impact have these experiences with healthcare professionals had on you?	On your physical wellbeing and symptoms?
What has communication been like with healthcare professionals since your diagnosis?	What was the relationship like with the healthcare provider?
Thinking about the experiences and care you have had so far, what would you want to be different?	What support do you wish you had/have?

2.5 Analysis

All interviews were transcribed verbatim automatically using the transcription software built into MS Teams. The first author then checked the transcripts on Microsoft Word for accuracy by comparing the audio recording with the transcript. All errors were manually corrected. All participants were allocated an individual ID number to maintain anonymity, and data was stored securely on OneDrive. For the purpose of this paper, the participants have been allocated pseudonyms.

The interviews were analysed thematically using the six-phase framework outlined in Braun & Clarke's (2006; 2021) guidelines. The first stage is familiarisation where the researcher immerses themselves in the data by reviewing the interview transcripts and listening to the interview audio recordings. Braun & Clarke (2006) emphasise the importance of not skipping this stage and taking time to become familiar with subtle features of the content. The next phase was to begin coding the data. The transcripts were imported into NVivo, a qualitative analysis software. Initial codes were generated by grouping related content under the same code, while new codes were created for new and different concepts. Once the preliminary coding was complete, the first author went through an iterative process of merging and splitting codes as needed to represent the underlying content. Once the coding was complete, the researcher collated the data and developed potential themes and sub-themes by organising the data to generate coherent patterns. The themes were defined and named based on the content of the codes, with careful consideration given to how the themes fit together to represent the participants' narratives. Each theme underwent thorough review and refinement and was discussed with the second author in-depth and third author for clarity.

2.6 Ethical Approval

Full ethical approval for this study was granted by the University of Staffordshire and was classified as a service evaluation by the Research and Innovation Centre at the Royal National Orthopaedic Hospital NHS Trust (Reg No. SE23/008). To address potential ethical concerns, all identifying details from the interviews were anonymised and access to the interview data was restricted to the authors only.

3. Results

3.1 Participant Characteristics

The sample was predominantly female, with only one male participant. The average age was 34.75 and it was primarily individuals with the hEDS sub-type. Individual characteristics of the participants are presented in Table 2.

Table 2

Participant Characteristics

Pseudonym	Gender	Age	EDS sub-type
Yasmin	F	33	hEDS
Mei	F	34	hEDS
Nora	F	54	hEDS
Camille	F	48	hEDS
Sofia	F	46	hEDS
Luke	M	34	hEDS
Ruby	F	37	cEDS
Adriana	F	54	hEDS
Elodie	F	48	cross-type EDS (hEDS and vEDS)
Layla	F	37	cEDS
Bina	F	37	hEDS
Valerie	F	48	hEDS
Georgia	F	18	hEDS
Sasha	F	47	HSD
June	F	50	HSD
Dania	F	25	cEDS
Priya	F	25	hEDS
Naomi	F	45	cEDS
Luciana	F	57	hEDS
Chioma	F	40	hEDS

Note. hEDS = hypermobile EDS, cEDS = classical EDS, vEDS = vascular EDS, HSD = Hypermobility spectrum disorder.

3.2 Themes

A total of three themes and seven subthemes were developed. They captured key aspects of the healthcare experience, the subsequent impact on participants and areas of improvement for the healthcare system (see Table 3).

Table 3

Themes and Sub-themes

Theme	Sub-theme
1. Time to prove yourself	1.1 Disbelief of symptoms
	1.2 Experiences of communication
2. Care that wounds	2.1 Spectrum of health advice
	2.2 Broken trust
	2.3 Psychologically wounded
3. Missing pieces of the healthcare puzzle	3.1 Bridging the knowledge gap
	3.2 Seeing the bigger picture

Theme 1: Time to prove yourself

The first theme describes people's experiences of care and the tendency to feel that they had to 'prove' themselves to HCPs. The sub-themes identified common barriers to receiving appropriate support for their EDS: disbelief of symptoms, and experiences of communication.

Sub-theme 1: Disbelief of symptoms

A significant barrier faced by participants was feeling that their symptoms were not believed even post-diagnosis. The complexity of EDS meant that the symptoms they were presenting with seemed strange or impossible. For some HCPs, EDS was not a legitimate diagnosis and they *"think it's like a made-up illness" (Sofia).* Patients described a cycle of needing to prove to HCPs that had been dismissive that their symptoms were real:

> *"Disbelief has been one of the biggest problems I have faced throughout my life. Or yeah, they just didn't believe it or they think I'm exaggerating it" - Camille*

There was an ongoing battle for care as participants were *"put in the position of pleading" (Luciana)* for treatment and any form of support they could get. Many had to step into the role of *"being my own advocate" (Sasha)* to prevent their health from progressively declining due to the lack of input. This could be extremely exhausting and energy-draining on top of the responsibilities they had:

> *"You also have to know how to be objective and you have to go in there and calmly argue things. But you do disproportionately have to fight to get things done" - Naomi*

Sub-theme 2: Experiences of communication

Communication played a critical role in developing a supportive patient-provider relationship. The experiences significantly varied from negative to positive. It impacted their emotional wellbeing and ability to build a rapport. Participants reported feeling dismissed, invalidated and *"always felt like I was gaslit" (Nora)*. An imbalance of power was also noted in the communication as HCPs had a *"hierarchical way of looking at me as the patient" (Chioma)*, often attributing their problems to other issues or coming across like they were discrediting the information patients:

> *"I feel infantilised, I feel made small, feel patronized and I feel uh they don't sort of recognise that, you know, I've had to live with this for 57 years and I kind of know actually know quite a lot about Ehlers Danlos by now." - Luciana*

On the other end of the spectrum, some participants had encounters with HCPs who were warm, empathetic, and took the time to listen. This fostered a deep sense of validation and understanding which was appreciated by participants. It reduced the emotional consequences of not being listened to:

> *"Someone just tells you actually you're valid, your pain is valid. It just brings something out in you that makes you feel like, oh my God, I am a person. I am a human being." - Elodie*

Theme 2: Care that wounds

The second theme explores how negative healthcare experiences affected the participants personally and influenced their decisions about seeking support in the future. They described the treatment and advice they received as inconsistent, which had a considerable psychological impact, and subsequently relationships with healthcare providers were frayed.

Sub-theme 1: A spectrum of health advice

Attending healthcare appointments involves trusting HCPs to provide appropriate advice and treatment for a specific condition. However, when HCPs lacked understanding of the condition and how to tailor treatments to avoid physiological damage, participants felt they received poor advice that was non-specific, leading to *"more harm than they have done any good" (Priya).* Physiotherapy delivered by NHS community services were frequently cited as a source of concern:

> *"When I go in to an NHS physio who didn't know about EDS, they would tell me to do a move and it felt sore. They'd say push through it, and I end up with injuries from it." – Georgia*

As a result, individuals were *"inclined to go privately" (Luke)* for healthcare to gain more control over their choice of provider and to select HCPs with greater expertise in EDS. However, this came with a financial burden that many could not afford. When participants had access to EDS-aware HCPs, whether through the NHS or private care, the support received met their needs as they *"adapted to how my body works" (Elodie)*. It positively shifted their healthcare experience, as they felt understood and built confidence to engage in other activities when they saw improvements in their physical health:

> *"Physiotherapy was amazing when it was the specialist physio. Like she made me so much stronger and now, like I I go to the gym, I do barre class, I do more yoga. Like I'm way stronger than I was and that also helped with the rehab side of things." – Dania*

Sub-theme 2: Broken trust

Despite the positive experiences with specialist HCPs, far more negative encounters were reported and so participants unsurprisingly had *"distrust of all medical professionals" (Luke).* Participants found it extremely difficult to build a relationship with HCPs and be open when they had been let down many times and their expectations were not met. Participants described going into appointments on the defensive and guarded to protect themselves:

> *"The impact it had on me was to not trust and to become very fearful. I can't, I struggle, I'm I'm a very strong person and not a lot, I mean, this is emotional for me because there's so much in it, but not a lot affects me and I very much struggled to trust the doctors and I find that I'm defensive immediately and I have to really calm myself and really watch myself and try to be present." - Ruby*

The lack of faith meant that in the long-run, participants were *"sceptical of going for help" (Sofia)* and *"avoid going to the doctors" (Nora)*, so withdrew from healthcare services. Attempts to self-manage were the preferred choice when a problem arose, but some people avoided healthcare to the point they became seriously unwell:

> *"I'm refusing to go to hospital because I'm scared of what's going to happen when I'm there. Because there have been occasions where I've been hurt or I've been, something I've been, something's happened either physically or mentally, and I'm just like, I can't do that again. I can't be there." - Mei*

Sub-theme 3: Psychologically wounded

An overlooked impact from the participant perspective was the significant emotional distress caused from *"the way you're treated, the lack of care, the neglect, that's more painful." (Ruby).*

Feelings of frustration, despair, and abandonment arose. They were emotionally vulnerable as they described and questioned whether they were worthy of help and receiving care:

> *"I came away feeling so disheartened and so low and so undervalued almost, because it's like, oh, you're not, you're not worthy of taking time to try and help to try and make better." – Layla*

For some, the gaps in care became so overwhelming that it led to feelings of hopelessness, and a few reported feeling suicidal as a result. The absence of suitable support left them feeling trapped and without options, therefore contributing to a dangerous cycle of psychological deterioration:

> *"It got to a point where I couldn't, I couldn't see another way out. So I took an overdose because I couldn't see any way out and I don't get me wrong, I'm not proud of doing that, but I just, nothing was happening, no one was helping me or supporting me. I was in so much discomfort, like, literally my life became on hold because I couldn't leave my home. Umm, what was I, I hit rock bottom." – June*

Unfortunately, participants reported that HCPs did not take the time during appointments to explore the psychological and emotional impact of living with a chronic health condition. Even when it was raised by the participants as a concern, there were limited to no options offered, leading them to seek out help on their own:

> *"I've seen about 20 to 30 consultants. GP, not really touched on it [my mental health], only really touch on it if I've, I've seeked out help when I've been struggling. Usually, I've gone private or recently I think last year I referred myself, I saw a mental health service" – Sasha*

Physical health concerns often took precedence whilst mental health needs were seemingly overlooked. Either there were no appropriate psychological services to refer to for their needs, or the waiting times were lengthy. Nevertheless, the participants highly valued their own mental wellbeing and actively sought help elsewhere where possible.

Theme 3: Missing pieces of the healthcare puzzle

The third theme highlights specific areas of the healthcare system that would improve the patient experience and the care they received. Participants most frequently expressed a desire for improved EDS knowledge amongst HCPs and for patients, along with the need for cohesive and integrated care.

Sub-theme 1: Bridging the knowledge gap

Limited awareness and understanding of EDS among HCPs was identified by participants as a core reason for disbelief of symptoms and poor advice, hence it was unsurprising that it would be the first wish for change. Further knowledge on the condition was seen as *"very important" (Sasha)* for appropriate care due to the significant impact it had on treatment and decisions:

> *"Having knowledge of the EDS [the healthcare professional] is definitely the, the most important thing I think out of everything when you've got EDS because of the fragile tissues, because of local anaesthetics not working, all kinds of problems that can happen. You know with EDS during physiotherapy or taking medications or whatever. So that's really, really, I think that's the most important thing" – Valerie*

General practitioners were named on multiple occasions as needing further education as they are the first point of contact when seeking help and act as *"gatekeepers to everybody else" (Ruby)* and specialist referrals:

> *Education is the big one and I just think there needs to be so much more education amongst all medical professionals, GPs in particular because they need to know A that it exists, but B that it's not just hypermobility, it's not just hypermobile joints. - Luke*

The desire to learn from HCPs was seen as an essential factor for transferring knowledge into practice. Participants appreciated honesty about not understanding the condition, especially when it was accompanied by a willingness to learn about it. It was considered to be a good trait of a practicing HCP rather than a deficit.

> *"I think, yeah, open mindedness, willing to learn or to say that's not my not my my my strength I but I know someone who's strength it is, absolutely that's helpful" - Bina*

As well as more information for HCPs, participants also felt there was a gap in their own knowledge. There was poor signposting towards appropriate information and resources when patients were diagnosed, leading them to *"search it [EDS] out myself" (Nora)*. As a result, they conveyed a need for more patient education in order to be better informed and help them *"know how to move forward" (Yasmin).* Suggestions included the creation of accessible resources such as a booklet, video, or education course:

> *"If there was like an overall NHS EDS toolkit that you know you could give to people to say, look, these are the steps you should take to get a diagnosis, after your diagnosis*

> *and what you can do throughout the rest of your life to to make things easier on yourself as and where possible, that would be amazing." - Mei*

Sub-theme 2: Seeing the bigger picture

Fragmented care was a common feature of healthcare provision for EDS patients. One key factor contributing to the disjointed approach was "*no consistent communication" (Dania)* between the HCPs involved in treating a patient. Communication and collaboration across specialities appeared to be non-existent as they operated in silo, focusing on individual issues despite the interconnected nature of bodily systems. At times, patients even received conflicting advice and treatment plans.

> *"I've been entertaining dietician advice when they phone you to tell you all about the FODMAP diet. And I said, well, hold on a minute, the gynaecologist gave me an MCAS diet and like they said, well, you can't do both at the same time." - Naomi*

This led to appointment fatigue and frustration, with participants expressing a desire to for HCPs *"to look at the person holistically" (Chioma)*, rather than as a collection of separate problems:

> *"I'd like there to be someone who I can go to who has medical knowledge, who sees me as a whole person with a genetic disease disorder, rather than a knee with arthritis or a bursitis of the hip, hip or whatever, you know, bulging disks in the spine. I don't want to be seen as ovarian cyst, adhesions or whatever. I don't want to be seen as individual things. I'd quite like someone to see me as a whole person" – Layla*

There was a strong appeal for better collaboration to improve illness management and experiences with evidence for its benefit. Although rare, participants who experienced a co-ordinated and unified approach noticed a significant positive impact. It eased their burden as they no longer had to act as a correspondent to fill communication gaps, therefore giving them speedier access to treatment:

> *"When there is a team and they all work together, then me as a patient, I can see massive difference [to my health] because one is talking to the other and I don't have to do the whole coordination plus the referral process is much quicker, which again is remarkable" - Chioma*

To remedy the issue of disconnected care and poor interprofessional working, participants recommended that there was a dedicated EDS clinician *"who oversees their care and not just* *their GP"* (Valerie) considering the number of HCPs they were under the care of:

> *"Well the key thing would be to have somebody or something that would be a kind of manager of all the other issues, kind of like a I don't know, like a specialist EDS nurse or something that could phone you up every now and again and you know, a sort of coordinator of care." – Luciana*

Participants described the ideal gold standard for care to be an EDS-specific hub or clinic. It "*would be life changing for somebody to come through" (Adriana)* and provide access to care that covered all bases from physical to psychological wellbeing to manage their condition. Participants expected that the clinic would comprise of a multidisciplinary team of HCPs with in-depth EDS knowledge and that interprofessional collaboration would be enhanced:

> *"It would be amazing for there to be specialist hubs, for there to be physios who understand the condition who can support us and people who get that it's interlinked. You know you know you might have a cardiologist, you might have a gastro specialist, you might have a rheumatologist and that they actually each understand it and communicate with one another. Like a multidisciplinary approach, that is absolutely necessary for people with EDS" – Ruby*

Given the complex nature of EDS and its impact on multiple bodily systems, seeing the bigger picture of a patient's condition, and embracing an integrated way of working was considered as essential for effective management rather than a luxury.

4. Discussion

The aim of this study was to explore healthcare experiences of people with EDS and identify their unmet needs regarding healthcare provision. Twenty semi-structured interviews were completed which resulted in three main themes that provided valuable insight: time to prove yourself, care that wounds, and missing pieces of the healthcare puzzle.

A recurring theme throughout the participant accounts was their experience of not being believed, dismissed, and feeling gaslighted. This ultimately resulted in frayed relationships and broken trust. Patient-provider interactions play a crucial role in patient satisfaction (Howe et al., 2019). The participants hoped for greater empathy in the interactions, which is linked to improved health outcomes (Licciardone et al., 2024). For EDS patients, who already navigate the complexities of living with and managing their condition, feeling unheard and dismissed is an added burden. This can be incredibly frustrating, particularly when there was an overt mismatch between the patient's lived experience and the HCPs interpretation of their symptoms and impact. Our findings align with previous research showing that feeling betrayed or disrespected by HCPs threatens the healthcare relationship (Langhinrichsen-Rohling et al., 2021). A strained relationship makes it even more difficult for HCPs to offer appropriate care, leading to a cycle of miscommunication, broken trust, and unmet needs. Modifying communication strategies and using relationship-centred approaches can help patients to feel heard, understood and ensure they are receiving the appropriate care (Chou & Cooley, 2018; Fortin, 2019). This would include essential skills such as collaborative agenda-setting, allowing patients to describe their experience without premature interruption, and responding with empathy. Empathy-focused interventions for HCPs are an effective method of improving communication skills (Winter et al., 2020), and patients report being more satisfied with their care (Derksen et al., 2013).

Our study did not examine the difficulties that HCP's face when communicating with and providing care for EDS patients. Understanding the challenges is an important part of the broader context and may offer insight into why meaningful communication is difficult. Dealing with multimorbidity in appointments can be challenging and factors beyond the control of HCPs can be added barriers to effective communication such as time pressures, resource availability and prioritising productivity over value (Kuipers et al., 2021). Patients receiving care from time-pressured practices report lower levels of support, and low support is likely to fuel the perception and experience of being dismissed and gaslighted, even if it is not the intention of the HCP (McDonald et al., 2018). As a result, HCPs can be trained on patient-centred and empathic practices, but responsibility should extend beyond individual practitioners or groups. The broader framework of healthcare systems needs to be designed to support positive patient experiences by enabling HCPs to provide high-quality, compassionate care more easily (Kerasidou et al., 2020).

Our study also found that healthcare experiences resulted in adverse outcomes as patients' physical health was significantly impacted by receiving advice that was generic, unsuitable, or even harmful. This issue was partly due to the limited EDS knowledge among HCPs which compromised the quality of clinical advice provided and contributed to disbelief of symptoms. Where participants did receive care from EDS-aware HCPs or those who were at least willing to learn, their health improved, and the experience overall was positive. When HCPs are unfamiliar with a condition, they may inadvertently compromise patient safety and are more likely to make poor treatment decisions (Rop et al., 2022; Qureshi et al., 2021). Consequently, one of the key improvements that was identified by participants in this study to create wide and meaningful impact is enhanced EDS knowledge among HCPs. EDS education and training would not only help in recognising the wide range of symptoms, but also with delivery of safe and appropriate treatment post-diagnosis. Clinician-focused education has already produced benefits for conditions such as chronic pain. Research has shown that pain education improves HCPs knowledge, attitudes, and perception of pain, which positively influenced their clinical practice (Louw et al., 2019). The ripple effect of these improvements are seen in more trusting patient-provider relationships as the HCP demonstrates their knowledge and competence and can be responsive to the individual needs of the patient (Greene & Ramos, 2021). Integrating EDS-focused education into training programs, professional development courses, and providing clearer clinical guidelines for HCPs to follow can significantly enhance the quality of care for EDS patients.

The psychological impact of feeling unheard and dismissed was profound and concerning. Our study found that interactions and no sense of direction led to vulnerable emotions of anxiety, self-doubt and feeling suicidal. When patients' symptoms were invalidated, they had a diminished sense of self-worth, and it created a perception that their suffering is not legitimate. HCPs failing to recognise the psychological toll these experiences have further complicates the therapeutic relationship. Research indicates that professionals often do not have an accurate perception of what upsets and causes distress in patients; they underestimate the impact of their own actions and behaviours and overestimate the impact of systemic issues (Conner et al., 2022). This emphasises the importance of HCPs taking responsibility for their communication and building a collaborative relationship where patients feel heard to minimise undue psychological impact. In addition to the healthcare experience, it is well established that a reciprocal relationship between pain and psychological wellbeing exists (Cohen et al., 2021). Understanding the full biopsychosocial context of a patient's condition, including their mental health is essential (Linton & Shaw, 2011; Vadivelu et al., 2017). However, psychological services are oversubscribed with lengthy waiting lists and there are few that specialise in providing long-term support for chronic health conditions. For other conditions such as cystic fibrosis (CF), the clinical guidelines require that psychologists are embedded within CF services and part of the core team, therefore providing access to specialist psychological care for all patients (Cystic Fibrosis Trust, 2024). Following this model, psychological support should be integrated or at the very least offered to EDS patients as a standard part of clinical care to ensure both their physical and emotional needs are adequately met.

Another priority for change highlighted by participants was the need for enhanced interprofessional collaboration. Managing a condition that affects multiple bodily systems requires comprehensive care at the biopsychosocial level and necessitates the involvement of various HCPs. Efficient and effective communication is crucial for continuity of care as delayed or miscommunication can lead to adverse health outcomes and jeopardise patient safety (Kripalani et al., 2007). No standardised method currently exists in the UK to streamline communication or share information between HCPs. A frequent difficulty shared in our study was the poor communication between primary and secondary care providers. Consistent with the participant experience, research shows that it is also the experience of HCPs, as GPs and specialists acknowledge their communication is suboptimal (Vermeir et al., 2015a). Many participants reported that they were filling the communication gaps and acting as the co-ordinator. As well as exhausting, it is not a reliable solution as patients' ability to effectively communicate and their health literacy may compromise the accurate sharing of health information (Ledford et al., 2015). This supports the participant request made in our paper for a dedicated HCP, such as a nurse, who can facilitate and co-ordinate referrals, care plans, and ensure healthcare processes function smoothly. The approach is currently employed in diabetes, oncology, and for other illnesses such as multiple sclerosis, where a nurse collaborates with various HCPs and acts as the anchor throughout the care process (National Institute for Health and Care Excellence, 2022; Taberna et al., 2020). Considering the success in other health conditions, employing a similar process for EDS would improve communication overall and ensure that care provided is appropriate and timely.

An additional suggestion made by participants to improve interprofessional working and holistic care was Multidisciplinary teams (MDTs) for EDS. MDT clinics are widely recognised as the preferred model of healthcare delivery (Bendowska & Baum, 2023), and have been tested for EDS (Black et al., 2023; Knight et al., 2022; Mittal et al., 2021). Whilst they were successful at increasing access to diagnosis and treatment, there are very few in existence and therefore are inaccessible to most or clinic waiting times are extremely lengthy. In addition, Black et al. (2023) did identify challenges that require further planning, such as difficulty including all specialities within clinics due to variability of symptoms, organising multi-hour meetings, and liaising with HCPs outside the clinic. Technology has been identified as a potential solution for building capacity for MDT working despite differences in schedules, responsibilities, and work settings (Janssen et al., 2018), but there is limited research on how to implement these systems effectively to avoid suboptimal use. As well as advocating for greater access to EDS clinics, we also urge future research to explore how technology can be integrated to facilitate collaboration and the delivery of holistic care for complex health conditions.

Limitations

This study adds to the EDS literature as it is one of the first to explore experiences of UK-based healthcare support post-diagnosis. It has provided insight into the key factors that participants feel need to be prioritised in healthcare to improve the management of their condition. Whilst there are clear recommendations for change, further research is needed to explore the HCP perspective and the challenges they face with providing care for EDS patients.

One limitation is that most participants were diagnosed with the hEDS sub-type, which, while common, may not fully capture or represent the experiences of individuals with other EDS subtypes. Rarer subtypes present unique challenges or experiences that although were touched on, were not adequately addressed within this study. Future research could examine differentiating how their experiences vary from hEDS and whether there are additional considerations.

Finally, our study included individuals with neurodiverse traits which was spontaneously disclosed during interviews, but information on the presence of a formal diagnosis was not collected. Neurodiversity can influence how participants communicate, perceive information, and report their experiences and it would have been useful to consider it as part of the wider healthcare context. However, considering the significant barriers to obtaining a formal diagnosis, it is acknowledged that not all participants may have been aware of their neurodiverse status.

Conclusion

Navigating the healthcare system was demonstrated to be a significant challenge for people with EDS. Many of the participants could not access EDS-specific support, and those who did often did so through sheer determination, battling for their care or feeling forced to turn to private options. The findings point to several areas of improvement that could make life-changing differences for their experience and ultimately their health outcomes, including improved communication practices, greater EDS knowledge, EDS-specific clinics, psychological input, and interprofessional collaboration.

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Qualitative Research Reflective Commentary

Introduction

This reflective commentary focuses on the process of completing my qualitative research project which explored experiences of healthcare support in people with Ehlers-Danlos syndrome (EDS). The stages outlined and discussed are the identification of the research area, design, ethical processes, data collection, analysis, and write-up of the report.

Rationale

Identifying the research area was an easy task as I identified a need for the research within my placement at the Royal National Orthopaedic Hospital (RNOH) NHS Trust working on a pain management programme. Working in the psychology department meant that I was regularly exposed to conversations around the healthcare system, the failures of the system and the psychological impact this had on EDS patients. There were many conversations centred around medical gaslighting, dismissal and working on coming to terms with how their health has deteriorated, sometimes due to the lack of appropriate care and input for their EDS. Poor healthcare experiences are linked to worse psychological wellbeing (Eriksen et al., 2023), and therefore I was motivated to conduct research in this area.

Upon looking at the existing literature, there were very few studies that explored healthcare experiences in EDS (Berglund et al., 2010; Estrella et al., 2024; Halverson et al., 2021). None of the papers I found were set in the UK and may not be reflective of UK-based healthcare. Another utilised questionnaire and therefore I did not feel the full experience of patients would have been captured. The final paper in a similar area focused in on a very specific area of experiences where patients felt not respected or their dignity was not upheld. I initially wanted to focus my efforts on understanding experiences in the context of psychological wellbeing as working clinically with EDS patients I had a good insight into how healthcare experiences were impacting them. However, after conducting a review of the literature available, I thought it was important that the research started off broad and explored experiences as a whole. The factors that negatively contributed to the psychological impact were multifactorial (e.g. communication with HCPs and systemic issues), therefore it was essential to explore them and identify the root problems first. Further research could then focus on more specific areas such as psychological wellbeing based on the results generated from this paper.

Methodology

The primary method for data collection was semi-structured interviews. Semi-structured interviews allowed me to explore participants' personal experiences and perspectives in a guided but flexible way, ensuring that each conversation stayed within the study's boundaries

(Adams, 2015). This approach was essential for capturing detailed, nuanced insights into how participants perceived and interacted with the healthcare system for their EDS.

To ensure that the interviews were both relevant and sensitive to the unique concerns of this patient group, I developed a semi-structured topic guide in collaboration with both healthcare staff and EDS patients. The collaborative design process was critical in creating questions that resonated with participants and allowed them to speak openly about a subject that is often sensitive and personal. Aware from my clinical experience that EDS patients frequently report feeling dismissed in healthcare settings, I took extra care to avoid language or phrasing that could be perceived as minimising or invalidating. Each question also had meaningful prompts to encourage participants to elaborate on specific aspects of their experiences, enabling richer data collection without inadvertently steering responses (Bearman, 2019). The areas that were incorporated within the topic guide were related to the positive and negative encounters they had, the emotional and practical impacts of their experiences, and their views on what changes would improve their interactions with HCPs and the healthcare system overall.

To test the topic guide, I conducted a pilot interview with one patient. Pilot interviews provide an opportunity to identify potential problems in the questions and procedural difficulties (Aziz & Khan, 2020). It was also a way for me to practice the interview and identify areas I needed to develop as a researcher and interviewer. Following the pilot interview, no changes were deemed necessary. The questions flowed naturally and appeared to facilitate meaningful, comprehensive responses from the participant. I decided to incorporate the pilot interview into the study's final data set after discussion with my supervisors. The participant provided valuable insight into their experience, and I felt that it was important the value of their narrative was recognised.

Ethics

Applying for ethics was a two-step process as I required approval from both the NHS and the University of Staffordshire. I contacted the research and innovation team at the RNOH to share my research idea with them, particularly as I wanted to advertise for the research project via the hospital. Originally, I expected that the NHS ethics would be a lengthy process as I was requesting access to complete research with the patients directly. I was required to complete a project evaluation form which involved completing a brief literature review, outline the aims of the research, the design and methodology, any ethical issues and how I planned to address these, and the plan for disseminating findings. Ethical approval is an important of the research process and is designed to ensure that participants best interests are at the heart of the research, and it maintains research quality (Morina et al., 2020; Pietila et al., 2020). To my surprise, the project was reviewed and based on how the Health Research Authority defines research, it was concluded that my project would fit into the category of service evaluation. Therefore, my project did not require the lengthy process of approval from a Research Ethics Committee. Although I was relieved, I was also sceptical about the decision as I wanted to ensure that I had all of the relevant ethics in place. I discussed the decision further with the senior research management and government facilitator who explained that the research was classed as a service evaluation as it was not implementing a specific intervention with patients and that the overall aim was to improve quality of healthcare and service provided. Service evaluation projects do not require the same level of governance as research of an interventional nature.

Following NHS ethics approval, I applied for university ethical approval. The university required that NHS ethics is approved and established prior to applying with them as they required a confirmation letter as evidence. Having already completed the NHS form, I found it easier to complete the university ethics form since I had thought about many of the details. Nevertheless, the university ethics came with its own challenges. I submitted it close to the summer break and there was a backlog of forms being assessed which meant that it took approximately 12 weeks to receive a decision. I reflected on the nature of research and how important it is to allocate additional time and account for delays to research project timelines and deadlines due to factors beyond the control of the researcher. After 12 weeks, it was approved with minor flaws. I then had to address the comments made by the ethics committee and outline changes in a cover letter. The feedback received was related to minor writing errors and being more specific with things such as how the participants would 'sign' their consent, how the interview would be arranged after obtaining consent, and specifying whether the interview was audio and/or video recorded. The proposal was reviewed again prior to gaining final approval to start the research. Once I had resubmitted the revised proposal, the final approval only took a few days which was a relief. Reflecting on the comments made by the ethics committee, these were details that should have been made clearer in my form, but I had overlooked. For future research, I would ensure that I am very specific as the ethical review process is in place to maintain research integrity, minimise error and protect participants.

Recruitment and data collection

I received an unexpectedly high level of interest in the research overall which emphasised the importance and significance of the topic for the EDS community. During the first stage of recruitment, I put up posters around the RNOH hospital site as I was aware there would be several patients with EDS accessing the hospital. I made the decision not to approach participants directly within the hospital so that they did not feel pressured to take part purely because they were receiving care from our institution or team. Within a time-period of four weeks, I received only three emails from people indicating their interest which seemed unusual. This may have been due to the fact that the posters were of A4 size and may have been missed in waiting areas. In the meantime, I also reached out to a charity, Ehlers Danlos UK, who agreed to advertise the research on their social media and newsletter. I was overwhelmed by the response, with over 200 people expressing interest via email within the first 24 hours of the study being advertised. Many thanked me for taking the time to focus my research on what was an important area, and some had even started to share their experiences via email. This response was both encouraging and somewhat daunting, as it highlighted a strong need for this research who clearly felt underserved. However, it also introduced an unexpected challenge. I had only 20 interview slots and was concerned about disappointing those I could not include. While I planned to select participants on a first-come, first-serve basis, I decided to use a random selection process given the high interest. I did however inform all those who were unable to take part that I would retain their details for future research and pass also share it with other EDS researchers if they provided consent. The experience reinforced how unheard the EDS community felt and the responsibility that comes with conducting studies that resonate so strongly with the target population.

Preparing for the interviews was a crucial part of my experience. Although I had conducted qualitative research interviews previously, I wanted to ensure that I was fully prepared to deal with any challenges that should arise. It was important to me that the planning was robust and that I felt confident that I could meet the participants needs and put them at the centre of the research. Dempsey et al. (2016) shares several important considerations when planning and conducting interviews on sensitive topics. This included preparing for the interview, planning the time and location, building relationships, protecting vulnerable participants, and planning for disengagement. Although face-to-face interviews are the ideal method of data collection when exploring sensitive topics (Elmir et al., 2011; Taylor et al., 2011), all of the interviews were conducted online. Participants were placed across the country and to facilitate access, it was important that they were in a comfortable place due to their health condition and symptoms. Conducting research within participants homes places them in control (Doody & Noonan, 2013). I did not want the face-to-face nature to be a barrier to participants taking part, especially if they were based nationally, and being inclusive was a priority.

An additional factor I was mindful of was the participants psychological wellbeing. It is not uncommon for health-related research to focus on aspects that are sensitive to discuss (Enosh & Buchbiner, 2005). Not only was I aware that the participants knew I was a Trainee Health Psychologist, the scope of qualitative research is broad and means that information shared can be unpredictable (Rubin & Rubin, 2012). I felt that the knowledge I was a Trainee Health Psychologist opened up the possibility of sensitive conversations that may involve managing risk. Researchers are required to carefully plan who will be conducting interviews based on attributes such as clinical training (Teachman & Gibson, 2013), as depending on the topic, the research can bring up emotional responses like anger, sadness, anxiety and fear (Elmir et al., 2011). Participants may have been more likely to share if they felt vulnerable or suicidal. I had to be confident that I could manage these situations appropriately and that reasonable safety measures were taken to reduce risks (Mealer & Jones, 2014). Based on clinical experience and already working therapeutically with patients, I made the decision with my clinical supervisor that I would be able to manage such situations as I was doing this as part of my clinical role. I felt confident to draw on the skills that I was using to manage risk and signpost individuals to relevant help. I allocated additional time at the end of interviews to debrief fully with participants and check-in with their wellbeing. I also did not book any interviews back-to-back to ensure I had sufficient capacity to deal with any situations should they arise. Additionally, I provided information of organisations the participants could reach out to if they felt distressed by the interview in the debrief form. From clinical experience, I knew that the feeling of overwhelm could set in later rather than immediately after the interview, or they may not have felt that the end of the interview was an appropriate time to share how they were feeling. During the interviews, there were participants who were visibly upset when recalling their experiences. Assessing participants for distress during the interviews and minimising their discomfort is fundamental to good practice (Walker, 2007). I therefore offered them the opportunity to pause the interview, take a break and reminded them that they did not have to continue. Supervision is a crucial part of dealing with sensitive qualitative interviews where the researcher is exposed to emotionally charged and distressing information (Silverio et al., 2022). I had an open space to discuss the interviews with my clinical supervisor which I highly valued.

Data analysis

To analyse the data, I used MS Teams to dictate the interviews which seemed like a practical and efficient choice at first. However, I soon realised the limitations of using it as the transcripts produced contained errors and formatting inconsistencies. I had to revisit each interview and manually correct and verify the text. Although the transcription process was time-consuming, it also proved valuable. Listening to each interview multiple times allowed me to immerse myself in the data and facilitated the ‘familiarisation’ stage of analysis, an essential first step in qualitative research (Braun & Clarke, 2006). I considered outsourcing transcription for efficiency, but I decided against it as I wanted to be familiar with the subtleties in the transcripts and there are also ethical issues associated with sharing the interview content (Hennessy et al., 2022).

Moving into coding and reflexive thematic analysis, I encountered a challenge as there was large volumes of information. I mistakenly created multiple codes that captured the same idea but were labelled with slightly different wording. This required me to revisit the codes and consolidate them to ensure they were not repetitive. Using NVivo helped to streamline the process by allowing me to easily edit overlapping codes, whereas manual methods may have made it extremely difficult to do so. It also made me appreciate the iterative nature of qualitative research.

Once the coding was complete, I moved on to developing themes and sub-themes. I wanted to capture the depth of participants' experiences as fully as possible and there were many ideas that came up. It was difficult to condense down the findings for a concise results section as I wanted to "do the results justice" and ensure the participant's voices were heard. Discussions with my supervisor helped me realise that it was essential to focus on the aim and that within the scope of this research, it would not be feasible to include everything that came up. We discussed writing a second paper to further explore insights that could not be fully addressed in this paper.

The last part of analysing the data was naming the themes. Throughout the process and from feedback received, I was mindful of the language used. For instance, I initially labelled one theme as *"iatrogenic harm"* as I felt it captured the contents of the theme well, but I quickly reconsidered this terminology. Although the paper was intended for an academic audience, it was equally important that the participants could understand the findings as the paper reflects their lived experiences. I chose to revise the theme name to more user-friendly language to honour the participants' stories in an inclusive way.

Dissemination of findings

Producing the report for the purpose of disseminating the findings was a crucial process. I took a solution-focused approach when writing the discussion, deliberately emphasising the practical implications and areas for improvement in healthcare. I aimed to present the data not only as a summary of the results and record of participants' experience, but also to outline where meaningful change could be implemented. This approach was driven by the aim to identify unmet needs as well as the journal I selected. I decided to produce the article for Journal of Disability and Rehabilitation who have published several qualitative papers and EDS-related research. They recommend including recommendations and/or implications of the research in order to contribute constructively towards solutions. I offered to contact all participants directly with the published research paper, all of which were eager to accept.

As I collaborated with Ehlers Danlos UK and they supported the participant recruitment, I agreed to share the results for their newsletter and social media. It was important for me that the results reached the wider community who shared their experiences and for them to feel heard. I also agreed for the results to be shared with the RNOH as they supported development of the research and recruitment and presented the preliminary findings at the Staffordshire University Health Psychology Conference.

Conclusion

The journey of completing this research has been professionally rewarding and personally meaningful. I am eager to see how the findings resonate with the EDS community and the response to their voices being heard. The research experience overall has been invaluable in developing my qualitative research skills; I feel more confident and competent in designing and setting up a project, data collection, analysis, and dissemination.

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Systematic Review Manuscript

Assessing psychological and social predictors of influenza vaccine uptake in hospital-based healthcare workers: A systematic review

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Abstract

Background: Uptake of the influenza vaccine is low among healthcare workers (HCWs). The aim of this systematic review is to identify psychological and social determinants of hospital-based HCWs influenza vaccine uptake. **Methods:** CINAHL, MEDLINE, PsycINFO and Scopus were searched in April 2023. Inclusion criteria were that studies report psychological and/or social predictors of influenza vaccine uptake in hospital-based HCWs. Studies were quality assessed using the Quality Assessment Checklist for Survey Studies in Psychology. **Results:** Fifteen cross-sectional studies were included with a total sample of 12,934 HCWs. We identified eleven constructs across studies: perceived susceptibility, severity, benefits, barriers, cues to action, attitudes, subjective norms, response efficacy, outcome expectancies, risk for others and severity for others. Most studies were deemed unacceptable quality for reasons such as no reported operational definitions of variables and no evidence of measure validity. Due to construct heterogeneity between studies, it was not possible to identify the strongest predictor(s) of influenza vaccine uptake. **Conclusion:** This review identified an absence of clear operational definitions and constructs to assess psychological and social predictors of hospital-based HCWs vaccine uptake. Future research is needed to develop and systematically test a set of constructs to determine the predictors strongly associated with vaccine acceptance.

Keywords: *Influenza, vaccine, uptake, psychological factors, social factors, healthcare worker*

1. Background

Influenza is a highly contagious respiratory viral infection that poses a significant public health challenge each year, leading to considerable morbidity, mortality, and economic burden worldwide [1]. Although most people recover from influenza without medical attention, there are high risk groups where influenza can lead to serious illness or even death [2]. High risk groups include pregnant women, children, the elderly, and people with chronic health conditions [3]. The World Health Organisation [WHO] reports that between 3 to 5 million cases of severe illness and between 290,000 to 650,000 deaths annually worldwide are due to influenza [4]. In 2018/19, there were approximately 40,000 influenza-related hospital admissions, resulting in hospital costs of nearly £10 million [5]. Annual influenza vaccine is currently the most effective method for preventing transmission of influenza and is recommended as a patient safety measure [6, 7]. It is unsurprising that the immunisation of healthcare workers (HCW) emerges as a crucial safety strategy considering the increased risk of complications in high-risk groups. HCWs play a pivotal role in patient care, and their vaccination status can profoundly impact patient safety and the integrity of the healthcare system. HCWs work near people who are clinically vulnerable and are carriers of influenza. They also have an increased risk of exposure to respiratory diseases compared to the general population [8], further amplifying the risk of transmission. Evidence suggests that 17% of patient influenza cases are healthcare related [9]. In addition to transmission being a concern, HCWs are more likely to be off sick if not vaccinated [10], placing strain on the healthcare system as more people become unwell and less staff are available. In the United Kingdom (UK), overall HCW absence due to influenza was 4.5% and higher vaccination rates were associated with reduced staff absence [11]. Influenza vaccination among HCWs is therefore a topic of perennial interest, as it encompasses not only their own individual health and wellbeing, but there are also wider health implications.

Despite extensive efforts to improve vaccination uptake, the rates remain suboptimal. In the UK and other countries, numerous vaccination campaigns and strategies have been implemented to improve vaccination coverage. These have addressed access and logistical challenges such as offering free vaccination, time during work hours to be vaccinated, incentives, and using educational and promotional material [12-15]. There are several factors that may explain why such vaccination campaigns have not resulted in the desired outcome. Research has shown that vaccine hesitancy is driven by concerns about vaccine safety, perceived risk, misinformation, and beliefs about vaccine effectiveness [16-18]. These factors identified are well-known to contribute to vaccine hesitancy in HCWs. Yet, many vaccination campaigns are directed towards areas such as time and convenience. Perhaps this may be due to vaccination campaigns assuming that the barriers and facilitators are the same across healthcare settings when in fact they may differ, thus explaining the lack of efficacy with wider campaigns that are rolled out to all HCWs.

The healthcare systems that HCWs work in can range from inpatient and outpatient hospitals, community-based work, ambulatory care, general practices, local clinics, and medical offices. The nature of the work and patients attended to will vary and therefore factors influencing acceptance of the influenza vaccine may differ based on the type of healthcare setting. Research shows that whilst patient protection is associated with vaccination uptake, patient vulnerability and type of patient contact also play a role [19-21]. Factors influencing influenza vaccine uptake have been found to differ between non-hospital and hospital-based workers [22]. Vaccination rates were significantly higher for hospital-based workers than non-hospital workers. Whilst the two groups had similar experiences of the practical and logistical reasons for vaccination, like on-site access and mandatory policy, there were key differences in motivating factors. In order of the strongest predictor, hospital-based workers were motivated by belief that HCWs had a responsibility to be vaccinated, perceived importance and no fear of adverse effects, whereas, non-hospital-based workers were motivated by perceived importance, no fear of adverse effects and their perceived susceptibility to influenza.

Psychological factors identified as playing a role in influenza vaccine acceptance in the above study as well as other influenza vaccine studies often map onto constructs highlighted in the Health Belief Model (HBM) [23], or Protection Motivation Theory (PMT) [24]. These theories propose that vaccine acceptance is determined by psychological factors, including an individual's perceived susceptibility to a disease, the perceived severity of the disease, the perceived benefits of being vaccinated and perceived barriers to vaccination. Additionally, individual cues to action, such as recommendations from healthcare providers or government departments can significantly impact vaccine acceptance. The HBM can vary for individuals and groups as it is shaped by a multitude of individual factors and experiences. The HBM encompasses psychological factors (e.g., risk perception, beliefs, and attitudes) and social factors (e.g., social norms) that are known to influence and predict health-related behaviours like influenza vaccine acceptance [25].

Although practical and logistical barriers may be a shared issue, clearly the focus on these in campaigns has led to underwhelming results in terms of increasing HCWs vaccine acceptance. Therefore, the present review focuses on psychological and social factors, rather than concentrating on practical barriers such as time and cost. We believe that it is important to identify key psychological predictors of vaccine acceptability that could serve as targets for intervention. Psychological and social factors are related but it is important to note that they are distinct; the psychological factors are the individual-level processes and beliefs about the vaccine and flu, whilst the social factors refer to the community and social level processes that may influence an individual [26]. Acknowledging that the psychological and social factors influencing uptake are not uniform across health settings is also necessary for understanding vaccine related behaviour. Exploring predictors of influenza vaccine uptake that account for the context rather than relying on general frameworks for all HCWs has the potential to shape tailored campaigns and efforts.

Aim

The primary aim of the present systematic review is to identify the psychological and social predictors of influenza vaccine uptake among hospital-based HCWs.

2. Materials and Methods

2.1 Reporting guidelines

The updated Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) was followed when conducting this Systematic Review. A protocol was registered with PROSPERO, which is available online under the registration number: CRD42023394685.

2.2 Eligibility criteria

To be included in this review articles had to meet the following inclusion criteria:

i. Examined seasonal influenza vaccine uptake among HCWs
ii. In a hospital-based setting
iii. Report measures of psychological and/or social predictors of influenza vaccine uptake

Articles were excluded if they were:

i. Focused on vaccines that were not the seasonal influenza vaccine (e.g., pandemic influenza H1N1 or COVID-19 vaccine)
ii. Based in non-hospital settings (e.g., GPs, care homes)
iii. Reported only knowledge-based measures related to influenza vaccine uptake
iv. Not written in English

2.3 Search strategy

On 23 April 2023, a comprehensive literature search of peer-reviewed articles was conducted using the following databases: CINAHL, MEDLINE, PsycINFO and Scopus. The following search terms were used: (Healthcare worker OR Healthcare staff OR Healthcare professional) AND (Influenza OR flu) AND (Vaccin* OR immuniz* OR immunis*) AND (Barrier* OR facilitator* OR factor* OR predictor*). No restrictions on country of study or publication date were imposed.

2.4 Study selection

The references returned from the database searches were saved on to Zotero citation management software [27]. Duplicates were removed using Zotero's de-duplication tool followed by manual inspection. Remaining papers were uploaded to Rayyan, a systematic review software package for eligibility screening [28]. Titles and abstracts were screened and labelled as irrelevant, relevant, or uncertain. The first author (AS) screened all papers and the third author (NS) screened 10% of all the papers to ensure screening had been completed accurately. Any discrepancies were resolved by discussion. Full-text reports for relevant and uncertain papers were retrieved from online databases to determine final inclusion. Inclusion and exclusion criteria were followed at screening to minimise bias and a screening table was completed. Study authors were contacted for inaccessible reports.

2.5 Data extraction

The following data were extracted from all included studies: title, authors, publication year, study location (country where data was collected), gender, age, study design, context (i.e., what healthcare setting), sample size, type of healthcare worker, research question / aim, main outcome (i.e., flu vaccine uptake) and predictors of the outcome. The authors reported the predictors as odds ratios (OR) and their 95% confidence intervals. Data extraction was conducted independently by the first author (AS) using a data extraction form.

2.6 Coding constructs

Most studies did not explicitly refer to specific health psychology models or theories to justify the content of measures. Consequently, the first and second author (AS & RC) coded the items to enable comparison of constructs used across included studies. Coding was informed by a pragmatic set of decisions. First, if the paper explicitly referred to a theory, then the authors checked that constructs statements mapped on to the theoretical constructs (e.g., If I don't get vaccinated, I will get sick with flu explicitly mapped on to perceived susceptibility in the HBM). Second, if the paper did not explicitly reference a theory, the authors independently coded the items used to assess predictors of vaccine uptake and compared the identified constructs (e.g. perceived susceptibility, perceived risk) to frequently used health psychology theories: HBM [23], PMT [24], Theory of Planned Behaviour (TPB) [29]. The second author (RC) has expertise in coding health psychology constructs and has authored several systematic reviews of studies testing health psychology theories [References blinded for peer review]. Differences in coding were resolved by discussion.

2.7 Quality assessment

The Quality Assessment Checklist for Survey Studies in Psychology (Q-SSP) was used to assess the quality of included studies [30]. The Q-SSP assesses four domains: rationale, sampling, data, and ethics. An overall quality score, expressed as a percentage, was then computed. A score of 75% and above on the Q-SSP tool indicates acceptable quality and below 75% is questionable quality. The first author (AS) independently assessed the quality and the third author (NS) independently assessed 20%. Any potential discrepancies were resolved by discussion.

2.8 Synthesis of results

Studies differed in the measures utilised to understand vaccine behaviour, therefore a narrative synthesis of the 14 studies was conducted. The aim was to identify predictors of vaccine uptake. A meta-analysis of the results could not be completed due to heterogeneity between studies. A table of the findings from individual studies is presented.

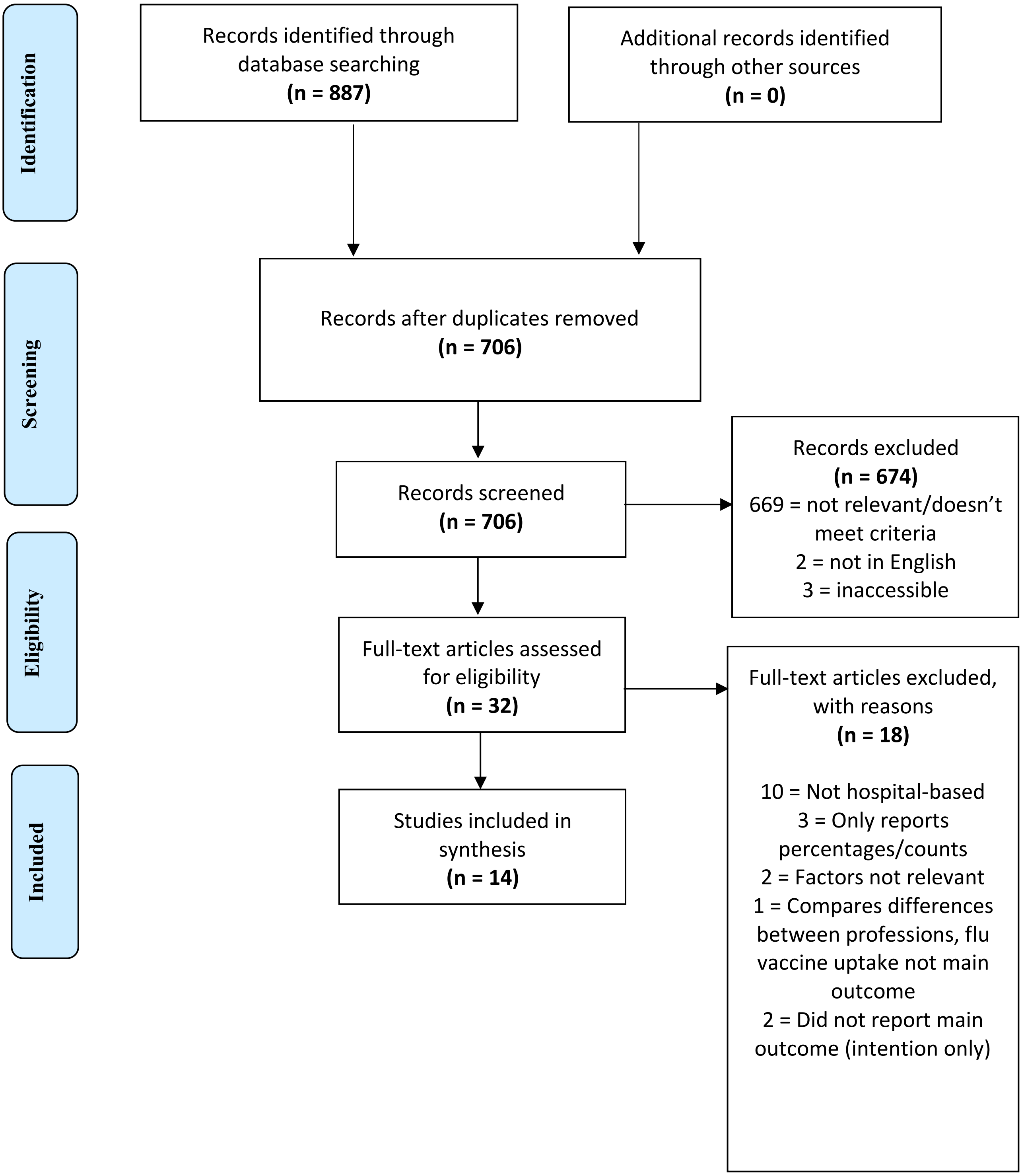
3. Results

3.1 Study selection

The database search yielded a total of 887 articles. Once duplicates had been removed, there were 706 papers left for title and abstract screening. A total of 679 papers did not meet inclusion criteria, while two papers were excluded as they were not written in English. Efforts were made to obtain three papers that were inaccessible by emailing the lead author but there was no response and therefore they were excluded. Full-text screening was performed on the remaining 32 papers, 18 of which did not meet the inclusion criteria. Both reviewers agreed on the screening and one discrepancy was raised which was resolved by discussion. A total of 14 papers met the criteria and included in the synthesis (see Figure 1 for PRISMA diagram).

Figure 1

PRISMA Study Flow Diagram



3.2 Characteristics of included studies

A summary of the study characteristics is presented in Table 1. All studies were completed between 2004 to 2021. Overall, 12,665 HCWs were included, with sample sizes ranging from 200 to 3,872. Studies were carried out in 11 different countries; three in the United States [31-33], two in Saudi Arabia [34, 35], one in the Netherlands [36], one in China [37], one in Honduras [38], one in Costa Rica [39], one in Singapore [40], one in Israel [41], one in Turkey [42], one in Ireland [43], and one in the UK [44]. All studies used cross-sectional designs using surveys containing psychological and/or social measures, with self-reported vaccination status in the past year as the outcome. Females were over-represented in all studies, ranging from 50% to 89%. The majority of sampled HCWs were doctors and nurses. Two studies failed to report the sample age [34, 38], one study did not report gender data [38], and one study did not report the type of healthcare worker taking part [32].

Most studies did not reference a theory when outlining the measures [33-35, 37-39, 41, 43, 44]. Instead, seven of the papers reported that the questionnaires were measuring attitudes and knowledge [34, 35, 37-39, 41, 43], one paper described that they were measuring factors associated with influenza vaccination [44], and one paper reported that they were exploring reasons for refusal of the vaccine and knowledge [33]. From the papers that did cite a theory, two referenced the HBM [36, 40], one referred to HBM constructs (e.g., perceived severity) but not the HBM [42], and two studies referenced the theory of reasoned action (TRA) [31, 32].

3.3 Quality assessment

Quality scores using the Q-SSP are presented in Table 2. Only two studies were rated as being of acceptable quality [34, 40], with the remaining 12 considered to be questionable quality. A common weakness across the studies was that they did not provide operational definitions of vaccine uptake and there was a lack of information provided around key characteristics of the sample, such as ethnicity or indicators of socioeconomic status. Another shared weakness was a lack of evidence provided for the validity of measures across studies, aside from two studies that conducted pilot testing of the questionnaires [34, 40]. There was also an absence of rationale for the sample size provided with no narrative explanation as to why it was sufficient or a statistical calculation, except for three studies who used power calculations to justify their sample sizes [34, 38, 39]. No papers mentioned the process of debrief. A shared strength amongst the studies was that specific research questions and aims were stated and study authors did not attempt to generalise the results to other populations within the discussion. The first and third author agreed on the overall quality rating for the studies, with two discrepancies identified that were resolved by discussion. The discrepancies had no impact on whether the studies were classed as acceptable or unacceptable.

Table 1 *Characteristics of included studies*

Author, year	**Country**	**Context**	**Sample size (N)**	**Population type**	**Sample age**	**% Female**	**Ref to theory**
Alshammari et al. 2019	Saudi Arabia	Government-run and private hospitals	364	60.4% Nurses 14.8% Physicians 12.6% Pharmacists 7.9% Others 4.1% Laboratory scientists	Not reported	61.8%	No
Asma et al. 2016	Turkey	University hospitals	628	71.3% Nurses 28.2% Physicians	Mean (SD): 29.6 ± 9.2 Range 17–62	64.6%	HBM constructs but not HBM
Hopman et al. 2011	The Netherlands	Hospitals	1295	71.5% Nurses 12.5% Physicians 4.1% Nursing assistants	Mean (SD): 40.4 (10.7) Range 19 to 69	80.8%	HBM
Lee et al. 2017	China	Hospitals	393	56.0% Nurses 44.0% Physicians	46.3% 25-34 35.6% 35-44 18.1% >=45	67.4%	No
Madewell et al. 2021a	Honduras	Hospitals	947	37.9% Nursing assistant 27.8% Other healthcare profession in direct contact with patients (e.g. dentists, psychologists, social workers, radiology technicians, laboratory staff, cleaning staff, customer service staff) 19.4% Physicians 14.9% Nursing professional	Not reported	Not reported	No
Madewell et al. 2021b	Costa Rica	Public hospitals of the Costa Rican Social Security Fund	747	32.1% Other healthcare profession (e.g. dentists, psychologists, radiology technicians) 26.9% Nursing professional 26.3% Physicians 14.7% Nursing assistant	Median: 37	59.6%	No
Mar Kyaw et al. 2019	Singapore	Adult Tertiary care hospital	3873	58.2% Nursing staff (e.g. assistant nurses, nurse managers, nurse educators) 10.6% Medical staff (e.g. clinicians with recognised medical degrees)	Mean (SD): 33.4 (9.7)	84%	HBM

				7.4% Administrative staff (managers, executives, clerks) 6.9% Allied health staff (e.g. pharmacists, dieticians, clinical research co-ordinators) 6.9% Ancillary staff (e.g. administrative assistants, health attendants, technicians)			
Nowalk et al. 2008	United States	Tertiary, community, and specialty hospitals	726	Non-physician healthcare workers	Mean: 43.2	88%	TRA
Nowalk et al. 2010	United States	Tertiary, community, and specialty hospitals	837	Not reported	**Vaccinated** 42.3% 50+ 57.7% Under 50 **Not vaccinated** 25.3% 50+ 74.7% Under 50	**Vaccinated** 89.0% **Not vaccinated** 89.4%	TRA
Nutman et al. 2016	Israel	Tertiary care hospital	468	28.4% Other professions (including administrative and support staff) 25.9% Physicians 25.9% Allied health professionals 19.8% Nurses	41.7% 18-39 55.1% 40-65 3.2% >= 65	72.4%	No
Piccirillo et al. 2006	United States	Urban teaching hospital	200	Emergency department (ED) healthcare workers ED physicians, visiting physicians from other departments, fellows, residents, physician assistants, nurses, and students. Paraprofessionals included paramedics, paramedic students, nurse technicians, and radiology technicians. Employees who worked in the ED but did not have direct patient contact were considered support staff (clerks,	21-30 = 81 (40.5%) 31-40 = 55 (27.5%) 41-50 = 34 (17.0%) 51-60 = 25 (12.5%) >60 = 5 (2.5%)	50.2%	No

				administrators, housekeeping, volunteers, security guards, and others).			
Quigley et al. 2006	Ireland	Tertiary referral hospital	1124	35.7% Nursing 32.0% Clerical / administrative 10.3% Professions allied to medicine 8.4% Physicians 6.9% Laboratory workers 6.7% Ward attendant / porter / security	18 – 35 = 505 (44.9%) 36 – 45 = 294 (26.1%) 46 – 55 = 220 (19.6%) >= 56 = 81 (7.2%) Not stated = 25 (2.2%)	79.8%	No reference
Qureshi et al. 2004	United Kingdom	Hospital-based acute services	551	Medical, nursing, physical, occupational and speech therapists, radiographers and dieticians, admin/clerical, ancillary (porters, drivers, laundry workers and ward housekeepers), other	7.5% <24 22.1% 25-34 27.4% 35-44 30.5% 45-54 12.1% 55-64 0.4% 65+	86.9%	No reference
Rehmani et al. 2010	Saudi Arabia	Hospital	512	62.3% Nurses 31.1% Physicians 6.6% Other	Mean: 35.8 ± 8.9, range 22 to 64 years	66.4%	No reference

Note. Definitions of theories. Health Belief Model (HBM): Psychological framework that looks at individual's beliefs, perceptions, and attitudes and how they influence health-related behaviours. Suggests that people are more likely to undertake health-related actions if they perceive a personal threat to their wellbeing, believe that the specific behaviour will reduce the threat, and see the benefits of adopting the behaviour as outweighing the costs of barriers.
Theory of Reasoned Action (TRA): A model that suggests individuals decide whether to enact a specific behaviour based on their attitudes towards it and subjective norms (social expectations and perceptions of others' opinions regarding the behaviour). Intention to perform the behaviour is the most proximal determinant of whether the behaviour will be enacted.

Table 2 *Quality assessment scoring*

	Alshammari et al. (2019)	Asma et al. (2016)	Hopman et al. (2011)	Lee et al. (2017)	Madewell et al. (2021a)	Madewell et al. (2021b)	Kyaw et al. (2019)	Nowalk et al. (2008)	Nowalk et al. (2010)	Nutman et al. (2006)	Piccirillo et al. (2006)	Quigley et al. (2006)	Qureshi et al. (2004)	Rehmani et al. (2010)	Asma et al. (2016)
Was the problem or phenomenon under investigation defined, described, and justified?	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
Was the population under investigation defined, described, and justified?	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
Were specific research questions and/or hypotheses stated?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Were operational definitions of all study variables provided?	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Were participant inclusion criteria stated?	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1
Was the participant recruitment strategy described?	1	1	1	1	0	0	1	1	1	1	0	1	1	1	1

Was a justification/ rationale for the sample size provided?	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Was the attrition rate provided?	0	1	0	0	0	0	1	1	1	0	0	1	0	0	1
Was a method of treating attrition provided?	0	1	0	0	1	0	1	1	1	1	0	0	0	0	1
Were the data analysis techniques justified?	1	1	0	0	0	1	1	1	1	1	0	0	1	1	1
Were the measures provided in the report (or in a supplement) in full?	1	1	1	1	1	1	0	0	1	1	0	0	1	1	1
Was evidence provided for the validity of all measures (or instrument) used?	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Was information provided about the person(s) who collected the data?	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0
Was information provided about the context (e.g., place) of data collection?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Was information provided about the duration (or start and end date) of data collection?	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1

Was the study sample described in terms of key demographic characteristics?	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Was discussion of findings confined to the population from which the sample was drawn?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Were participants asked to provide (informed) consent or assent?	1	1	0	1	1	1	1	0	0	0	1	0	0	0	1
Were participants debriefed at the end of data collection?	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Were funding sources or conflicts of interest disclosed?	1	1	1	1	1	0	1	0	1	1	1	0	1	1	1
Total quality score (%)	75	70	55	60	65	60	75	60	14	55	45	35	12	60	70

3.4 Coding of constructs and health psychology theories

Measures reported in included papers were coded into 11 constructs by the first and second authors (AS and RC): (1) perceived susceptibility, (2) perceived severity, (3) perceived benefits, (4) perceived barriers, (5) cues to action, (6) attitudes, (7) subjective norms, (8) response efficacy, (9) outcome expectancies, (10) risk for others, and (11) severity for others.

3.5 Narrative synthesis

Univariate analyses from included studies are presented in Table 3 below. One of the included studies only reported multivariate analyses [33]. Secondary data (multivariate analyses) extracted from papers is summarised in Table 4. Due to heterogeneity in measures reported by authors, a narrative synthesis of the extracted data was conducted for each of the constructs identified by the authors (see above for list).

3.5.1 Perceived susceptibility

Perceived susceptibility refers to an individual's personal susceptibility of contracting influenza. There were two primary themes in the items used to measure this construct: individuals who believed they were prone to contracting flu or faced a heightened risk of influenza without vaccine, and those who felt their risk was elevated specifically due to their job as a HCW. HCWs who perceived themselves to be susceptible to influenza and felt that they would catch the flu easily or that they were at risk due to their job were more likely to be vaccinated [32, 35, 36, 41, 42, 44]. The highest OR reported was 9.67 (95% CI, 5.79-16.15), for agreeing that HCWs were exposed to a risk of getting influenza. For those who already had flu, one paper reported an OR close to 1 (OR 1.17 [95% CI, 0.56-2.44]) [44], suggesting that it did not affect the likelihood of being vaccinated and how susceptible they felt.

3.5.2 Perceived severity

Perceived severity refers to an individual's perception of how severe a condition or illness is. HCWs who perceived influenza to be severe or dangerous were more likely to be vaccinated [35, 36, 40, 42]. Two papers used an identical measure for perceived severity but yielded varying outcomes [36, 42]. The former study found that HCWs were 1.86 (95% CI, 0.94 – 3.69) times more likely to accept influenza vaccine if they thought it was a potentially serious disease, whilst the latter study reports almost double the odds of being vaccinated (OR 3.44 [95% CI, 2.65 – 4.45]).

3.5.3 Perceived benefits

Perceived benefits are an individual's subjective assessment of the positive outcomes or advantages of accepting the influenza vaccine. Three studies reported perceived benefits of the influenza vaccine - these were mostly related to the belief that the vaccine reduces personal risk and risk of spreading it to others [35, 36, 42]. An evaluation that the benefits of the vaccine were greater than the risks resulted in people being twice as likely to be vaccinated (OR 2.08, 95% CI [1.39 - 3.11]) [35]. Belief that the vaccine would be protective for oneself was reported to have led HCWs to be up to 30 times more likely to be vaccinated [36, 42]. Further, protection of others was a popular advantage of the vaccine. HCWs who had a view that the vaccine was protective for their patients were up to 6 times more likely to be vaccinated [36, 42]. The odds of being vaccinated were even higher when the vaccine was perceived to reduce the risk of infection to family with one study reporting (OR 6.07, 95% CI [3.86-9.52]) [36], and another study reporting (OR 9.31, 95% CI [2.87-30.17]) [42].

3.5.4 Perceived barriers

Perceived barriers are an individual's subjective assessment of the obstacles, challenges and negative aspects associated with influenza vaccine uptake. The main barriers to vaccination were a fear or concern of adverse reactions, including side-effects and that the vaccine would cause flu [31, 32, 36, 39-42, 44]. The lowest odds of being vaccinated was related to the belief that the vaccine causes flu (OR 0.22, 95% CI [0.12-0.39]) [31]. Although concern about side-effects and flu symptoms overall was a barrier, this needs to be distinguished from previous experiences of being unwell or experiencing side-effects after the vaccine. Three papers found that past experience of side-effects or flu symptoms after being vaccinated did not reduce odds of vaccination [36, 42, 44]. One paper reported dislike of injections as a barrier to vaccination [44], but this did not reduce the odds of being vaccinated (OR 1.03, 95% CI [0.61-1.76]).

3.5.5 Cues to action

Cues to action refers to the external triggers that prompt an individual to accept influenza vaccination. External cues to action were related to having an awareness or knowledge of the advice and recommendations from official agencies and receiving training about vaccination or influenza. Four studies [34, 36, 37, 42] reported odds ratios ranging from OR 1.19 (95% CI, 0.94-1.51) when there was an awareness of the advice [36], to OR 6.35 (95% CI, 1.79-22.57) among nurses who received training about vaccination within the last 5 years [37]. In the same study, doctors had much lower odds of being vaccinated when receiving training about vaccination in last 5 years compared to nurses, OR 1.28 (95% CI, 0.19-8.57), but they were twice more likely to be vaccinated if they received training about influenza, OR 2.21 (95% CI, 0.34-13.43).

3.5.6 Attitudes

Attitudes refers to an individual's feelings, beliefs, or judgement about the influenza vaccine. Only two studies reported attitudes to the vaccine [31, 42]. Positive attitudes towards the vaccine led to a higher odds of being vaccinated against influenza. For instance, HCWs who believed the vaccine is useful were 5.22 (95% CI, 1.60-16.98) times more likely to have been vaccinated and one study reported that HCWs were 19 (95% CI, 9.46-38.16) times more likely to be vaccinated if they thought that getting the flu shot is wise. However, being against vaccination due to beliefs had an inhibitory effect on vaccination [31], with HCWs being 0.5 (95% CI, 0.21-1.22) times less likely to be vaccinated.

3.5.7 Subjective norms

Social influences refer to the impact factors such as societal norms and expectations have on an individual's health behaviours. Social influences on influenza vaccination uptake were a strong motivator with increased odds of being vaccinated across three studies [31, 36, 42]. The social influences related to others believing it was important such as family, colleagues, health authorities and place of work. Loved ones seemed to be one of the most significant motivators in two of the studies with people being up to 6.52 (3.14-13.54) times more likely to be vaccinated [36, 42].

3.5.8 Response efficacy

Response efficacy refers to an individual's perception or belief about the effectiveness of the influenza vaccine. Perceptions related to the efficacy of the vaccine could either be a barrier or motivator. Belief that the vaccine is effective at preventing influenza was found to increase odds of vaccination between 3.93 to 29.68 times in five studies [32, 34, 41, 42, 44]. Two had differing results and believing the vaccine was effective in preventing influenza did not lead to greater chances of influenza vaccine uptake [35, 40]. One paper did not report odds ratios but investigated two factors related to response efficacy [43]. The first that the vaccine was effective in preventing flu which was significantly associated with vaccine acceptance ($\chi^2 = 130.1$, $p < .001$), and belief that the vaccine had prevented them from getting flu in the past was also significantly associated with vaccine acceptance ($\chi^2 = 162.1$, $p < .001$).

3.5.9 Outcome expectancies

Outcome expectancies refers to the expected outcomes or consequences associated with the influenza vaccine. Three studies included items related to no expectation of side-effects or knowing that the side-effects would not be severe [36, 40, 42]. HCWs who did not expect side-effects following the vaccine were 1.87 (1.48-2.36) times more likely to be vaccinated [36], and 2.23 (1.28-3.88) times more likely to be vaccinated [42]. Participants in one paper were more sceptical and recognition that side-effects would not be severe did not make any meaningful difference to whether people would be vaccinated (OR 1.13 [95% CI 0.93-1.38]) [40]. Believing that the vaccine was safe slightly improved odds in the same group to 1.46 (95%CI, 1.14-1.87) [40]. In other studies, knowing that it was unlikely to experience an allergic reaction did increase odds of being vaccinated by 1.70 (1.06-2.73) times [36], and at a much higher degree in [42], (OR 5.47 [95% CI, 2.96-10.11]).

3.5.10 Risk for others

The construct refers to an awareness of the risk that one can spread influenza to others. Worry about spreading influenza to family and patients was a motivating factor for vaccination in five studies [31, 35, 36, 41, 42]. People were more likely to be vaccinated if they thought that they could spread influenza to others. HCWs were 7.36 (95% CI, 2.66-20.33) times more likely to be vaccinated if they thought it would affect their family [41], and 7.44 (95% CI, 5.53-10.01) times more likely to be vaccinated against influenza when they were aware of the risk of infecting patients [36].

3.5.11 Severity for others

This construct refers to the potential severity of influenza for others (e.g. family, friends, patients). Studies reporting on the perceived severity of influenza for others (family and patients) had mixed results [35, 36, 40, 42]. The belief that it was dangerous for patients did not result in greater odds of being vaccinated in one study, OR 0.96 (95% CI 0.40-2.35) [42]. In contrast, in another study [36], HCWs were 14 times more likely to be vaccinated if they believed it was dangerous for their patients (OR 14.32 [95% CI, 1.93-106.37]). Only one study included a measure on influenza being dangerous for family [42] with HCWs being 1.87 (0.73-4.82) times more likely to be vaccinated.

3.5.12 Related measures and concepts

The measures of one paper could not be coded as representing a singular construct but still satisfied the inclusion criteria [38]. The authors reported results of an index capturing an attitude score and another capturing a knowledge score. However, they did not provide the specific results for each item within the attitude or knowledge index. The attitude index comprised of items that reflected multiple constructs related to health beliefs such as perceived susceptibility, perceived risk, perceived benefits, and vaccine effectiveness. The knowledge index consisted of measures that tested HCWs knowledge around influenza risk and transmission. Greater knowledge was not found to increase odds of vaccination (OR 1.06, [95% CI 0.95-1.18]), and positive attitudes were associated with slightly higher odds of vaccination (OR 1.27 [95% CI 1.21-1.34]).

Table 3 *Results of included studies (univariate analyses)*

Author, year	**Variable**	**OR**	**95% LLCI**	**95% ULCI**	**p-value** *(where reported)*
Alshammari et al. 2019	Vaccine is effective in preventing influenza	3.934	1.979	7.820	
	Influenza vaccine should be part of your medical practice	1.326	0.684	2.574	
	Have standing orders regarding the influenza vaccine	1.570	1.017	3.214	
	Aware of ACIP, SCIPV or CDC recommendations	2.131	1.163	3.907	
Asma et al. 2016	**Perceived risk**				
	I have high risk for influenza	6.87	2.12	22.30	0.001
	I can spread infection to my patients even if I am asymptomatic	2.80	1.38	5.66	0.004
	Health professionals are under the highest risk in case of an epidemic	2.90	0.69	12.22	0.147
	I can spread infection to my family even if I am asymptomatic	1.69	0.93	3.05	0.084
	Severity of the perceived risk				
	Influenza is dangerous for me	1.86	0.94	3.69	0.073
	Influenza is dangerous for my patients	0.96	0.40	2.35	0.937
	Influenza is dangerous for my family	1.87	0.73	4.82	0.194
	Perceived benefit				
	Vaccination reduces my personal risk	30.21	4.15	219.90	0.001
	Vaccination reduces the risk of spreading the disease to my patients	1.36	3.22	55.40	<0.001
	Vaccination reduces the risk of spreading the disease to my family	9.31	2.87	30.17	<0.001
	Perceived barriers				
	I don't expect a side effect after vaccination	2.23	1.28	3.88	0.004
	The inactive influenza vaccination currently available in our country is effective	7.96	3.03	16.11	<0.001
	Allergic reaction against influenza vaccine is rare, or none	5.47	2.96	10.11	<0.001
	Autoimmune disease development risk is rare, or none, after influenza vaccine	4.69	2.59	8.50	<0.001
	I am not against vaccination	3.04	1.19	7.77	0.020
	One can catch influenza even if vaccinated	1.92	0.80	4.60	0.144
	I had side effects from my previous influenza vaccinations	1.84	1.04	3.27	0.036

	The influenza vaccine itself does not cause influenza	1.38	0.79	2.39	0.254
	Health professionals should be vaccinated even if patients have been vaccinated	5.99	2.53	14.20	<0.001
	Vaccination does not reduce the overall immunisation	1.63	0.90	2.95	0.108
	I believe the vaccines are useful	5.22	1.60	16.98	0.006
	I believe in alternative medicine	1.04	0.57	1.91	0.895
	I believe that natural methods are better than vaccination	0.35	0.20	0.61	<0.001
	I am against vaccination due to my beliefs	0.51	0.21	1.22	0.130
	Motivating factors				
	I know the Ministry of health recommendations about influenza vaccination	2.53	1.25	5.13	0.010
	I know the Ministry of health recommendations about the age groups and chronic diseases which require influenza vaccination	3.09	1.57	6.12	0.001
	I have sufficient knowledge about influenza	2.20	1.02	4.77	0.045
	I get knowledge about influenza from reliable sources every year	2.68	1.41	5.09	0.003
	The ministry of health provides free vaccination for health professionals	2.37	1.26	4.45	0.007
	Attitudes				
	I feel that health professionals not spreading the disease to their patients is important	2.26	0.80	6.42	0.125
	I believe that health professionals should be vaccinated for the continuity of health services	5.45	2.14	13.88	<0.001
	Right of choice for vaccination should be preserved for health professionals	0.49	0.26	0.94	0.033
	Influenza vaccine should be mandatory for health professionals	3.39	1.91	6.03	<0.001
	Social effects				
	My relatives believe that my vaccination is important	6.52	3.14	13.54	<0.001
	My institute recommends my vaccination	4.06	2.06	8.01	<0.001
	My colleagues believe that my vaccination is important	6.43	3.09	13.38	<0.001
	The Ministry of health recommends vaccination of health professionals	2.82	1.43	5.57	0.003
	The health authorities I respect recommend vaccination	4.58	2.19	9.51	<0.001
Hopman et al. 2011	**Perceived susceptibility**				
	High personal risk for influenza vaccination	6.75	4.83	9.43	<0.001
	Aware of risk to infect patients	7.44	5.53	10.01	<0.001

	During an epidemic HCWs are more likely to get influenza infection	2.62	1.97	3.50	<0.001
	Perceived severity				
	Influenza is dangerous for me	3.44	2.65	4.45	<0.001
	Influenza is dangerous for my patients	14.32	1.93	106.37	<0.001
	Perceived benefits				
	Vaccination reduces the personal risk of influenza	2.43	1.80	3.29	<0.001
	Vaccination reduces the risk to infect patients	6.52	4.07	10.45	<0.001
	Vaccination reduces the risk to infect family members	6.07	3.86	9.52	<0.001
	Perceived barriers				
	Experienced side-effects in the past	1.66	1.14	2.40	0.009
	Side-effects in the past are no reason for not getting vaccinated this year	10.03	7.57	13.28	<0.001
	Expecting no side-effects after vaccination	1.87	1.48	2.36	<0.001
	Expecting no allergic reactions or autoimmune disease after vaccination	1.70	1.06	2.73	0.026
	Vaccination is necessary, even though patients are protected by their own vaccination already	3.01	1.51	6.02	0.001
	Cues to action				
	Knowing there is advice from the Dutch Health Council	1.19	0.94	1.51	NS
	Having knowledge on the contents of this advice	1.59	1.25	2.02	<0.001
	Attitudes				
	Finding it important that HCWs do not infect patients	5.61	3.57	8.82	<0.001
	HCWs should get vaccinated to ensure continuity of care	17.14	12.47	23.57	<0.001
	Not finding it important that HCWs have freedom of choice concerning influenza vaccination	3.51	2.24	5.51	<0.001
	HCWs should get vaccination because of their duty not to harm	10.15	7.58	13.58	<0.001
	Social influences				
	People close to me think it is important for me to get vaccination	6.09	4.69	7.91	<0.001
	My colleagues think it is important for me to get vaccination	4.16	3.25	5.33	<0.001
	The chief of department should recommend vaccination	6.68	5.13	8.70	<0.001
	Finding it important to do what people close to me think	2.82	2.21	3.60	<0.001
Kyaw et al. 2018		**adjusted OR**			
	Influenza is a potentially serious disease	1.31	1.12	1.54	.001
	Vaccine can cause flu	1.06	0.92	1.22	.43
	Side effects after vaccination are common	0.75	0.63	0.88	<.001

	Side effects after vaccination are not severe	1.13	0.93	1.38	.226
	Vaccine is effective in preventing influenza	0.98	0.80	1.21	.863
	Influenza vaccine is safe	1.46	1.14	1.87	.003
	Vaccine is not effective in preventing flu	0.78	0.65	0.94	.010
	Vaccine is more dangerous than virus	0.98	0.81	1.18	.848
Lee et al. 2017	**Doctors**				
	Received training about influenza within 5 years	2.12	0.34	13.43	0.43
	Received training about vaccination within 5 years	1.28	0.19	8.57	0.80
	Nurses				
	Received training about vaccination within 5 years	6.35	1.79	22.57	0.004
	Influenza vaccination of healthcare workers is important to prevent patients’ infection				
	Doctors	2.75	0.78	9.70	0.116
	Nurses	2.67	0.88	7.99	0.082
	Influenza vaccine is an important measure for preventing influenza infection				
	Doctors	2.57	0.73	9.08	0.143
	Nurses	2.78	1.01	7.60	0.047
Madewell et al. 2021a	Knowledge score	1.06	0.95	1.18	
	Attitude score	1.27, aOR: 1.14	1.21, 1.07	1.34, 1.21	<0.001
Madewell et al. 2021b	Believe everyone has the same risk of getting sick or dying from influenza	0.90	0.65	1.26	
	Believe the influenza vaccine may cause harm	0.49, aOR: 0.62	0.36, aOR: 0.44	0.67, 0.89	
	Believe the influenza vaccine causes flu-like symptoms	0.54	0.26	1.11	
Nowalk et al. 2008	Inactivated influenza vaccine prevents the flu	1.53	0.95	2.46	
	Physician recommends influenza vaccine	3.04	1.78	5.20	<.05
	Getting flu shot is wise	19.00	9.46	38.16	<.05
	Unvaccinated household contacts of person with flu will likely get flu	1.70	0.98	2.97	
	Flu shot causes flu	0.22	0.12	0.39	<.05

<table>
<tr><td>Nowalk et al. 2010</td><td>Getting a flu vaccine is more trouble than it is worth
Flu shot causes flu
Unvaccinated person will likely get flu
A health care worker with patient contact has a duty to get a vaccine to protect patients</td><td>0.25
0.31
3.82
5.89</td><td>0.15
0.22
1.97
3.75</td><td>0.41
0.44
7.40
9.25</td><td></td></tr>
<tr><td>Nutman et al. 2016</td><td>Influenza is widespread and can affect any person at any age
Influenza can have severe complications including death
Hospital workers are at an increased risk of contracting influenza because of their job
The most effective way to prevent influenza is vaccination
Vaccine side effects can be more severe than the flu
Vaccine can cause the flu
People who had the flu don’t need to get vaccinated
I catch the flu easily
If I don’t get vaccinated I will get sick with the flu
If I get sick with the flu I may infect my family
If I get sick with the flu I may infect my patients</td><td>0.981
2.215
5.755
7.328
0.348
0.280
1.534
1.613
3.526
7.355
4.092</td><td>0.242
1.087
3.449
4.778
0.219
0.186
0.158
0.921
2.158
2.66
2.022</td><td>3.974
4.513
9.602
11.238
0.554
0.421
14.87
2.824
5.761
20.333
8.282</td><td></td></tr>
<tr><td>Quigley et al. 2006</td><td colspan="5">The flu vaccine is effective against the flu.
<table>
<tr><th></th><th>Strongly disagree</th><th>Disagree</th><th>Neither agree nor disagree</th><th>Agree</th><th>Strongly agree</th><th>Total</th></tr>
<tr><td>Vaccinated</td><td>0</td><td>7</td><td>37</td><td>175</td><td>82</td><td>301</td></tr>
<tr><td>Not vaccinated</td><td>9</td><td>51</td><td>240</td><td>309</td><td>42</td><td>651</td></tr>
<tr><td>Total</td><td>9</td><td>58</td><td>277</td><td>484</td><td>124</td><td>952</td></tr>
</table>
Association of belief in effectiveness of the influenza vaccine with history of having had the vaccine in autumn 2003 ($P < 0.001$, $\chi^2 = 130.1$,for 4 df).

I believe the flu vaccine prevented me getting the flu on at least one occasion.</td></tr>
</table>

<table>
<tr><td></td><td colspan="5"><table><tr><th></th><th>Strongly disagree</th><th>Disagree</th><th>Neither agree nor disagree</th><th>Agree</th><th>Strongly agree</th><th>Total</th></tr><tr><td>Vaccinated</td><td>1</td><td>13</td><td>69</td><td>140</td><td>74</td><td>297</td></tr><tr><td>Not vaccinated</td><td>18</td><td>58</td><td>194</td><td>74</td><td>13</td><td>357</td></tr><tr><td>Total</td><td>19</td><td>71</td><td>263</td><td>214</td><td>87</td><td>654</td></tr></table>Association of belief of prior personal prevention of an episode of flu by flu vaccine and obtaining the flu vaccine in autumn 2003. (P < 0.001, χ^2 = 162.1, for 4 df).</td></tr>
<tr><td>Qureshi et al. 2004</td><td>Dislike of injections
Think vaccination is not protective
Side effects of vaccination
Ill after previous job
Thought vaccination protective
Risk of contracting flu
Concern about side effects of flu
Already had flu
Never get flu</td><td>1.03
0.63
0.47
0.92
29.68
2.51
1.38
1.17
0.6</td><td>0.61
0.40
0.30
0.49
13.32
1.55
0.89
0.56
0.35</td><td>1.76
1.0
0.72
1.74
66.11
4.06
2.16
2.44
1.03</td><td>0.9
0.047
0.001
0.806
0.0001
0.0001
0.154
0.679
0.064</td></tr>
<tr><td>Rehmani et al. 2010</td><td>Influenza is a potentially serious disease
Vaccine is best preventive measure
Vaccine effective in preventing influenza
As a HCW, there is a risk of getting influenza
Can HCW spread influenza to patients?
Benefits of vaccine outweigh the risks</td><td>1.30
0.83
0.53
9.67
2.51
2.08</td><td>0.81
0.57
5.46
5.79
1.72
1.39</td><td>2.07
1.21
16.64
16.15
3.66
3.11</td><td>0.31
0.18
<.001
<.001
<.001
<.001</td></tr>
</table>

Table 4 *Secondary data (multivariate analyses)*

Author, year	Variable	OR	95% LLCI	95% LLCI	p-value *(where reported)*
Hopman et al. 2011	Aware of personal risk for influenza infection	2.80	1.62	4.84	<0.001
	Aware of risk of infecting patients	2.54	1.59	4.05	<0.001
	Vaccination reduces risk of infecting patients	3.68	1.71	7.93	0.001
	Having knowledge on the contents of the Health Council's advice	2.41	1.58	3.69	<0.001
	HCWs should get vaccinated to ensure continuity of care	2.15	1.37	3.39	0.001
	HCWs should get vaccinated because of their duty not to harm	2.22	1.41	3.50	0.001
	People around me think it is important for me to get vaccination	1.74	1.14	2.65	0.010
Mar Kyaw et al. 2018		**Adjusted OR**			
	Influenza is a potentially serious disease	1.31	1.12	1.54	.001
	Vaccine can cause flu	1.06	0.92	1.22	.43
	Side effects after vaccination are common	0.75	0.63	0.88	<.001
	Side effects after vaccination are not severe	1.13	0.93	1.38	.226
	Vaccine is effective in preventing influenza	0.98	0.80	1.21	.863
	Influenza vaccine is safe	1.46	1.14	1.87	.003
	Need to get vaccine yearly	0.97	0.81	1.17	.776
	Vaccine is not effective in preventing flu	0.78	0.65	0.94	.010
	Vaccine is more dangerous than virus	0.98	0.81	1.18	.848
Nutman et al. 2016	The most effective way to prevent influenza is vaccination	4.07	2.51	6.58	
	Hospital workers are at an increased risk of contracting influenza because of their job	2.82	1.56	5.13	
	Vaccine can cause the flu	0.41	0.25	0.65	
	If I don't get vaccinated I will get sick with the flu	1.96	1.12	3.42	
	If I get sick with the flu I may infect my family	4.54	1.38	14.97	
Piccirillo et al. 2006	Perceived risk of acquiring influenza from vaccine	0.32	0.18	0.59	

Qureshi et al. 2004	Risk of contracting flu Thought vaccine protective	7.70 22.87	1.44 2.31	41.05 226.70	0.017 0.007
Rehmani et al. 2010	Vaccine is effective Feel at risk To protect myself To protect my patients	8.2 10.6 8.4 3.4	3.5 4.2 2.4 1.9	14.6 15.7 12.0 6.2	
Asma et al. 2016	Having a chronic disease that required vaccination increased the likelihood of regular vaccination every year by 5.13 times. Strongly agreeing or agreeing that colleagues thought vaccination is important increased the likelihood of regular vaccination every year by 3.45 times. Strongly agreeing or agreeing that the inactive flu vaccine currently available in Turkey is effective increased the likelihood of regular vaccination every year by 6.31 times. Strongly agreeing or agreeing that protection with natural methods against flu is better than vaccination for overall health status decreased the likelihood of regular vaccination every year by 0.38 times.				

4. Discussion

The main aim of this systematic review was to identify psychological and social predictors of influenza vaccine acceptance in hospital-based HCWs. Fourteen studies met inclusion criteria and were included in the review. Most studies failed to specify a model or theory that underpinned the authors' understanding of psychological or social determinants of vaccine uptake. Perhaps unsurprisingly, there was heterogeneity in the constructs used between studies and results for constructs in terms of predicting vaccine uptake.

An essential finding identified during this review is that there are serious flaws in the approach taken by researchers to understand vaccine uptake behaviour among hospital-based HCWs. While five out of 14 studies referenced either the HBM, its constructs, or TRA, the remaining studies made no reference to well-established social cognition models that have been frequently used to predict and explain health behaviours, like vaccine uptake. A recent systematic review supports our finding that operationalising vaccine behaviour is a challenge due to significant differences in conceptualisation and how it is measured [45]. Even the studies that did reference theory can be considered anachronistic. For instance, the TRA was updated into the TPB almost 40 years ago [29], and the Reasoned Action Approach more recently [46]. It would be useful to see more recently developed models such as the COM-B model [47], applied to the important task of identifying why HCWs do not take advantage of a vaccine that protects themselves, their family, and their patients. Recent studies have explored the application of the COM-B model as a framework for understanding vaccine acceptance and identifying suitable intervention strategies [48, 49]. The WHO Regional Office for Europe has also adapted the COM-B model for vaccination behaviour and applied it to their Tailoring Immunisations Programme aimed at improving vaccination rates for preventable diseases [50].

Most of the 11 constructs identified during coding related to HBM constructs, such as, perceived susceptibility, severity, barriers, benefits, and cues to action. Constructs from other theories identified during coding included response efficacy from PMT [24], attitudes and subjective norms from the TRA [51], and outcome expectancies from Bandura's Social Cognitive Theory [52].

There was a lack of consistency across studies in the measures used to understand influenza vaccine uptake. For example, one study utilised the HBM as a guide for developing the measures [36]. The perceived susceptibility construct included measures related to personal risk to influenza, but it also incorporated a measure on being aware of the risk of infecting patients. Personal risk to influenza and an awareness of the risk of infecting patients could be regarded as two separate constructs. This is supported by the literature as research shows that HCWs are more likely to accept the vaccine for themselves rather than for their patients' benefit [53]. Therefore, it could be argued that it is not appropriate to pair together personal susceptibility and susceptibility of others when attempting to establish predictors of influenza vaccine acceptance in HCWs.

Another illustration of variation in measures is found in two papers who both reported using the HBM as a framework [36, 40]. In one of the studies, the perceived severity statements separate the belief that influenza is dangerous for self and for patients [36], whereas the other uses a broader statement that influenza can be potentially dangerous without specifying a group of people [40]. Although the measures in both papers are related to perceived severity, they may be capturing different beliefs and perceptions. In addition, there is variation in language as the former paper states that influenza is dangerous with certainty [36], whilst the latter describes influenza as potentially dangerous [40]. The former measure asserts a high level of confidence in influenza being a real and imminent danger, whereas the latter acknowledges the possibility of a threat with uncertainty. Research shows that ambiguity influences vaccination choices [54]; the authors propose that uncertainty about the probability of contracting disease and the severity of the course of disease influence vaccination acceptance. Further evidence supports that people's health preferences and decisions are impacted and that they are more pessimistic under ambiguity [55]. In context of the influenza vaccine, individuals may be pessimistic about accepting the vaccine when there is ambiguity about the severity. Differences in wording can therefore lead to variations in responses. It is important to carefully consider the nuances of the measures used to ensure validity.

Nevertheless, our findings show that many of the measures that influenced seasonal influenza vaccination are consistent with those identified in a previous review that investigated self-reported reasons for rejecting or accepting vaccination [53]. HCWs were more likely to be vaccinated if they (1) believed they were personally susceptible to influenza, (2) judged the severity of influenza to be high for self and others (3) that the vaccine would reduce personal risk and risk of spreading to others, (4) were less concerned about side-effects and did not expect side-effects and (5) thought the vaccine was important. There were a few inconsistencies between papers as some results found that people were generally more motivated by protection for self than by protection for patients or family [35, 42], and others where protection for others was a stronger motivator [36, 41]. The differences may be explained by other factors that were not considered such as level of vulnerability of patients, type of hospital and demographic characteristics.

An unexpected outcome of this review was that past experiences of side-effects did not seem to reduce the odds of influenza vaccine uptake [36, 42, 44]. Instead, it was the perception that someone would have side-effects that led to a significantly reduced likelihood of being vaccinated [31, 32, 39, 40, 41, 44]. This appears to be inconsistent with a previous systematic review that found prior experiences of adverse effects after the influenza vaccine reduced intention to accept future influenza vaccine [56]. Although prior experience and anticipation both set up negative expectations around vaccination, perhaps the perceived anticipation of side-effects was associated with a higher tendency to catastrophise normal bodily sensations and the potential impact it would have compared to the actual experience of side-effects. Risk perception has a negative impact on vaccine acceptance as there tends to be misalignment between estimated and actual probabilities of risk, particularly common side-effects associated with vaccines [57].

Overall, the quality of the included studies was judged to be unacceptable for various reasons. First, most studies failed to provide an operational definition of vaccine uptake which is an issue for understanding and measuring vaccine behaviour as highlighted in the research above. Second, little evidence was provided for the validity of the measures used, such as conducting pilot tests and validity analyses like factor analysis. Third, none of the studies provided information on demographic characteristics, like race/ethnicity or socioeconomic status, both of which are linked to vaccine uptake [58]. A research study reports racial differences in vaccine attitudes, risk perception and confidence between African American and White respondents [59]. Examining these factors allows for the development of strategies and interventions that are culturally sensitive. While this present review did encompass studies from various parts of the world, the diversity could account for the variations in predictors and predictor strength.

4.1 Limitations of the studies

One limitation of the studies included is the level of heterogeneity in how vaccine uptake was understood, and the specific measures utilised. There is a lack of consistency across research papers which highlights a significant weakness of this literature as there is no agreement in how to measure and understand vaccine related behaviour. Most studies failed to employ validated measures which is a concern and relied on consensus between the researchers and/or healthcare workers as a form of validation. Future research endeavours should prioritise establishing a cohesive framework of underlying factors playing a role in vaccine acceptance.

Another limitation is that all studies adopted cross-sectional research designs with self-reported measures of uptake. Using cross-sectional designs means that researchers are predicting behaviour that has already happened, rather than behaviour that has yet to occur. Such an approach is liable to confirmation bias. Self-reported vaccination status may not provide an accurate account of HCWs actual vaccination status. The studies did not explicitly mention implementing any measures, such as checking records or requesting proof of vaccination, to verify the accuracy of information provided. Given that the research is conducted in HCWs working in hospital-based settings, there may be greater pressure to be vaccinated, therefore a cross-sectional design is susceptible to reporting bias. Future studies could explore the intention to vaccine and proceed to follow up with whether vaccination occurred, enabling a more accurate relationship between predictors and vaccine behaviour to be observed.

Two additional biases were noted. One was that most of the sampled HCWs were female. Whether this is representative of the HCW population in the hospitals is unknown. Research has shown that female HCWs are more likely to accept influenza vaccination [60], which may be due to gender differences in factors influencing willingness to vaccinate. A second bias was that participant recruitment was voluntary, possibly introducing volunteer bias. This may partially explain the predominantly female sample, as well as some of the strong relationships between vaccinated HCWs and the psychological and social constructs measured. The results should be interpreted with caution.

4.2 Limitations of the review

A limitation of the review processes is that dual title and abstract screening was conducted for only 10% of the studies, with the remainder completed by single screening. Single screening can result in potentially missed eligible studies [61]. In addition, quality assessment was dually conducted for only 20% of studies, introducing a risk of error. However, the authors agreed on the decisions made when dual screening and assessment was used, therefore increasing the plausibility of the decisions and confidence in the results.

The authors were also unable to include all the possible eligible studies as three were inaccessible. Despite attempts to obtain the papers from authors, no responses were received. The authors are confident that while the inclusion of the potentially eligible studies would be beneficial, such additions would not substantially alter the overarching conclusions of the review.

4.3 Conclusions

The aim of this review was to identify the strongest predictors of influenza vaccine uptake in hospital-based HCWs. Unfortunately, due to heterogeneity between studies in the measurement of psychological and social predictors of vaccine uptake, this has not been possible. This heterogeneity in measurement is a key take home message from our review; there is a need for much greater consensus in how we measure and understand influenza vaccine behaviour, with research teams across the globe collaborating on this issue. Low rates of vaccination were found in all studies so increasing vaccination requires a global approach. The findings of this review will have implications for tackling hesitancy towards the influenza vaccine. The more that we understand the factors that underlie health-related behaviour such as vaccine uptake and have unanimity on how it is conceptualised and measured, the more likely it is that successful public health interventions can be developed. An additional finding raised from this review that requires further research is understanding how perceived risk versus actual experience of side-effects influences vaccine behaviour. Overall, the review has highlighted crucial aspects to be addressed and guided the trajectory for further research.

Author Contributions

Conceptualisation, AS, RC, NS, RP and TK; methodology, AS, RC, and NS; analysis and investigation, AS and RC; writing – original draft and preparation, review and editing, AS and RC; supervision, RC, NS and RP.

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Conflicts of Interest

The authors declare no conflict of interest.

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Systematic Review Reflective Commentary

Background

Systematic reviews provide a comprehensive synthesis of existing evidence on a particular topic in a way that clear conclusions can be drawn (Denyer & Tranfield, 2009). They play a key role in decision making for healthcare professionals, researchers, and policymakers, as they often form the basis for clinical guidelines and interventions. Early in my doctoral journey, an opportunity arose within my placement at the Royal National Orthopaedic Hospital NHS Trust to conduct a systematic review that also fulfilled the consultancy competence. The Infection Prevention Control (IPC) team were experiencing challenges with flu vaccination uptake among the healthcare workers – a common issue in healthcare settings across England with the national average falling below the target of 75% (Public Health England, 2017). IPC approached the Psychology department, where I am currently placed, conveying concerns about the limited uptake. Numerous campaigns and incentives have been implemented in an effort to increase influenza vaccine uptake with limited success. Consequently, they were interested in exploring the main barriers and facilitators to influenza vaccine uptake in healthcare professionals from a psychological perspective. I had previously completed a systematic review on a smaller scale for the MSc Health Psychology course, therefore I was familiar with the steps of a systematic review, whereas the consultancy client had not conducted any formal reviews. However, completing a systematic review at doctoral level has been a learning experience and developed my research skills. This piece will provide an account of my journey and reflections of my experience of conducting a rigorous systematic review.

Identifying research area and defining the question

As the systematic review was paired with the consultancy competence, this meant that the review question was being guided by the client as opposed to me deciding on it. The primary objective of the systematic review was to identify the leading predictors of influenza vaccine uptake. The decision to focus specifically on psychological and social factors was down to the fact that the client, who was the vaccination lead in the hospital, had already implemented strategies that targeted some of the more practical aspects; they were offering time off during work hours to get the vaccine as time and convenience is a common barrier to flu vaccine uptake (Guillari et al., 2021), attempting to offer incentives which was providing free coffee and cake from the on-site coffee shop and sending reminders out via Teams. Although these are behaviour change strategies as outlined in the behaviour change taxonomy (Michie et al., 2013), they did not seem to work as successfully as they had hoped. The systematic review topic would be helpful for them in that they could get a better understanding of the predictors specific to healthcare professionals and use the information to direct future campaigns and/or focus groups at the hospital. Prior to confirming the review topic, I conducted scoping searches and checked whether the review topic had already been conducted using PROSPERO, an international database for systematic review protocols in health and social care, as well as completing scoping searches. I found no registered protocols on Prospero and went ahead and registered the protocol. Writing the protocol was a relatively straightforward process but it did get me thinking about the specific details, which is exactly what a protocol is designed to do.

There were a few published reviews that had similar titles to what I was hoping to do; the first paper (Li et al., 2021) had a very similar title to what I was hoping to conduct the systematic review on *‘A Systematic Review and Meta-Analysis of Seasonal Influenza Vaccination of Health Workers’.* The paper compared the effect of influenza vaccination with placebo and unvaccinated HCWs but did not look at predictors. The second paper (Prematunge et al., 2012) focused on pandemic influenza vaccine rather than seasonal influenza, another paper (Hall et al., 2021) completed an integrative review of seasonal and pandemic influenza, and included qualitative and quantitative data and identified themes, and finally another systematic review completed 15 years ago (Hollmeyer et al., 2009) on attitudes and predictors of influenza vaccine uptake, but the primary aim of this was to identify the most commonly cited reason for influenza uptake. The paper did explore predictors, but they only included multivariate analyses and the focus was not on psychological and social factors, rather, they explored age, gender, duration of employment, previous receipt of influenza vaccine. Due to the number of eligible papers found (50+), I ended up refining the research question further and asked the client whether they would prefer for me to look at all healthcare professionals, regardless of what setting they were in, or if they would prefer me to look at only hospital-based healthcare workers. The vaccination lead informed me that they would like me to only look at papers in hospital-based settings.

Searching and screening

Starting the search and ensuring that I was doing it correctly felt slightly nerve wracking as it had been a while since I had done any database searches. I was aware that search terms that were not refined enough would result in too many papers and being too specific could result in key papers being missed out. I booked an appointment with the academic librarian and skills tutor at university. In the appointment, I had the opportunity to discuss my research question, ask questions about searching databases and thinking about conducting an effective search by using Boolean operators, phrase searching, specifying key terms, and using truncation. I found it helpful to get a refresher of the Boolean operators, defining keywords for the research question and thinking about what databases to explore. I did not want to run the risk of missing out on key papers, so I chose to conduct the following search with broader terms:

(Healthcare worker OR Healthcare staff OR Healthcare professional) AND (Influenza OR flu) AND (Vaccin* OR immuniz* OR immunis*) AND (Barrier* OR facilitator* OR factor* OR predictor*)

The electronic databases searched were Medline, CINAHL, PsychINFO and Scopus which resulted in a total of 887 papers. Initially I was also going to search PubMed, but my supervisor informed me that PubMed was a part of Medline. I conducted a quick search and found that all of the papers identified by PubMed were already in the Medline results. Embase was also a database I had on the list, but the university did not subscribe to Embase therefore I was unable to continue with the search.

The citation manager I made the decision to use was Zotero and I utilised Rayyan for the screening which I was familiar with from when I completed the MSc. Rayyan was a simple and straightforward screening software that the second reviewer also found very intuitive to use. It automatically identifies duplicates, and you are able to screen through studies and add the labels 'include', 'exclude' or 'maybe'. The software would then organise them into the separate categories which was really helpful. Rayyan also allowed me to share the papers with my second reviewer who screened 10% of papers. The Centre for Reviews and Dissemination (CRD) and Cochrane Collaboration recommend using two or more reviews working independently to screen studies for best practice (Akers et al., 2009; Higgins, 2008). The screening stage is considered to be one of the most significant stages as there is scope for bias and error that can be minimised by implementing a second reviewer (Morton et al., 2011). Research has shown that there is an average increase of 9% in the number of eligible studies identified (Edwards et al., 2002). The screening was completed blind and then I was able to remove the double-blind options on Rayyan once we had both completed the screening independently to see where there were any discrepancies that required discussion. I was fortunate to be able to spend time screening through the papers during work hours as I was completing the project for another department in the hospital.

Writing to authors

Following the title and abstract screening, I encountered a few papers where I was unable to access the full text. I emailed the authors to try retrieve the papers but unfortunately despite letting them know that I was seeking the paper for it to be included in a systematic review, I did not receive any response. I had to make the decision to exclude these papers. It made me reflect on the issue of access to journal papers and how that could be very limiting when conducting research. Open access publishing increases visibility and means that anyone can benefit from reading and using the research.

Data extraction and quality assessment

Data extraction is the process of gathering the relevant data from the studies that are being included in the review. The data extracted from the papers included: Country, demographics, recruitment method, study design, context (i.e., what healthcare setting), sample size, type of healthcare professionals, research question / aim, main outcome (i.e., flu vaccine uptake) and predictors of the outcome.

My initial assumption was that data extraction would be straightforward as I was taking data out of the papers and putting them in to a form. However, there was a lot of data to extract that made one form feel overwhelming and complicated. Rather than attempting to fit all the studies on to one document, I set up the data extraction form so that each study had its own table. Putting together the table of included studies felt like a significant milestone in the systematic review process as I had the information for all the studies clearly presented.

The next step was to complete the quality assessment. Quality assessment of research evidence is crucial and considered to be an essential component of synthesising evidence (Greenhalgh & Brown, 2014). Results from poorly conducted studies can be skewed and have a risk of bias. Therefore, it is important that we appraise the overall strength of evidence available and be aware when to interpret the results with caution, as reviews can have implications for clinical practice guidelines (Mulrow, 1994; Vale et al., 2015). The only quality assessment tool I had used was the Cochrane Risk of Bias-2 (RoB 2) but this is specifically designed for use in randomised trials. My academic supervisor suggested that I look at the Quality of survey studies in psychology (Q-SSP) (Protogerou & Hagger, 2020), a quality assessment tool that has been specifically developed for survey studies in Psychology. After exploration of the different domains, I decided to use this as it felt like the most appropriate. I had several questions from the Q-SSP and reflected on its use as a quality assessment tool. I felt that there were several areas outlined below where there was ambiguity, and I would have benefited from more specific guidance:

- **Duration of the study** – Many survey studies report when they start and end data collection e.g., started in May 2022 and ended in Aug 2022 but not specifically how long the survey was.
- **Informed consent** – Many of the survey studies do not explicitly mention informed consent. However, taking part or responding to the survey was voluntary and so it could be assumed that completing the survey is an indication that informed consent was provided.

I was able to discuss any concerns or questions I had about the quality assessment, whilst also appreciating the fact that I had a second reviewer. The second reviewer quality assessed 20% of the included papers. Aside from two discrepancies which were easily resolved by discussion, we agreed on the ratings which helped me to feel more confident that I had assessed them correctly. To my dismay, nearly all the studies were classed as unacceptable quality with the exception of two. I had expected that the quality of the papers would be relatively good considering how much of an issue influenza vaccine uptake is. Although I realise that it may be down to not reporting information in the published reports, rather than the quality of the studies themselves.

Data synthesis

The data synthesis was the most difficult part of the systematic review journey for me. I expected that it would be slightly tedious as it meant going back to all the data and combing through it, but the way that the predictors had been reported meant that additional work was involved in order for the data to be synthesised meaningfully. One of the things that became quickly apparent at the data extraction phase was that there was no consistency in how influenza vaccine behaviour was understood. The papers did not use any validated measures and aside from a few papers mentioning the health belief model and the theory of reasoned action, there was little reference to theories of behaviour. It was surprising that there was not consensus in how we assess predictors and understand vaccine-related behaviour considering the significance of the issue. I felt frustrated at the way the data had been presented and that there was not consistency. After discussion with my academic supervisor, I felt that I had more guidance and concrete steps to take. We independently coded the measures to identify common constructs across the papers and subsequently discussed them. The systematic review had taken an unexpected turn in that an unexpected issue was identified. However, I recognise how helpful this will be for directing future research and the potential impact of the review is exciting.

Identifying a journal

I considered several different journals for the systematic review that I identified by searching for journals that had recently published papers in similar areas. I decided that I would submit the paper to the journal *'vaccines'* due to the relevance of papers they publish to my own. They regularly publish systematic reviews related to different vaccines and did not have one specifically for healthcare professionals. I made sure to check the guidelines for the journal, they specify a word count of a minimum of 4000 word with no specific style of referencing, as long as it is consistent across the paper. In addition, I intend to disseminate the findings further at my work placement, as well as to the consultancy client. Identifying a journal earlier on was also beneficial when writing the systematic review as I referred to papers similar to the present review as guidance for the structure, level of detail and word count.

Reflection

The systematic review journey felt like a rollercoaster, with times where I felt that I was on top of the tasks and making progress and other points where I felt defeated by the amount of work needed and how long some of the stages took to finish. Overall, the systematic review took an unexpectedly long period of time for me to finish. The initial deadline I had set for myself was to submit it 4 months after starting, which was very ambitious as by that point I was still working through the data extraction and knew that I would not be able to complete a full-write up. Although it was uncomfortable, I admit that I underestimated the challenges that I would face with completing this systematic review. Overall, it took me one year to complete. A part of the delay was also down to my placement becoming extremely busy and not having the additional physical and mental capacity to work on the systematic review.

Working on the systematic review and preparing it for a submission was the first time that I was able to completely resonate with other people's stressful accounts of completing the professional doctorate. Although I had worked on other competencies, none of them felt as stressful as the systematic review. I think the pressure of also completing it as a consultancy piece left me with anxiety about not having it done quick enough. During quieter periods, I did work on the introduction and methods but had no specific schedule. In future, I would have a better write-up plan and more specific milestones for the systematic review. I believe that not having these specific milestones meant that the systematic review took a backseat at some points. Perhaps I would have been more accountable had I set specific targets and created an action plan, which we know from behaviour change research is an effective way to achieve a goal and make progress (Bailey, 2019). One thing that I did find helpful, and I valued was regular supervision and having a dedicated space to check in with progress. It kept me accountable to a degree as I knew that I would have to report back on the work I had completed in the next meeting we had, and I was motivated to make the most out of supervision. Supervision also provided reassurance that I was completing the steps in an accurate and rigorous way, especially as my systematic review knowledge was limited but my supervisor had extensive experience with them. I now appreciate why systematic reviews require several reviewers and people involved.

Nevertheless, I learnt a lot about the systematic review process and there were a few lessons I took away that I hope to apply to future research projects I complete. For example, the quality assessment highlighted the issues with reporting in research and how often information is overlooked. I would be vigilant in my reporting and be transparent (e.g., informed consent and debrief, operationalising variables) so that any research I complete is considered to be of good quality and adds to the evidence base.

Conclusion

Overall, the systematic review provided a valuable learning opportunity and I have developed crucial research skills. As the core of my experience has been working clinically, I appreciated the process of becoming more confident with the steps of a systematic review and undergoing the journey with guidance and support. I hope to be involved in further systematic reviews in future to maintain the skills and expand to systematic reviews in other areas.

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Chapter 3: Consultancy in Health Psychology

Consultancy Case Study

Background

Consultancy refers to the practice of providing expert advice, guidance or assistance to individuals, organisations, or groups. Consultants are typically hired for their specialised knowledge, skills, and experience to help clients solve problems, make decisions, achieve goals, or improve performance in a specific area. Earll and Bath (2004) define consultancy specifically as *a formal relationship where one party seeks help from another, the consultant's role being to facilitate the process whereby both the consultant and client arrive at a mutually acceptable solution*.

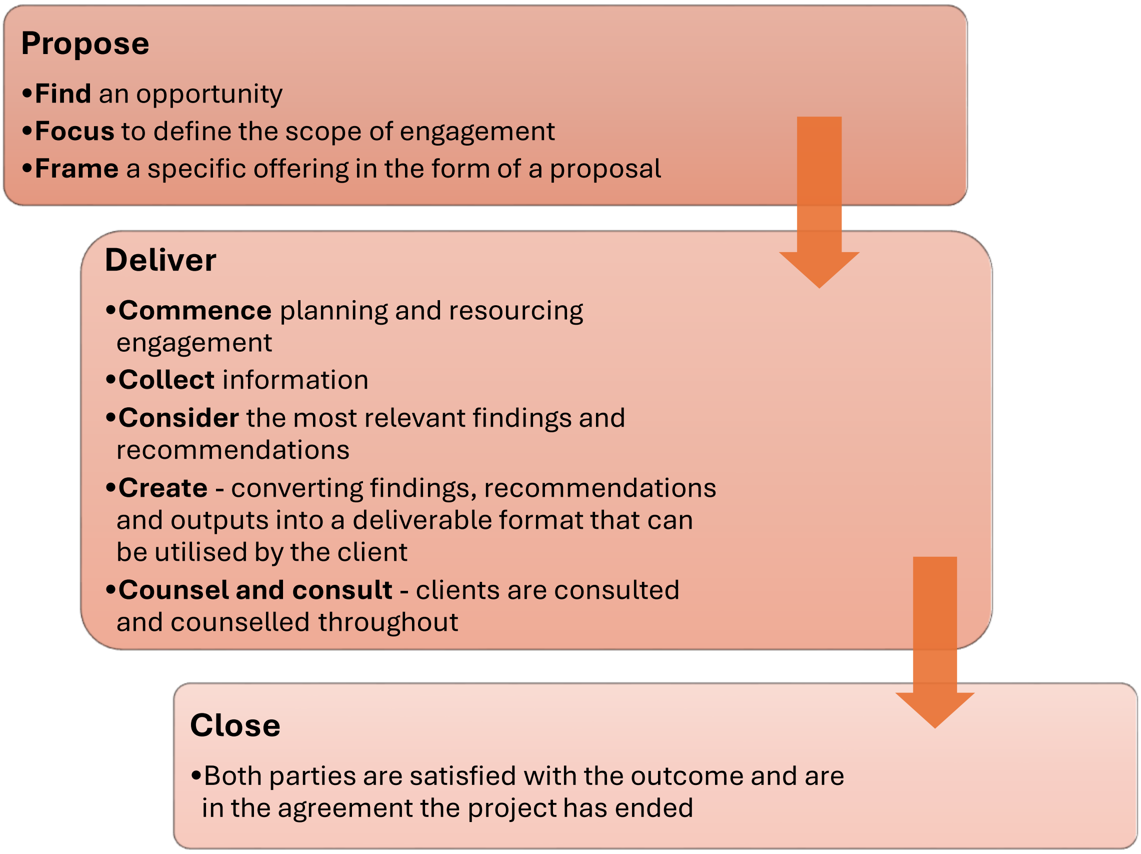
Client and context

This case study outlines a consultancy project with an Infection Prevention Control team at an NHS tertiary hospital. They were encountering difficulties with low influenza vaccine uptake among healthcare workers (HCWs). They had an average vaccination rate of 40%, falling significantly short of commission targets that are set between 70-90% (UK Health Security Agency, 2023). The consultancy project described in this report is a systematic review focused on the psychosocial predictors of influenza vaccine hesitancy in hospital-based HCWs. An outline of how the consultancy opportunity arose is outlined further below in ***Stage 1: Proposal.***

Although the processes of consultancy are broadly similar, there are various approaches and theories that can be referred to in the underpinning processes such as Cope (2010) seven Cs of consulting, Block (2011) five phases of consultancy, and Newton (2010) three core stages. For this specific consultancy, I use the framework set out by Newton (2010) to map out the project as I felt that it closely reflected the aims and process of my consultancy project. The stages of consultancy proposed by Newton (2010) provide a structured framework for understanding and navigating the process (see Figure 1). The stages offered me, the consultant, a systematic approach to follow when working with the client. This was particularly important as it was my first consultancy project. Having a structured method helped to ensure that the consultancy was organised, focused and effectively implemented to meet the client's needs. In line with Newton's (2010) stages, I discuss the proposal, delivery and closing of the project.

Figure 1

Newton's (2010) Consultancy Model



Stage 1: Proposal

According to Newton (2010), the first stage of proposing a consultancy can be broken down into three steps of finding, focusing, and framing the project. This lays down the foundations of the consulting relationship and establishes a clear framework of collaboration between the consultant and client.

Finding the opportunity

While the conventional way of a consultancy project arising is via a client approaching a consultant, the consultant can also initiate contact with a client (Newton, 2010). The consulting opportunity arose as a result of my placement line manager introducing me to the client. The client highlighted a specific issue they were experiencing; low rates of staff influenza vaccine uptake. This led to further discussion about how the psychology department could be involved and a connection being made between myself and the vaccination lead. When staff work under the same organisation, even if in separate teams, they are classed as an internal consultant (Block, 2011). The client and I did not have an existing relationship and although are under the same NHS trust, the Psychology and Infection Prevention Control team operate separately.

Focusing the opportunity

The first part of focusing the consultancy was to establish the needs and requirements of the project. An initial face-to-face meeting was arranged with the client to discuss the problem, my role and the client's role in the project. During the meeting, the client and I discussed the role of a Consultant Health Psychologist, potential collaboration options, and identified who would be involved in the working relationship. The client is any individual, group or organisation that enters into a negotiated contract with the consultant (Turner et al., 1996). Reflecting on Schein (1999) classification of client types, I was able to establish the clients involved and where they fit according to the categories (Table 1).

Table 1

Type of Client

Contact Client	Approaches the consultant initially with a request, question or issue	Vaccination Lead
Primary Client	*Own* the problem or issue being worked on; they are typically the ones whose budget covers the consultation project	Vaccination Lead
Intermediate Client	Involved in the project, meetings, activities	Vaccination Lead
Ultimate Client	Need to be considered in any intervention as they are great importance to the organisation	Infection Prevention Control

The client requested that I join the Infection Prevention Control team meeting where they reviewed the current vaccination rates and explored strategies to implement during the 2022 flu season. I observed from the discussions that the strategies were practical, repetitive, and lacked consideration of psychological and social factors. I prepared for my next contact with the Vaccination Lead by reflecting on the team meeting and what I could offer based on my skills. I presented the different projects I could work on that would address their objective of identifying reasons for low vaccination uptake in healthcare professionals (e.g. review, focus groups). The client did not have a pre-defined work project, they relied on me to take a directive approach and provide recommendations based on the problem presented. The "expert" model was in action and the client entrusted me as the skilled professional. Schein (2016) acknowledges that there are times when the expert model of consultancy is appropriate. However, I wanted to keep the client involved and tried to take a 'humble consulting' approach initially by figuring things out together and coming to a mutual agreement (Brady et al., 2022).

Framing the opportunity

The process of framing the consultancy occurred in collaboration with the client. I made several suggestions, two of which the client was most interested in: a systematic review and focus groups. I took an active role and explained how each of the projects would fit in with their aim of identifying the reasons for vaccine hesitancy in healthcare staff from a psychological perspective. Showing the client that you understand their interests and are aligned in your project goals is key for building trust (Mauerer et al., 2018).

This was the first time that I was practising negotiation skills in the context of consultancy. The open-mindedness of the client made it easier to approach than if it had been a client who was difficult or who had unrealistic expectations. There were moments however where I felt the relaxed approach of the client offered too much choice, leaving me feeling uneasy as to whether I was making the right decision. The client was looking to me as the "expert" consultant and I felt that I needed to fulfil that role to keep them satisfied and avoid breaking trust. I was mindful that at this stage we were still establishing the working relationship.

From the different options offered, the client decided a systematic review would best suit their needs for several reasons 1) they did not have the skills and resources to conduct a systematic review, 2) they had minimal information on what the strongest psychological and social predictors of influenza vaccine uptake in HCWs were, and 3) the review would produce results that they could utilise to guide focus groups in future.

Next, I set out to draw up a contract with the relevant actions. A contract is an explicit agreement between the consultant and client and sets out the terms for how they will work together (Block, 2011). Prior to writing the contract, I discussed key areas with the client and negotiated terms of the consultancy agreement such as the exact deliverable, the timescale, resources needed, and communication channels. The document outlined the terms, conditions, and expectations, providing a reference point for both the client and I throughout the process. We agreed that the deliverable would be a systematic review written in the form of a publishable journal article and that I as the consultant would provide monthly updates to the client on the progress. The regular updates were implemented to promote transparency which is crucial for reducing client uncertainty and promoting trust building (Mauerer et al., 2018). The client was open to flexible communication methods which could be via e-mail, telephone or face-to-face. We agreed an initial timescale of project completion by June/July 2023 but did not include this in the contract to allow for a degree of flexibility.

Writing a contract was a new experience and it initially felt like an overwhelming task with many aspects to consider. Reading different contracts and learning about necessary clauses was helpful for this and future projects. I tailored the relevant clauses to fit my project, ensuring that the contract was specific and avoided ambiguity in case any problems should arise. The client approved the contract with no amendments. This project carried minimal risk as there were no financial terms and the client was flexible. For future consultancy projects where the client has greater demands or the stakes are higher, it would be important that the contract is reviewed by a legal expert to ensure that the terms protect me as the consultant and the client.

Stage 2: Delivery

The delivery stage involves five stages that are discussed below.

Commencing delivery

Once the agreed project had been finalised, I began the systematic review. I had an overall project deadline, but I did not map out specific milestones. In hindsight, this was a significant error as the project was delayed. There was a degree of uncertainty regarding the number of papers that would be found, which could significantly impact the timeframe for completing the review. I should have established an estimate for completing different parts of the review (e.g., literature search, screening, quality assessment) to monitor progress. Although the contract did not specify an end date and no amendments were required, I informed the client of the delay as soon as it was apparent. Openness and honesty are important values to uphold in the client-consultant relationship and to maintain successful working connections (Czerniawska, 2006; Sharp et al., 2015). In future I would allocate time when commencing delivery of a project to map out specific milestones by using a tool such as a Gantt chart to keep myself accountable. I will also be aware of setting overly ambitious deadlines and overestimate the time needed to complete the project to account for delays and avoid damaging the client's trust (Fullerton & West, 1996).

Collecting data

The data collection stage involved searching databases for relevant studies. The process was straightforward however there were a greater number of papers than expected and the question needed further refinement. I shared this with the client and actively involved them since it would slightly change the scope of the review question. I suggested several solutions and they decided we would only include hospital-based papers. Taking a collaborative approach was important for tailoring the project to the client's preferences and to ensure they were satisfied. Although this was an easier decision to make that did not result in any conflict, I reflected on whether it would be useful to add a clause in to contracts for future consultancy work to manage changes and whom the responsibility lies with.

Considering data

This step of the consultancy involved synthesising the data by screening abstracts, full-text screening, data extraction, quality assessment and synthesising the data into constructs from health psychology models. As part of the contractual agreement, I was also required to identify a second reviewer (line manager). I was aware that the second reviewer would have other roles and responsibilities and at this point I reflected on my initial timeline for creating the deliverable and how it was not feasible.

One of the steps identified by Block (2011) is to involve the client in the data collection, funnelling the data, data summary and data analysis. Although involving the client may be useful to speed up the project timeline, the client must have the capacity and capability (e.g. knowledge and skills) to be able to support with the project. In this case, the client did not have capacity in the form of time, nor did they have the skills needed to contribute to the systematic review.

Creating deliverables

At this stage, the focus was on producing the final systematic review report formatted as a publishable journal article using the data collected. I had to consider the requirements of potential journals and format the paper accordingly. The final report included an introduction, methods, results, and discussion section. I prioritised writing a clear and concise abstract, avoiding jargon to ensure that the client could identify the key messages of the review from the abstract. As a result of the delay in creating the deliverable, I was concerned about whether the client would be dissatisfied with the project overall. I therefore ensured that the deliverable was of high quality and would fully meet their expectations.

Counselling and consulting

In the counselling and consulting stage of Newton's (2010) consultancy model, the focus is on facilitating a constructive dialogue between the consultant and client to ensure a thorough understanding of the project outcomes and recommendations. There were limited meetings and/or contact throughout the consultancy term. After sending the final deliverable to the client, I extended an offer for a feedback meeting to discuss the project results and the implications considering I had in-depth understanding of the results. Despite the offer being outside the contractual obligations, presenting the findings to the client and guiding them to determine next steps is a part of the consultancy process (Raab et al., 2012). However, the client opted not to proceed with this optional meeting. I felt that this decision emphasised the client's preference for minimal engagement beyond the deliverables, indicating their satisfaction or perhaps a lack of interest in further consultation.

Stage 3: Closing

I reviewed the contractual agreements and responsibilities to ensure a smooth conclusion to the project in the closing stage. The contract was closed without any issues despite a delay in delivering the review to the client. I referred to the contract to confirm that I had adhered to the agreed-upon terms and fulfilled all contractual obligations. Using the contract document as a reference point helped to maintain transparency and accountability throughout the consultancy process, ultimately leading to a successful conclusion and client satisfaction.

Establishing and maintaining a working relationship

The interaction between consultant and client during the initial meetings is a good predictor of how the project will proceed (Block, 2011). I now have a greater appreciation of this as the minimal contact and looking to me as the expert set the grounding for the relationship going forwards. The main domain of contact once we had established the relationship via face-to-face meetings was primarily through email communication. I found that the face-to-face meetings at the start of establishing the relationship provided valuable opportunity for engagement and helped us to connect and develop the project, which may have been more challenging over virtual channels.

To fulfil the contractual agreement, I was proactive and sent monthly updates to the client. Active communication is a determinant of success in the client-consultant relationship (Belkhodja et al.,2012). I prioritised ease as I knew that the client had multiple competing demands that meant face-to-face contact was not always easy. I expect that the client was satisfied with the monthly updates and felt informed as evidenced by the absence of requests from their end for additional updates. Feedback from the client highlighted that I was well-organised throughout the project.

Another element of maintaining the working relationship was involving the client in decision-making processes that were crucial to the scope of the review. For example, the original research question for the systematic review was too broad and I consulted with the client as to whether they would prefer for me to look at all HCWs or narrow it down to hospital-based HCWs only. Including them in the decision also meant that I was ensuring their preferences and needs were considered.

Throughout the consultancy process I was mindful that the success of a consultancy is not purely based on the quality of output produced but also the ability to build a personable and positive working relationship. Whilst the quality of work showcases expertise, the manner in which it is delivered, and the relationships forged along the way can impact the overall satisfaction of the project. A consultant should be transparent and authentic with the client which I felt I demonstrated in our communication (Block, 2011; Earll & Bath, 2004). Building a positive rapport enhances project outcomes and also open doors for future opportunities directly from the client and a network of referrals.

Evaluation

Evaluating the consultancy provides an opportunity to assess the effectiveness of the services delivered and the impact of the consultant's work for the client's objectives. I created a client feedback form to get an insight into their opinion of the work produced and myself as the consultant. Being new to consultancy, I saw feedback as crucial for growth and improvement. Whilst the feedback I received was positive, it was brief, and I could have benefitted from more detailed feedback to inform my practice as a consultant in future consultancy projects I carry out. Nonetheless, I was pleased that there were no issues, and it reflected a successful collaboration. I intend to revise the feedback form I utilise to incorporate additional open-ended questions to allow me to gather more comprehensive feedback. I was unable to evaluate the impact of the project at this stage as the next influenza season had not begun and the absence of the feedback meeting meant that there was no discussion about the client's next steps. A consultant can influence change but has no direct control over it (Block, 2011), therefore the client holds the power to utilise the review effectively.

Summary

Given my lack of prior consultancy experience, I felt I handled the consultancy effectively and gained valuable insights to carry forwards. Firstly, I developed negotiation skills and engaging with various stakeholders such as the wider Infection Prevention Control team and the Vaccination Lead which was initially daunting. By no means do I perceive myself as an 'expert' and further refinement of negotiation and communication skills will be necessary as different types of clients and projects may present with other challenges. Secondly, I have come to appreciate the importance of planning milestones, a practice I intend to implement for all future consultancy projects. The experience was positive overall, and I look forward to exploring further consultancy opportunities.

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Consultancy Contract and Working Agreement

This Consultancy Agreement ("Agreement") is made and effective **03rd January 2023**

BETWEEN: Amina Saadi (the "Consultant"), Staffordshire University

AND: [redacted] (the "Client"), [redacted]

BACKGROUND

A. The Client is of the opinion that the Consultant has the abilities and experience to provide consulting services to the Client

B. The Consultant is agreeable to providing such consulting services to the Client on the terms and conditions set out in this Agreement

C. The consultancy work will be written up as a case study as part of the Professional Doctorate in Health Psychology. A consent form is provided to the Client with further details as a supplement to this Agreement.

1. Duties

1.1 The aim of the consultancy is to identify the barriers and facilitators to flu vaccine uptake among healthcare staff. The Client agrees to engage the Consultant to provide the Client with the following 'Services':

1.1.1 To conduct a systematic review of the quantitative evidence related to the barriers and facilitators of flu vaccine uptake among healthcare staff

1.1.2 To identify a second reviewer for the systematic review

1.1.3 To produce a write up of the systematic review in the format of a journal article

1.2 If the Consultant is unable to provide the Services due to illness or injury, the Consultant will notify the Client as soon as reasonably practical and will serve notice as per clause 9.3

2. Roles and responsibilities

2.1 The Consultant shall provide the Services detailed in this Agreement.

2.2 The Consultant shall provide updates at least once per month on the progress of the Services either by email, telephone or face-to-face.

2.3 The Client shall be the main point of contact.

3. Terms of Agreement

3.1 The term of this Agreement will begin on the date of this Agreement and will remain in full force and effect until the completion of the Services, subject to earlier termination as provided in this Agreement. If either Party wishes to terminate this Agreement prior to the Services being delivered, that Party must provide no less than two weeks' prior written notice to the other Party.

3.2 The term of this Agreement may be extended with the written consent of both Parties.

4. **Fees and expenses**

4.1 The Consultant will not receive any monetary payment or additional benefits from the Client for the provision of the Services.

4.2 The Consultant will not be reimbursed by the Client for any expenses incurred providing the Services.

5. **Liability**

5.1 The Consultant's liability or the amount of any indemnity, damages, or compensation payable by the Consultant on any claim or claims whatsoever concerning or relating, directly or indirectly to anything supplied or provided and including but not limited to claims based on negligence, misrepresentation (other than fraudulent misrepresentation), breach of contract, or warranty, shall not in aggregate exceed the monies actually received by the Consultant under this Agreement.

6. **Confidentiality**

6.1 Confidential information refers to any information or matter which is not in the public domain, and which would reasonably be considered to be proprietary to the Client.

6.2 The Consultant shall not use or disclose any confidential information about the business or affairs of the Client except as authorised by the Client or as required by law. The Client will inform the Consultant when confidential information is being disclosed.

6.3 The terms of confidentiality will apply during the term of this Agreement and will survive indefinitely upon termination of the consultancy.

7. **Ethical standards**

7.1 The Consultant will conduct the Services in line with the Health and Care Professions Council's 'Standards of conduct, performance and ethics' (2016) and the British Psychological Society's 'Code of ethics and conduct' (2009).

8. **Intellectual property**

8.1 The systematic review may be submitted to a peer-reviewed journal upon completion by the Consultant. Authorship will be determined based on level of contribution to the Services. In the event of a dispute, it will be resolved as per clause 11.1 and 11.2.

8.2 The Client may not use the intellectual property for any purpose other than that specified within this Agreement, except with the written consent of the Consultant.

9. **Termination**

9.1 Either Party may at any time terminate the Consultancy Agreement with immediate effect if the other Party is in breach of any provision of the Agreement. Such termination will be documented in writing and will take effect from the date of the breach of the Agreement.

9.2 Any property in the possession of the other Party obtained during the provision of Services shall be returned at any time on request and in any event on or before the termination of the Agreement.

9.3 The contract will terminate with immediate effect if the Consultant is unable to complete the Service due to illness, injury, or force majeure. The Consultant will notify the Client in writing if this is the case.

10. **Variations**
10.1 Any variation to this Agreement will only be binding and effective if evidenced in writing and signed by both Client and Consultant.

11. **Dispute Resolution**
11.1 In the event that a dispute arises out of or in connection with this Agreement, the Parties will attempt to negotiate and resolve the dispute to the best of their abilities through friendly consultation.

11.2 If the dispute is not resolved within 30 days, then any or all outstanding issues may be submitted for consideration to an independent arbitrator, who will pass judgement and mediate a resolution to the dispute.

12. **Entire agreement**
12.1 This consultancy Agreement constitutes the entire Agreement between both Parties relating to the provision of Services. Both Parties acknowledge that they have not entered into this Agreement based on any warranty, representation, agreement, or condition affecting this Agreement except as expressly provided in this Agreement.

13. **Governing Law**
13.1 This Agreement and any dispute or claim arising from the provision of Services shall be governed by and construed in accordance with the law of England and Wales. The English Courts will have exclusive jurisdiction to settle any dispute arising out of or in connection to this Agreement.

14. **Severability**
14.1 In the event that any of the provisions of this Agreement are held to be unenforceable or invalid, all other provisions will continue to be enforceable and valid, with the unenforceable and invalid parts severed from this Agreement.

15. **Signatures**
Below both Parties duly affix their signatures in acknowledgement and agreement of this contract.

______________________________ Date ______________________________
Consultant

______________________________ Date ______________________________
Client

Chapter 4: Health Psychology Interventions

Individual Face-to-Face Case Study

1. Background

Acceptance and commitment therapy (ACT) is a transdiagnostic intervention belonging to the larger family of behavioural and cognitive therapies (Forman & Herbert, 2009). ACT operates on the principle that suffering arises from our attempts to avoid and control emotional pain and discomfort, rather than the experience itself. To illustrate, people may adopt unhelpful behaviours like avoidance to divert from difficult feelings, but inadvertently are steered taway from living life in a way that is meaningful. The aim of ACT is not to eliminate symptoms or emotional discomfort as it is the struggle of trying to control or fight it that can lead to difficulty in the first place (Harris, 2006). In practice, ACT promotes being open and willing to sit with the inner experiences. By being open and present this frees up people's capability to focus on taking action and leading a valued life. ACT is an effective approach for improving pain acceptance which subsequently has positive impacts on functioning and reduces anxiety and depressive symptoms (Hughes et al., 2017).

Underpinning ACT is the concept of psychological flexibility. This is the ability to be in the present moment and act in line with personal values, despite the presence of discomfort (Hayes et al., 1999; 2006). For people with chronic pain the opposite may occur: fearful of the future, lack of clarity around values and identity, avoidance and being weighed down by negative thoughts that impact their behavioural response. This is referred to as "psychological inflexibility". There are six core processes within ACT that increase psychological flexibility and therefore allow people to remain in the present, focusing and engaging in what they are doing and adapting to challenges, as opposed to being pushed around by their thoughts and emotions. (Hayes et al., 2013):

1. **Defusion:** Learning to separate oneself from painful and unpleasant thoughts e.g. self-limiting beliefs and self-criticism
2. **Acceptance:** Making room for unpleasant feelings, sensations and urges, instead of trying to suppress them
3. **Present moment:** Living in the present; focusing on and engaging in what you are doing instead of dwelling on the past or worrying about the future
4. **Self-as-context:** Observing yourself
5. **Values:** Clarifying and connecting with your values
6. **Committed action:** Taking effective action consistently to live a life that is guided by your values

ACT is a frequently utilised intervention on the pain management programme at the Royal National Orthopaedic Hospital which is where I am completing my placement. Individuals referred to the programme have typically explored multiple biomedical avenues to try and "solve" their pain without success. The core aim of the programme is to improve people's quality of life and help them to live with pain. Research shows that pain interference is a stronger predictor of levels of functioning than pain intensity (Kemani et al., 2016). This case study will outline and explore the different stages of the ACT intervention with a patient experiencing difficulties with coming to terms with her health condition.

1.1 Patient background

Fiona was admitted on to the pain management programme for a three-week admission with the aim of helping her to better manage pain. Fiona was diagnosed with Ehlers Danlos Syndrome (EDS) two years ago. EDS is a group of rare conditions that affect the connective tissue. Symptoms can be variable between patients as there are 13 different sub-types. Some of the symptoms include joint hypermobility, excessively stretchy skin, skin that bruises/breaks easily, extreme fatigue, digestive problems, dizziness, and problems with internal organs (De Paepe & Malfair et al., 2012). Her health impacted her life in various ways, and she was unsure how to manage once she had received the diagnosis. Patients on the programme are offered three individual psychology sessions. However, Fiona consented to take part in the one-to-one intervention and to be written up as a case study for the doctorate programme. She was therefore offered sessions following the programme and seen as an outpatient.

2. Assessment

The first step to planning an evidence-based intervention that meets the needs of the patient is to identify and assess what the problem looks like (Fernandez et al., 2019). The assessment involved a process of information gathering, summarising and reflecting to the patient to build a shared understanding. We want to understand not only what is going on for them, but also what is maintaining the problem. Assessment can have multiple objectives, including understanding causal factors, identifying areas that need to be targeted and how they fit in to their problem, and setting goals (Goldstein & Hersen, 2000).

Although assessments are usually completed in one 45-minute session in our service, we decided to complete an extended assessment that took place over two 45-minute sessions. The patient was tearful and required additional time to process their thoughts and acknowledge that she was in hospital.

2.1 Assessment session 1

The first assessment session introduced Fiona to the programme, and we used it as an opportunity to set the expectations of the programme and psychology sessions. We began by collecting information on Fiona's history, which included her own narrative of the problem, how it has evolved and the impact it has had on her life. The main problem that Fiona described was that she was struggling to adjust to and accept her new diagnosis, which was significantly impacting how she managed her condition. She identified a boom-bust activity pattern that intensified as she persisted in attempting to live life the same way she always has. As the session concluded, I asked Fiona to start reflecting on her goals and what she hoped to achieve from the sessions.

During the first assessment session, I prompted Fiona to reflect on what she was hoping to achieve from the sessions and we established two primary goals:

1) To accept my health condition and that I'm no longer the old "me"
2) To be more present in the areas of my life that matter

2.2 Assessment session 2

We developed a more detailed understanding of how Fiona's life has changed since starting to struggle with her health. She described seeing herself as the "old" Fiona and was finding it difficult to accept and transition into a "new" Fiona where illness is part of her life. We explored her coping strategies and she noted that distracting herself and keeping herself constantly busy was a means of coping. It helped her to feel detached from her body and she found it difficult to notice when things deteriorated or her health was suffering. At this point, Fiona started to realise that she was not "living" and the focus was on "existing". She had neglected areas of her life that were important and she was constantly on auto-pilot. The realisation was overwhelming as initially she felt she was coping well by getting through each day. We discussed the direction that Fiona would like to take her life in and what she wanted to be different.

At the end, I provided Fiona with a set of questionnaires to complete. This included the automatic thoughts questionnaire – believability (ATQ-B) (Netemeyer et al., 2002), Valuing questionnaire (VQ) (Smout et al., 2014) and the Acceptance of illness scale (Felton & Revenson, 1984). All of the questionnaires selected are validated and used to measure the effectiveness of Acceptance and Commitment Therapy, in line with the six core processes. The questionnaires aligned with Fiona's goals which were centred around acceptance and values. They were relevant and meaningful measures for her to reflect on and assess how things were changing.

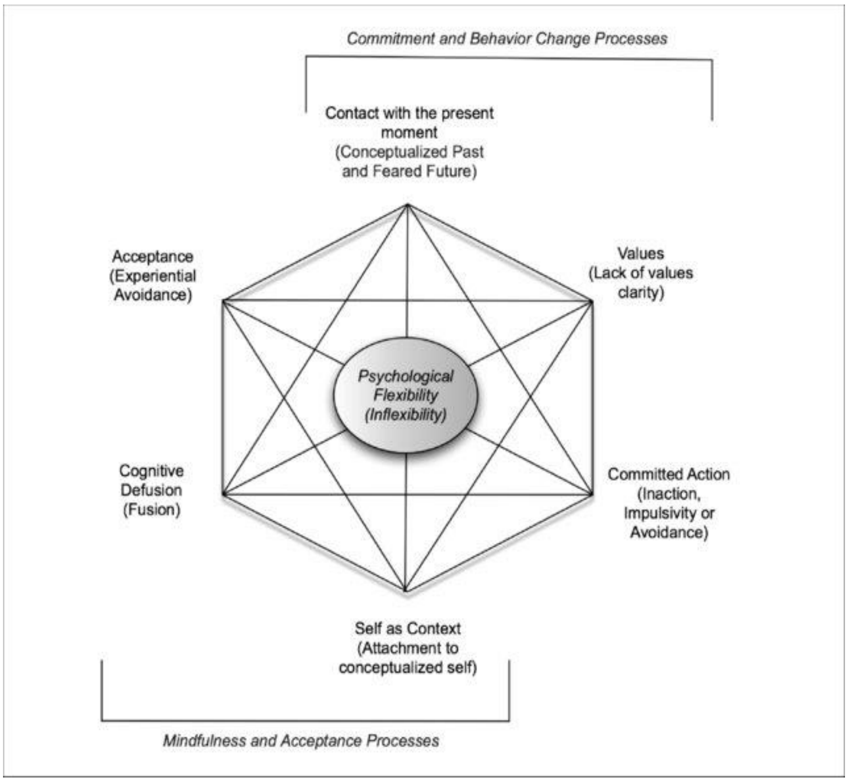
3. Formulation

The ACT case formulation framework assesses how an individual's problems relate to the processes that contribute to psychological flexibility (Hayes, 2004). Psychological flexibility is presented as the 'Hexaflex' model in the ACT framework, and it represents the 6 core processes of ACT previously described (see Figure 1). The Hexaflex model is useful for considering and addressing the needs of individuals living with a chronic illness and ensures that a tailored intervention is delivered (Prevedini et al., 2011).

Structuring the case formulation therefore involved considering the factors that promote and detract from psychological flexibility for the core processes (Bach & Moran, 2008). Below is a description of Fiona's problem and how it showed up for her.

Figure 1

Hexaflex Model (Model Image from Prevedini et al., 2011)



Fiona worked in performing arts and she described her pain coping strategy as "putting a mask on and performing". Determined to prove to herself and those around her that her health did not pose any limitations, she pushed through pain and ignored it. This was functional for Fiona as it allowed her to separate herself from the part of her that was struggling. The mask contributed to the illusion that she had control. However, the mask would come off at home and she felt exhausted and drained, leaving no energy for her to engage meaningfully with her partner and daughter. Her family time and hobbies like swimming provided purpose and shaped part of her identity. However, she was not engaging with these due to increased pain and fatigue from pushing on. Consequently, life felt monotonous and meaningless. Fiona struggled to articulate her emotions as she rarely tuned into them before. Her days were often spent on autopilot, navigating each day with very little mindful presence in the moment.

Fiona's sense of identity was also strongly defined by her role as the bouncy and cheerful person others relied on. Pairing the image she had of herself in mind with the expectations others had of her, she frequently had thoughts of burdening others and refrained from discussing her health issues to avoid being perceived as negative or complaining. This prevented her from engaging in open conversations with others about her health. Fiona's worry about other's opinions of her and her illness led to a recurring pattern of mind-reading. This reinforced the avoidance behaviours and perpetuated thoughts of being a burden, inadequacy, and fear that others would not want to be around her if she is in pain.

Fiona shared that she had high personal expectations that only amplified once she started to experience health issues. There was an expectation that she should maintain the same standard of work and activity even when unwell or it would result in thoughts that she was a failure and again, a burden to others. Pushing herself beyond her limits proved difficult as time went on due to symptom flares, making it challenging to sustain her expected standards. This created a worry cycle about the future as flare-ups increased, leading Fiona to believe she needed to prepare for the future by pushing on in the present, taking her further away from her values.

Fiona's challenges were interpreted through the Hexaflex framework and mapped on to the six core processes of ACT as detailed below:

Table 1

ACT Processes at Assessment

ACT process	**Assessment**	**Plan for therapy**
Acceptance	Fiona had never considered or thought about her health as being limiting in any way, she avoided thinking about it and was struggling to come to terms with the fact that her life and she as a person would change.	ACT metaphors and experiential exercises to demonstrate how avoidance and distracting herself from what was going on would keep her stuck in a struggle. Encourage curiosity and openness to her experience and new 'identity' in a non-judgemental way (Harris, 2006).
Cognitive defusion	Beliefs that she was a burden, that other people would think she is a negative person and that she was no good which led	Experiential exercises of learning to let thoughts pass rather than getting swept away by them. Exploring how being led by thoughts and buying in

	to avoidance and feeling unwanted.	to them as truth got in the way of experiencing things that were valued and important to her (Assaz et al., 2018).
Being present	Thinking about the future in a negative and fearful way, that she will have nothing left and have led a life she is not happy with. Felt like being on auto-pilot most of the time and was not always aware how she was responding as it was automatic.	Learning to notice what is happening and be in the moment to help with changing habitual unhelpful behaviours (Strosahl et al., 2015). Introduce grounding and the skill of savouring from polyvagal theory to help Fiona anchor herself in present moment awareness and connect with positive valued experiences (Dana, 2020; Kiken et al., 2017).
Self as context	Fiona got caught up with her thoughts and emotions and very much believed her thoughts and feelings were facts about what was going on. She felt that she had become her illness and when she had these thoughts, it would either debilitate her for the rest of the day and she would be swept up by them, or she would ignore and distract.	Exploring what it would be like if Fiona was not attached to her conceptualised self (*that she was her illness/diagnosis*) and could observe her experience without getting caught up in the content of it. Practising shifting into an observer role where she would take a step back and look at thoughts and feelings from the observer part of her, the part of her that is free of labels and judgement (Hayes et al., 2004).
Values	Fiona’s strongest values were family and social relationships, but her tendency to distract and suppress using work meant that she did not have the capacity to invest as much as would like towards her personal relationships. Unsure what her new “identity” or values are as illness made it challenging for her to be the same person.	Introducing the idea of values and getting closer to them to live a rich and meaningful life. Clarifying what the values are by doing a values exercise and relating back Fiona’s actions to her values (Hayes et al., 2004).

Committed Action	Fiona was choosing actions that allowed her to separate herself from her illness and were a form of distraction e.g. work.	Encouraging Fiona to continue to take steps towards what is important to her even if discomfort is experienced (Hayes & Pierson, 2005). Exploring together how actions served her and what alternative actions she could choose to get her closer to her values in the long-term, even with symptoms.

Designing and planning the intervention

An essential element in planning the ACT intervention was determining the number of sessions needed. I was mindful of the need for flexibility with the number of sessions offered as the exercises and strategies may not be easy for Fiona to incorporate and meaningful change could require time. ACT can be delivered as a brief or longer-term intervention. Harris (2007) reports that most published ACT protocols vary between four and 14 sessions, depending on the nature of the difficulty. Our therapy department offers between six and eight sessions fortnightly, with the possibility of extending sessions after a review. I proposed a schedule of six sessions, spaced fortnightly, to cover the six ACT processes. A review was planned after session 4. The decision to review at session 4 was because I could report back at session 5. If session 6 was the final appointment, Fiona could approach it with the awareness that it would be her last rather than an abrupt ending. The review included assessing the outcome measures and considering how she felt she was coping. I therefore planned a flexible programme of six fortnightly sessions (see Table 2) in line with the ACT core processes and addressing the aspects identified during assessment.

Table 2

Outline of therapy sessions

Session no.	**ACT process**	**Session content**	**Aspect targeted from assessment**
1	Acceptance	**Introducing ACT** • Demonstrating how fighting against / control is unhelpful • Creative hopelessness – what are the things you have been trying to avoid emotional discomfort?	Fiona was keeping herself busy and distracting herself through work as her way of controlling / avoiding the emotional discomfort. This meant that she had little energy for valued parts of life

		- How has avoidance/distraction got in the way of life and made managing illness more difficult? - Tug-of-war metaphor	and her symptoms were worse due to overactivity.
2	Acceptance	**Being with emotions** - Experiential avoidance vs Willingness - Quicksand metaphor - Physicalising the feelings	Struggling to come to terms with changes in health and the adjustments it required. Working towards dropping the struggle with the emotions and noticing what the difficult feelings coming up are.
3	Acceptance	**Being with emotions** - Approaching feelings with compassion - Healing hand exercise - Understanding the emotion and being curious	Avoiding difficult emotions and distracting from them. Rather than berating them or treating them as something to be fearful of, creating space for them.
4	Values	**Clarifying values** - Clarified values and priorities in the context of current health issues - Exploring how priorities can be flexible and change based on situation (e.g. flare-up priorities may differ from when feeling well) - 80th birthday speech exercise to reflect on values with her health in mind	A sense of her identity changing and that she was not the same person anymore. Reflecting on how her values may have shifted. Her strongest values were family and social relationships, but her tendency to distract and suppress using work meant that she did not have the capacity to invest as much as would like towards her personal relationships.

5	Defusion Self-as-context	**Defusing from thoughts** • Exploring workability – how have these thoughts worked out for you? • Observing and noticing that I am having the thought to separate oneself from the thoughts • Leaves on a stream exercise	Fused to thoughts of being a burden and that others would judge her and think she is lazy. She became hooked by these thoughts and ‘obeyed’ them by pushing through, not ask for help and feel bad about herself and her illness.
6	Being present Self-as-context	**Connecting with the present moment** • Mindfulness and being an observer of your experience • Savouring positive experiences from polyvagal theory	Focused on the future and being fearful of it. Fiona felt that she was not able to fully absorb positive moments when they were happening and was simply ‘going through the motions’.
7	Committed action	• Setting goals in line with values and continuing to take steps towards them • Functional avoidance and reflecting on purpose underpinning the action (i.e. is this action serving me right now or is it unhelpful?)	Fiona was choosing actions that allowed her to separate herself from her illness and were a form of distraction (e.g. work) rather than choosing experiences that were fulfilling (e.g. spending time with family)
8		**Review / flare-up management** • Going forwards and planning for the future • Reflecting on the most helpful skills and ‘high-risk’ situations	

Delivering the intervention

We initially agreed the sessions would be held face to face on a fortnightly basis. However, after three sessions we decided to extend it to every three weeks and increase the session time from 45 minutes to one hour. This was because Fiona had resumed her job and with the three week interval, she had more to reflect on and gave her time to practice the concepts learnt in the sessions. The sessions continued to be face to face.

Fiona was highly engaged in sessions and came to each appointment with thoughtful reflections about her experiences and what she was noticing. There were some sessions that were very emotive, particularly at the start when we were going through the thoughts and feelings part of the ACT intervention. It was the first time she had opened up about her health and the impact it had on her life and identity. She was open and honest about where she struggled which created a safe space in sessions to normalise how hard it was to reach 'acceptance' and emphasising that the journey is not a linear process. Connecting with the message of progress not being linear was an important learning curve for Fiona considering her health condition and how inconsistent it could be. A part of the acceptance journey was recognising that flare-ups do happen and that attempts to ignore her physical and emotional cues would only contribute to the struggle.

There was one session where Fiona rescheduled due to a flare-up. She shared that she felt guilty for cancelling but later utilised the experiential skills from our sessions to separate herself from the difficult thoughts and feelings coming up. She reflected that it was a significant step forwards and she had prioritised herself, as prior to our sessions she would have pushed on and attended. At the end of each session I prompted Fiona to reflect on what her main takeaway for that session was.

I reviewed Fiona's sessions after session 4 in supervision and noted that we spent longer on the acceptance and being with emotions. There were a lot of difficult feelings that she had never spoken about and therefore needed time to explore and create space for them. Following supervision, we decided to offer Fiona a further two appointments and extended from six to eight sessions with the final one being a review and focusing on flare-up management.

Ending

When I reminded Fiona that our sessions were coming to an end, she was overwhelmed and emotional as she valued the support and safe non-judgmental space our sessions provided. To facilitate the ending, I asked Fiona if she felt comfortable to write a letter to me. I came across a tool in Cognitive Analytic Therapy (CAT) called 'goodbye' or 'ending' letters where the patient writes a letter to the therapist summarising the therapy journey, what has been achieved and acknowledging their feelings about concluding (Hamill et al., 2008). The letter provided her with an opportunity to assess her progress and articulate concerns about the future (Ryle & Kerr, 2020). Fiona highlighted her accomplishments and expressed a mixture of sadness as our sessions ended and a sense of empowerment from all the progress she achieved.

4. Evaluation

The evaluation consisted of three main outcome measures: automatic thoughts questionnaire – believability (ATQ-B) (Netemeyer et al., 2002), Valuing questionnaire (VQ) (Smout et al., 2014), and the Acceptance of illness (Felton & Revenson, 1984). I administered these questionnaires at three points: the assessment, half way through therapy and at the end of the intervention. As presented in Table 3, Fiona started off with low acceptance of her illness, strong belief in the unhelpful thoughts she had and her actions were not aligned with her values. By the end of the sessions, her acceptance of illness score had doubled, she was able to defuse from the unhelpful thoughts and lived a life that was in line with her values.

Table 3

Outcome Measures

	Acceptance of illness scale	**ATQ-B**	**VQ**
Assessment	17	53	27
Mid-therapy	31	28	46
Ending	36	20	52
Interpretation of Scores	Scores range from 8 to 40. A higher score indicates greater acceptance of illness.	Scores range from 15 to 75. A lower score indicates reduced believability and defusion with unhelpful thoughts.	Score ranges from 0 to 60. A higher score indicates closer alignment between values and actions.

I presented the results of the outcome measures to Fiona during our final session, and she was astounded by how far she had come. It was an emotional moment for her to be presented with the questionnaire that she completed when she first started attending the sessions. She reflected on the moment where she felt she would never be able to make progress and how she had now met the goals that initially felt so far. Fiona had defined a new identity for herself by prioritising her values and being able to defuse from the difficult thoughts facilitated the acceptance of herself and her illness. Looking at all of the different thoughts in particular she noted that many of these thoughts were thoughts she no longer had and how much more fulfilling life felt for her.

During the time that Fiona was attending the individual sessions, she was booked to attend a three-month review appointment with another member of the team as part of the pain management programme. This is offered to all patients post-programme to review their goals and how things were going. At the 3-month review appointment, Fiona shared feedback with a colleague that was shared with the department:

> *"She reported finding the psychology input in her 1-1 with Amina very valuable and she said 'it has changed my life'"*

Fiona was able to get in touch with her self-compassionate side and applied the skills learnt in our sessions. She became adept at recognising unhelpful thoughts and reflecting on whether they were serving her values or not. She also made the significant decision to prioritise self-care by taking a sick day when needed, realising it was essential for her wellbeing and ability to support her daughter. This marked a significant shift from her previous tendency to push herself. Skills that she acquired on the programme from other health professionals like pacing and physiotherapy exercises also became easily accessible as she recognised how they aligned with her long-term values.

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Individual Face-to-Face Reflective Commentary

As a Trainee Health Psychologist, I had the opportunity to deliver an Acceptance and Commitment Therapy (ACT) intervention focused on adjusting to living with a chronic illness and moving forwards. This reflection will explore the lessons I learnt from delivering an ACT intervention.

Setting up the intervention

Delivering an ACT intervention requires a comprehensive and thoughtful approach as it is not a one size fits all therapy. The assessment stage was crucial for understanding how the intervention would be applied with the patient in practice. I completed a thorough assessment of the patient's pain experience and considered how their difficulties mapped on to the six core processes of ACT. ACT does not necessarily follow a specific session structure of what should be addressed first, and it is down to the practitioner to tailor the intervention based on the needs of the individual. Although it was helpful to consider the ACT framework, I noticed that thinking about all of six core processes simultaneously and addressing them could feel slightly overwhelming when there was no definite session guide. I felt that I had to make the "right decision" in terms of where to start and take the therapeutic journey. However, upon reflection, I realised that as practitioners we do not always know where the therapeutic journey will take us, and the formulation and plan for intervention is a work in progress rather than a final result. I saw an opportunity here; in comparison to my previous roles where interventions were highly structured and there was limited space for veering off the planned course of intervention, I had autonomy and flexibility to offer the patient a treatment that was responsive to their needs and what was coming up for them. This process was facilitated by establishing a shared set of goals with the patient and exploring what "acceptance" meant for them. It provided a clear marker of progress for the patient and I. Rather than fixating on the specific content to cover and the order of it, I shifted my focus towards the patient's objectives and how ACT skills could help them to get closer to their goals. I noticed myself being more excited about delivering the intervention and discussing it with my supervisor prior to starting.

Intervention delivery

We started off the intervention by getting a better understanding of ACT and how the principles fit into the experience of pain and the impact it has on an individual's life. I knew that this stage was key in helping the patient to understand the rationale behind the therapeutic approach and to motivate them to engage. For many individuals living with a chronic illness, the idea of stepping back or not doing everything they can to fix it or control it can seem counterintuitive. When we have a medical problem, social norms set up the expectation that we seek solutions or remedies. Not doing so may be perceived by the self and others as giving up, being powerless and weak. I was mindful that the patient already had a negative view of herself and there was a fear that accepting pain meant resigning herself to a life of more suffering. I very quickly realised that addressing these fears and emphasising that acceptance does not equate to defeat was crucial for us to move forward or it could result in resistance to the intervention. Research has shown that when patients are well-informed and agree with treatment rationale, they are more likely to engage and for therapies such as Cognitive Behavioural Therapy, it has resulted in better outcomes (Addis, 2000). I consider this to be a professional skill that I will consistently apply with other patients as it encourages transparency and can contribute to a positive therapeutic relationship.

To support the rationale of our ACT-based treatment approach, the use of metaphors was integral in demonstrating what acceptance looked like. It aided in simplifying what was going on for the patient and how the intervention would help in a visually comprehensible manner. The ‘tug of war’ metaphor allowed the patient to connect with the concept of ACT, introducing it sensitively rather than making the patient feel confronted or blamed for “resisting”. I found that the visualisation of difficulties also enabled the patient to connect more deeply and brought forth emotions and thoughts that we were then able to explore.

Therapy endings can be both a meaningful and challenging experience. The ending of Fiona’s sessions felt bittersweet, and I noticed a sense of hesitancy when it came to ending the sessions. This was further compounded when I raised the discussion of ending the sessions with Fiona and she became tearful. Transference is a term in psychotherapy where a patient transfers feelings or reactions towards their therapist that are connected to their past experiences (Prasko et al., 2010). Countertransference refers to the therapists own emotional responses to the patient’s transference (Prasko et al., 2010). As therapy approaches it’s ending, the dynamics of transference and countertransference can become particularly prominent as the patient evokes a range of emotions that may mirror their past experiences (Holmes et al, 1997; Schlesinger, 2013). Over the course of the therapy journey, Fiona and I had built a therapeutic relationship that was based on trust and compassion. I understood that saying goodbye to this relationship could trigger feelings of loss for the patient as it marked the end of a vital source of support. However, I was also aware that the patient had experienced dismissal in the healthcare system. I felt a sense of responsibility to change that narrative and avoid contributing to their negative encounters, ultimately resulting in feelings of discomfort and guilt on my part. I took this to supervision and reflected on my role, the progress we had made and the impact of the therapeutic relationship. Following supervision, I asked the patient to write a ‘goodbye’ letter to aid the therapy ending. In future I would also write a letter to the patient summarising the journey and progress to share in the final session, which is often how it is used as a tool in CAT. I was able to appreciate the impact of our work and whilst endings can be challenging, it served as a reminder of the impact that Health Psychologists can have.

Evaluation of the intervention

To evaluate the intervention, I selected three questionnaires that I felt reflected the different ACT core processes and would show whether Fiona was making progress. The acceptance of illness scale captured various components of the ACT processes overall but did not provide specific information. However, the ATQ-B and the valuing questionnaire supplemented the acceptance of illness scale as they gave me more detailed information around the thoughts that were a problem for Fiona and to what extent she was taking action and living a life in accordance with her values. I asked Fiona to complete the questionnaires away from the session as I was aware sessions could be emotionally charged and it may not be the best time for her to complete the questionnaires. This worked well as she could take her time and we reflected on the scores together in the next appointment. It was extremely helpful for Fiona as well as for me to objectively see how things were changing for her. The most important benefit in fact was that it prompted Fiona to acknowledge and give herself credit where things were going well, and it opened discussion around parts that she was still finding difficult and so I could consider these for our session.

While I initially did not intend to gather qualitative feedback, I received feedback when she attended a follow-up appointment and expressed to another staff member how valuable the sessions had been for her journey. Hearing the words that the sessions were “life changing” really emphasised the significance of the work we completed together. It also made me realise that although standardised and validated questionnaires can be a good indicator of progress, they do not capture how the patient views their own progress. Collecting quantitative outcome data is the norm in clinical practice as it can indicate when a patient may be stuck or not making progress. However, it does assume that the change identified on these outcome measures is meaningful for the patient and lacks insight into the patient experience (Green, 2016). In future I would actively seek out the qualitative feedback as on this occasion I was fortunate enough to have received it.

Summary

Delivering an ACT intervention for an individual with a chronic illness was undoubtedly a different experience to the interventions I have been a part of in the past. It can be daunting to work with individuals when they cannot change the physical aspects of their illness, despite it being the main cause of their distress. ACT has changed my perspective on learning to live with illness. Observing an individual reclaim control over their life and participate in activities meaningful to them was incredibly rewarding.

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Group Intervention Case Study

1. Background

Irritable bowel syndrome (IBS) is a functional gastrointestinal disorder estimated to be prevalent in 9.2% of adults globally (Oka et al., 2020). The condition is characterised by symptoms of abdominal pain, distension, discomfort and altered stool patterns (i.e. diarrhoea, constipation or alternating between the two; Saha, 2004). The exact pathophysiology underlying IBS is vague and a specific biomarker has not been found (Lacy & Patel, 2017). Whilst more than one factor may have a part to play, brain-gut signalling has received considerable attention. Brain-gut signalling refers to the bi-directional signalling network between the nervous systems and the gastrointestinal tract, known as the brain-gut axis (Raskov et al., 2016). The brain-gut axis links together emotional and stress processes with intestinal functions and thus stress is believed to play a significant role in the development and maintenance of IBS symptomatology. Stress activates the body's threat response via nervous system pathways, what is often called the "fight or flight" response; this response interferes with brain-gut signalling which is crucial for regulating gut movements and ensuring the digestive system functions in a regular manner. Dysregulation of the gut subsequently results in IBS symptoms, and although not life-threatening, symptoms can be severe and debilitating, placing burden on patient quality of life and increasing healthcare costs (Black & Ford, 2020; Bosman et al., 2023). Considering the relationship between the biological changes that occur and emotional processes, IBS is best understood as a biopsychosocial condition. The biopsychosocial model recognises that there is an interaction between biological, psychological, and social factors that contribute to illness and maintain symptoms long-term (Engel, 1977). Treatment options work best if they consider the interaction between the different components rather than focusing on only one factor.

As part of my role as an Assistant Health Psychologist at a private clinical health psychology practice, an opportunity came up to be involved in the development of a group IBS intervention. Delivering interventions in a group setting can be beneficial; the symptoms of IBS are stigmatised as they are related to toileting behaviours, often eliciting feelings of embarrassment and shame (Hearn et al., 2020). A group setting can support the process of normalising an illness and the associated symptoms, as well as providing a sense of community and support.

2. Assessment

The IBS group was advertised online via the private practice’s website and social media. It was decided that the group would be run online between 6-7:30pm to allow people who were working or studying to attend. Holding the group online also meant that people could access the group from across the nation. In addition, considering that a significant part of IBS and gut-related anxiety is around access to toilets and worry about being in unfamiliar locations, an online intervention was deemed appropriate for this patient group. Online delivery would allow people to engage in the therapy sessions without having to worry about attending in-person and potential symptom flares that can hinder attendance and engagement.

Patient needs assessment

A screening questionnaire was used to assess suitability for the group intervention. To decide on the screening criteria, I researched the screening/diagnosis tool for IBS which was the ROME criteria. IBS often overlaps with other conditions such as IBD and Crohn's disease, so the ROME was crucial in ensuring people met the criteria for a diagnosis. Further, I also completed additional research and settled on several exclusion criteria. These were:

1. Cannot currently be on the FODMAP diet. The FODMAP diet involves eliminating a class of carbohydrates that are more difficult for some people to digest and slowly reintroducing them. It has been suggested that the exclusion phase of the FODMAP diet is not compatible with CBT for IBS.
2. People with an active eating disorder.
3. People still undergoing investigation for their symptoms.
4. Must have tried medication for their IBS for at least 12 months. NICE recommends psychological therapies when people have not responded to pharmacological approaches.

People interested in attending the group intervention indicated their interest by completing an online form. They were contacted to discuss the group in further detail and sent a form to complete with the screening criteria. Once the screening was complete, the following questionnaires were administered to assess the areas that were important for each individual:

1) **IBS Symptom Severity Scale (IBS-SSS, Francis et al., 1997)** – Measures the severity of IBS symptoms, in particular abdominal pain, distension and satisfaction with bowel habits.
2) **Brief Illness perceptions questionnaire (B-IPQ, Broadbent et al., 2006)** – Research shows that illness beliefs are related to IBS symptom severity and can be addressed using a CBT approach (Knowles et al., 2017). The B-IPQ assesses 5 factors related to illness beliefs: illness identity, the cause, timeline, the consequences of it and controllability (personal and treatment).
3) **Cognitive scale for functional bowel disorders (Toner et al., 1998)** – Measures maladaptive cognition related to abdominal symptoms and unhelpful beliefs that maintain symptoms.

4) **Behavioural responses ilnness questionnaire (BRIQ, Spence et al., 2005)** – To identify how people were managing their IBS symptoms (e.g. avoidance and safety behaviours).

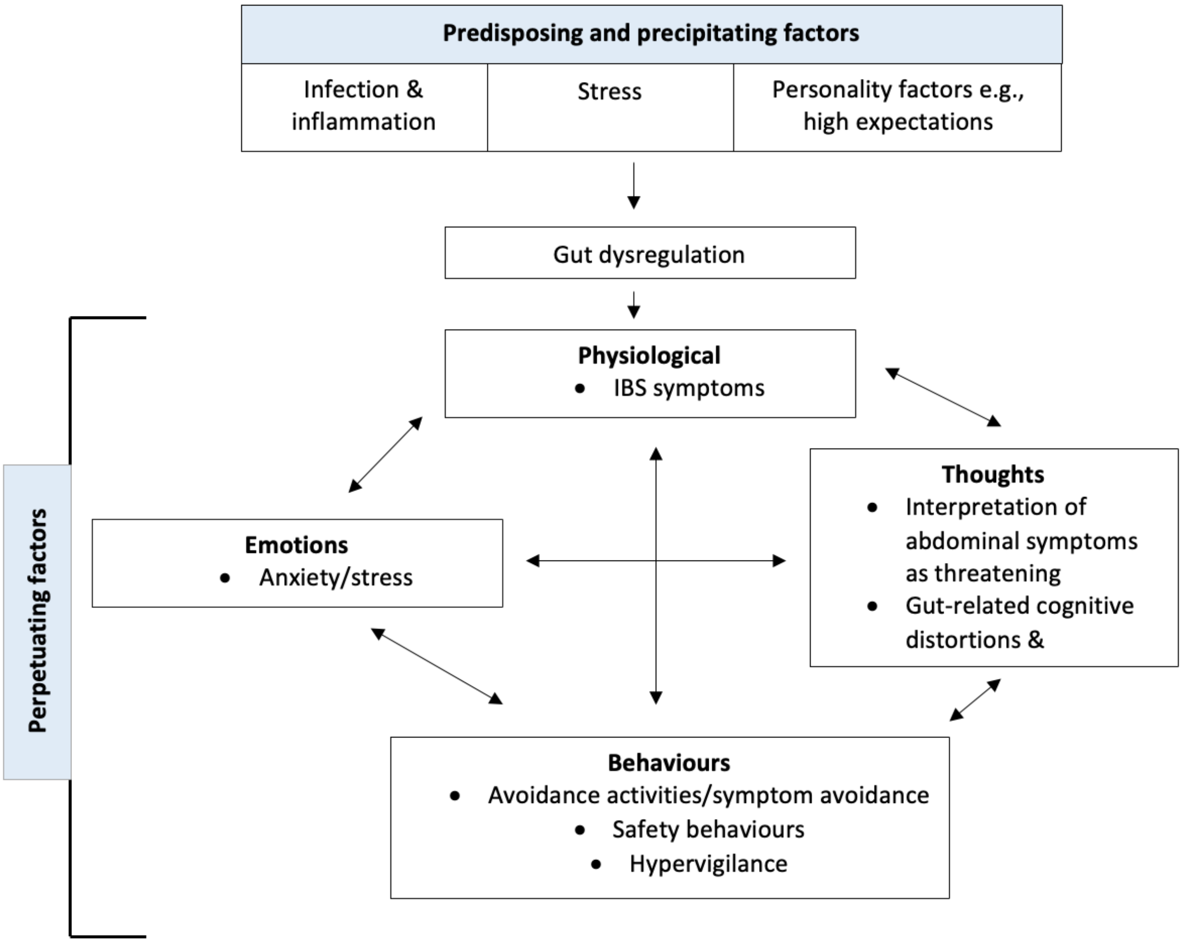
Following the assessment, people were informed if they were deemed suitable for the group intervention. Those who were not suitable were signposted to local support and advised to return to their GP or gastroenterologist if appropriate.

3. Formulation

A cognitive-behavioural model was used to make sense of the development and maintenance of symptoms by distinguishing between Beck's (2005) predisposing, precipitating and perpetuating factors. Whilst the trigger may no longer be present, the symptoms are maintained by cognitive, behavioural, and emotional responses (see Figure 1). The formulation below is based on Deary et al.'s (2007) CBT model to understand medically unexplained symptoms; IBS is an example of medically unexplained symptoms as it is functional, and the physical symptoms cannot be explained. I was also mindful of the biopsychosocial model as it provided further context to the predisposing, precipitating and perpetuating factors. For instance, an individual may be predisposed to gut symptoms through their family history. Exposure to a bacterial infection (precipitating factor) may lead to a physiological change in digestive functioning and start off symptoms such as diarrhea (biological). The symptoms are interpreted as threatening and safety behaviours are adopted to cope which ends up perpetuating symptoms. The perpetuating factors (i.e. the thoughts and behaviours adopted) may be underpinned by societal norms around toileting and the negative impact it has on their social lives (social), which can subsequently lead to stress, low mood, and anxiety (psychological).

Figure 1

IBS Group Formulation



The complete assessment highlighted recurring themes that were consistent with the literature on IBS:

- Lack of understanding around the physiology of the gut
- Overactive or boom-bust cycles dependent on symptom severity
- High standards/perfectionism
- Hypervigilance to gut sensations and anticipation of symptoms
- Worry about access to toilets / accidents / passing gas
- Feeling little to no control over the bowels
- Checking for bathrooms and/or checking stools
- Avoidance of work, activities, social situations, specific foods where possible
- Reliance on anti-diarrhoea medication or laxatives

Based on the information arising from the assessment and formulation, I planned the intervention programme so that it addressed the common themes above (i.e. the lack of knowledge about how the gut works, activity patterns, hypervigilance, avoidance etc.). There were overarching similarities between people in the behaviours people performed (e.g. altered activity patterns), with variation in how the specific behaviour presented. For example, some people pushed through and had high levels of activity because it distracted from their symptoms, whereas some people became underactive and avoided as they could not focus on anything aside from their symptoms. Either one is unhelpful for symptom severity and the intervention addresses activity patterns overall, encouraging consistency and balance rather than over or underactivity. Once the intervention had begun, everyone was supported to map out their personal cognitive-behavioural models (referred to as vicious cycles in the group) so they could begin to make sense of their experience and identify areas for change that were specific to them rather than it being general.

4. Designing, planning & delivering the intervention

4a. Designing and planning the intervention

NICE guidance outlines cognitive-behavioural therapy approach as a suitable psychological intervention for individuals who have not responded to pharmacological treatments for their IBS after 12 months (NICE, 2008). Research shows that CBT can be effective in people with IBS; a large randomised controlled trial of an online and telephone-delivered CBT protocol (known as ACTIB) highlighted significant improvements up to 12-months post intervention (Everitt et al., 2019). Although the ACTIB protocol was designed for 1:1 intervention, the aim was to improve bowel function and reduce bowel-related anxiety and stress, all of which were concerns among our patient group. The IBS group therefore incorporated key features and learning from the ACTIB study as it is evidence-based and used a CBT structure. In addition to the patient needs assessment and protocol informing the content and structure of the group, my supervisor reviewed the content and provided feedback as she has previously published research looking at the key mechanisms of CBT in IBS. Table 1 outlines the structure for the group.

Sessions were held online via zoom on a weekly basis and lasted 90 minutes. At the mid-way point (after session 4), a two week gap was implemented to allow people to practice the techniques they had learnt so far and to continue working on their goals. Each week included a combination of presenting, discussion, breakout rooms and homework exercises. Homework tasks are critical to therapeutic change in CBT (Kazantzis et al., 2004) and so to encourage adherence and promote peer-support, participants also had access to an online forum that was moderated by myself and my supervisor. A ‘question of the week’ would be posted related to the homework and session topic to encourage further reflection and change. The participants would reply to each other, as well as my supervisor and I responding to the comments.

4b. Delivering the intervention

A total of six people signed up to the CBT for IBS group, five identified as female, one as male. IBS is more prevalent in women than men, so this imbalance was not too surprising. During the first session, my clinical supervisor was present to welcome everyone to the group and a second Chartered Health Psychologist and I were also present. We all introduced ourselves and went through the programme roadmap to highlight how the intervention would be progressing and set expectations for what we would cover. An icebreaker was included for group members at the start so that we could begin to build group cohesion and help people to get to know each other. All future sessions were held with the second Health Psychologist and I as two people were required for breakout rooms and in case of technical difficulty.

I started off each session with a recap of what we covered in the previous session and what would be covered in the current session to map out how the sessions link together. This was followed by reviewing the home practice tasks and a discussion of what people noticed, how it related to their symptoms and any difficulties or barriers that came up. Consistent with a CBT approach, homework tasks are a key part of learning and breaking vicious cycles, so we used the COM-B framework to identify and problem-solve barriers to homework tasks (Michie et al., 2011). Overall, the group included a mixture of exercises, including both larger group discussions and smaller breakout rooms to aid learning.

Table 1

Session Breakdown

Week	Topic Covered	Link to CBT/Biopsychosocial model
1	• Introductions and outline of group programme • How the digestive system works • IBS psychoeducation (brain-gut axis, fight-or-flight)	Build a better understanding of the biological underpinnings of IBS to target any misinformed beliefs about how the digestive system works. session set the context so that the behaviours and thoughts covered in future sessions could be related back to the physiology of the gut. This would make it more likely that individuals would engage in making changes to some of the perpetuating factors if they understood the rationale and link to the biological factors.
2	• CBT model • The link between symptoms and emotions, behaviours, thoughts in IBS • Completing personal vicious cycles • Self-monitoring symptoms (1-week diary)	Covered the CBT model in further detail, helping people to make sense of their own vicious cycles and what is keeping their symptoms going specifically for them. This session in particular was important for guiding the next sessions, so people knew what their individual starting points were and had an understanding of their own symptoms and maintenance factors.
3	• Safety behaviours in IBS • Setting goals to address safety behaviours • Behavioural experiments and testing out feared outcomes (particularly with the safety behaviours) • Building confidence and sense of control	Identifying safety behaviours and understanding the purpose they serve. Start to change some of the unhelpful behaviours adding to the symptoms by setting goals to work on. Goals were specific and involved identifying what they predict will happen and keeping a record of the outcome. Many safety behaviours underpinned by fear of lack of control over symptoms. Explored theme of control over symptoms and situations. Covered practical strategies to increase sense of control over bowels, particularly when working on goals (e.g. sphincter exercises).
4	• Role of exercise in IBS • Boom-bust/overactivity/underactivity patterns • Setting goals for consistency in activity patterns • Role of food in IBS (recommending balance rather than exclusion)	Further explored behaviours by looking at different types of activity patterns and exercise (people often believe it makes symptoms worse). Also focused on improving consistency day-to-day (e.g., with mealtimes) to promote regularity of the gut.

5	• Role of thoughts in IBS • Common negative automatic thoughts in IBS • Perfectionism – Pros and cons of perfectionism. How does it influence thoughts and behaviours?	Explored common unhelpful thoughts that come up in IBS that underpin the behaviours and symptoms, including those that relate to high personal expectations.
6	• Challenging common unhelpful thoughts • Reducing expectations / overcoming perfectionism	Further work on unhelpful thoughts by implementing strategies to create more realistic and balanced thoughts. Ties in with the safety behaviours and emotions that come up. For example, more likely to socialise if they challenge thoughts about having an accident outside and anxiety reduces. Challenging perfectionism - lowering the pressure put on oneself to help with setting more reasonable goals and reducing unhelpful thoughts/behaviours (e.g., thoughts of needing to always perform at 100% led to self-critical thoughts and discounting the positives, thereby adding to the tendency to push through even with symptoms)
7	• Relaxation and mindful awareness	Building in relaxation and rest, linked in with perfectionism as often did not take time out due to high standards. Also linked in with physiology of the gut and calming fight-or-flight response. Discussed hypervigilance to symptoms and learning to redirect attention.
8	• Therapy review • Setting future goals • Managing flare-ups	Maintaining changes long-term and supporting people to manage flare-ups independently. Setting up the expectation that flare-ups do occur and that we cannot hold control all of the time.

From the first session, the patients started to build a shared understanding and noticed that they have many factors in common which contributed to a positive group dynamic. They were very supportive of each other and able to suggest what worked for them, as well as challenge each other respectfully. The first session presented interesting questions as it was focused on psychoeducation, exploring how the gut works and challenging misinformed beliefs. One group member found it difficult to accept some of the knowledge that was presented around how the gut works as it went against the reason as to why they adopted many of their coping mechanisms. The situation highlighted the lack of information given to people around their health conditions and the importance of psychoeducation as a starting point in CBT.

An overview of the presentation was sent to all patients after each session so they could review the material and key points. Considering that the intervention was newly developed, we collected feedback for each session to allow us to make changes that were relevant and tailor the group according to preferences where appropriate. For example, people preferred being in smaller breakout rooms of 2-3 as it meant that specific examples could be discussed and reflected on. People shared that they also felt more comfortable to open up about sensitive topics in a smaller group. One group member opened up about how bloating as a result of her IBS impacted her body image which then meant her eating habits were irregular or she avoided social activities. Both factors are known to contribute to the vicious cycle of IBS, so we were able to explore more delicate and personal topics as a result.

Each week I met with my supervisor to discuss the key points of the session that week, agree how much time should be spent on each part, and to identify any areas where difficult questions would come up. This helped me to feel more relaxed about delivering the intervention and ensured that I was well prepared.

The group engaged well and running it was a pleasant experience; observing the positive changes over the course of the intervention and seeing individuals meet their goals whilst becoming more confident in managing their IBS was rewarding.

5. Evaluation

The primary evaluation questionnaire was the IBS Symptom Severity Scale (IBS-SSS) which measures overall symptom severity in IBS. The IBS-SSS is a frequently used questionnaire for monitoring IBS symptom severity (Farrukh, 2022). The same questionnaires used at assessment were also administered post-programme to assess whether the CBT intervention was effective in improving illness perceptions, thoughts, and behaviours, all of which correlate with improvement of symptoms. All evaluation questionnaires were administered before and after the intervention to measure change.

Table 2

Pre- and Post-Intervention Results

Scale			**Percentage Change**
IBS Symptom Severity Scale (IBS-SSS)			
Pre	298.50		**- 45.98 %**
Post	161.25		
Cognitive Scale for Functional Bowel Disorders			
Pre	171.80		**- 37.43 %**
Post	107.50		
Behavioural Responses Questionnaire			
Pre	91.25		**- 27.95 %**
Post	65.75		
Brief Illness Perceptions Questionnaire (B-IPQ)			
Identity	**Pre**	7.8	**- 35.90 %**
	Post	5	
Cause	**Pre**	6.2	**- 41.13 %**
	Post	8.75	
Timeline	**Pre**	8.8	**- 23.30 %**
	Post	6.75	
Consequences	**Pre**	9	**- 50.0 %**
	Post	4.5	
Treatment control	**Pre**	5.6	**+ 20.54 %**
	Post	6.75	
Personal control	**Pre**	2.2	**+ 161.36 %**
	Post	5.75	
Emotional illness perception	**Pre**	16.6	**- 38.25 %**
	Post	10.25	

As shown in Table 2, the intervention led to positive improvements across all outcomes. IBS symptom severity nearly halved in the 8 weeks taking people from the upper end of the moderate range (175-300) to mild symptoms (75-175). A decrease of 50 is associated with clinically meaningful improvement (Francis et al., 1997), and we observed a reduction of 137.25. Illness perceptions also improved, indicating that people had more helpful beliefs around their illness, as well as a reduction in unhelpful gut-related thoughts and behaviours. The pre-post scores for each individual were calculated and sent to them to show them the progress they had made over the course of the programme.

Finally, I developed a short feedback form to collect qualitative feedback from group members. People were asked to report what was helpful and/or unhelpful about the group session and if there were any areas of improvement. At the end of the group, the feedback was collated and presented back to my supervisor so that we could work on improvements for the next group cohort.

From the feedback collected, participants had a positive experience overall and rated the sessions as being useful for helping them to manage their IBS. One of the most valuable parts of the group for participants was that it offered a safe space to share their experiences:

> *"I was hesitant to share my negative thoughts but the breakout rooms were helpful as in a smaller group I felt more comfortable to do this"*
>
> *"As always the session had a good structure – a balance of learning new information and sharing our own experiences/thoughts"*
>
> *"I loved the interactive element to the session, which I would usually be anxious about in lectures etc. but in this case, it is really nice to chat to everyone and hear other's experiences"*
>
> *"I found the discussion about feelings when needing a toilet in an emergency very helpful"*

Some areas of improvement were noted by participants which were actioned where possible. We were able to include a short exercise at the start of each session.

> *"I think in general the sessions would benefit from some kind of centering activity when we join the call. Even a short focusing exercise would be helpful, and good modelling".*
>
> *"Start using some patient stories to illustrate certain points"*

Overall, the intervention provided a beneficial way for people to start managing their IBS symptoms. Given the initial success of the group, we plan to offer and facilitate the group for another cohort. However, we have not collected long-term data as of yet, and so whether the change in symptom severity is maintained is unclear. Further evidence is needed to confirm the long-term impact, which could be something to explore with future cohorts of the group.

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Group Intervention Reflective Commentary

The IBS group was my first experience of working on a group intervention from the stages of Assessment through to Evaluation. In the past I had made amendments to and delivered evidence-based interventions, but my input in the assessment and design stage was limited. Working on this intervention offered the opportunity to learn about all stages of intervention development using the latest evidence base to improve patient outcomes.

Setting up the intervention

The evidence base for IBS has significantly grown and there are validated measures to confirm that someone has IBS and not another gastrointestinal condition, as well as measures to assess the severity of symptoms. This made it easier for me to identify the questionnaires that we could use at assessment instead of having to adapt questionnaires that may have been used in other gastrointestinal disorders and could lack validity.

Initially one of the challenges I faced was developing a working formulation for a group rather than for an individual as I was now considering multiple people. I was focusing on the specific thoughts and behaviours that came up for each individual rather than the patterns and themes. For instance, within the theme of avoidance there were people who avoided eating out in restaurants specifically and others who avoided being out in nature due to lack of access to toilets. Despite the behaviours being different, they were both a pattern of avoidance. I realised that instead of focusing on the specific behaviour when formulating, it was more important to notice the function of the behaviours and their role in perpetuating symptoms. The CBT model was the best way for me to conceptualise their difficulties as people presented with varying behaviours and thoughts that were unhelpful for their symptoms. Whilst running the group later on, I found that the different behaviours were largely underpinned by the same factors (i.e. embarrassment and shame came up whether people were avoiding eating out or avoiding work meetings, the behaviour was serving the same purpose, to avoid anxiety and potential symptom flares).

Despite my initial challenge with formulation, the assessment and formulation were crucial for guiding the content and ensuring it was suitable for the whole group. The CBT model is structured and focuses on the current problem and setting goals to make change rather than talking freely (Fenn et al., 2013). I kept the CBT model in mind throughout to ensure the content was related to various parts of the model and contributed to breaking down the factors that add to the vicious cycle of symptoms.

After each session had been planned, I received feedback. It was helpful to have guidance and be given ongoing feedback. It gave me reassurance that the intervention was on the right track, particularly as it was my first experience of health psychology intervention development.

Intervention delivery

The delivery of the intervention went well and there were several moments of key learning and reflection that arose. Overall, group attendance was good and there were no concerns or drop-outs which I believe in part was down to the group being online and so people were still in their safe spaces. However, I am mindful that the group was run through a private practice and so people had made an independent decision to sign-up rather than being referred by their GP or healthcare provider. Motivation to engage and openness to change therefore may have been higher.

I found that the group posed challenging questions from the first session, especially around beliefs of how the digestive system works. For example, I had one situation where a group member was certain that the food they consumed was all digested within one hour of them eating, which informed their behaviour of avoiding food and irregular meal times. At this point I noticed myself becoming uncomfortable as I did not have the immediate answer and felt that I should have the answer because I was the "expert" facilitating the group. I handled this by acknowledging their concern, asking them whether they would open to considering the new information presented and reassuring them I would come back to them with further information. On reflection after the session, I was able to see that the questions were a reflection of the participants being engaged and reflecting on the information presented as it was challenging their beliefs.

The breakout rooms and discussion aspect of the group was reported as one of the most valuable aspects. It allowed individuals to explore their difficulties and personalise the CBT content to them, reflecting on how what they were learning would apply to their own circumstances. There was also a sense of validation that came from hearing other people's experiences and sharing how they got on each week with the in-between session tasks. However, this meant that the timing for the session was very tight and there were instances where we had to pause discussion to ensure that we were able to get through all of the content for the session. In retrospect, it would have been more beneficial to have a greater number of sessions with less content within each session. The issue of time also meant that we were not always able to review people's goals from previous sessions. We would always check-in with their homework practice tasks from the session prior, but it would have been helpful to have the opportunity to see how they were getting on with goals set in week 2 and 3 for instance. I expect this would have improved their accountability as well as have given them the opportunity to bring up any challenges.

I also had to be aware of how we presented goal setting. CBT is based on making changes and setting goals, but I was mindful of the theme of perfectionism coming up and how people may set goals that were high because they wanted to achieve change, but inadvertently setting themselves up for failure. Though it was not a part of the content of the group, the theme of compassion and being kind to yourself when symptoms were not under control or when goals were not met came up often. I discussed this with my supervisor, and we wanted to make sure that the goals did not become another unhelpful trigger, adding to the feeling of not being in control of symptoms which came up during the initial assessments. Throughout I encouraged flexibility with goals rather than rigidity. I emphasised taking a graded approach and the concept of "running a marathon, not a sprint". When it came to making changes, we did not want people to make many changes and to feel overwhelmed, but to take it one step at a time, giving enough time for the body to adapt and allowing the digestive system to regulate. This messaging was beneficial, and people felt it gave them permission to not have to work on everything simultaenously. As we plan to run the group again for another cohort, I intend to research the role of criticism and self-compassion in IBS. I hope to incorporate this within the next group to facilitate change in a non-pressured way, and to discourage the inner critic that comes up and adds to unhelpful thoughts like *"I've failed at my goals"* or *"I'll never be able to control my symptoms"*.

Evaluation of the intervention

I had not anticipated how well the group would do and the results we received. I was pleased to have collected both quantitative and qualitative data which gave me an insight into the change in symptom severity, as well as what went well and what could have been different so that I can make adaptations to the next group cohort we run. The group members appreciated that they were able to leave feedback for each individual session and we could respond to the feedback on a weekly basis. They felt that the group was tailored to them and again, perhaps influenced their motivation to engage with the intervention and their willingness to make change.

Unfortunately, I did not collect any follow-up data once the group had ended. The literature shows that improvement in symptoms is maintained for at least one year following CBT treatment (Laird et al., 2016). It would have been beneficial to assess whether the group had the same outcomes or if the improvements tailed off. In hindsight, I would have also included an additional outcome measure, specifically quality of life. IBS symptom severity negatively influences physical quality of life due to the gastrointestinal-related anxiety that comes up (Trindade et al., 2022). Although there was a reduction of almost 50% in symptom severity, it would be interesting to assess the extent that the symptom improvement impacted on their quality of life.

Summary

Overall, I feel more knowledgeable and confident with the different stages of intervention development. I thoroughly enjoyed facilitating the group and watching the alliance build between group members and look forward to being involved in and facilitating further health psychology interventions in future.

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Chapter 5: Teaching and Training in Health Psychology

Teaching and Training Case Study

Background

Teaching and training skills are necessary for practising Health Psychologists (Michie et al., 2004). Their role frequently involves the dissemination of knowledge and training in various groups and contexts. This case study outlines my experience of developing, delivering, and evaluating five teaching and training sessions to large and small groups of healthcare professionals (HCPs) and students from different educational backgrounds (see Table 1). Two face-to-face opportunities arose within my placement to deliver a training session to a multidisciplinary team (MDT) of physiotherapists, occupational therapists, and therapy technicians, and one session to a small group of physiotherapy and occupational therapy students. Additionally, I actively pursued three online teaching opportunities by contacting the course lead of the long-term conditions training for Psychological Wellbeing Practitioners (PWPs) as this was aligned with my prior experience and knowledge. Across the five sessions, the theme was **"Applying Psychology to Long-Term Health Conditions"**.

Table 1

Overview of teaching sessions

Session	Title	Learners	Group size	Duration of session	Format
S1	Goal attainment scaling for LTCs	Healthcare professionals (Physiotherapists, Occupational Therapists, Therapy Technicians)	10	1 hour	F2F Workshop
S2	Understanding Irritable Bowel Syndrome, Assessment and Treatment	Psychological Wellbeing Practitioners	45	2.5 hours	Online Lecture
S3	Transdiagnostic symptoms and models in LTCs	Psychological Wellbeing Practitioners	45	2.5 hours	Online Lecture
S4	Working with LTC groups	Psychological Wellbeing Practitioners	45	2.5 hours	Online Lecture
S5	Role of psychology in pain management & LTCs	Students (Physiotherapists and Occupational Therapists)	3	1 hour	F2F Workshop

Assessment of learning needs

Identifying learning needs is the first step to planning teaching as learning is more effective when a thorough needs assessment has been conducted (Grant, 2002). They guide the development of content and methods, ensuring they are relevant, engaging and aligned with the learner's knowledge and expertise levels. A prevalent model used to assess learning needs is Race's (2007) ripple model of learning. Central to the model is the importance of understanding the learner's knowledge and experience and what they want and need to learn. By taking these factors into account, I could tailor the content to the needs of the group and build on their existing competency.

For the PWP teaching, I met with the course lead to get an understanding of the learning requirements as sessions were part of a formal training course. Our conversation centred around the primary learning needs and feedback from previous cohorts on the teaching they felt would be beneficial. My prior experience of working as a PWP gave me useful insights into their current level of knowledge and skills. I considered the 'want' and 'need' of Race's model by reflecting on my own experience, what I would have benefitted from and what learning they could apply. I offered several suggestions for sessions based on the learning objectives and previous attendee feedback.

In contrast, I was less familiar with the learning needs of the MDT. I met with the therapies lead and MDT to explore what their learning needs were, and they wanted to focus on improving goal setting for long-term health conditions. I was able to gather information on areas of difficulty and improvement, but I also assessed learning needs for the MDT by observing their current goal setting skills. Evidence suggests that self-assessment of competence is limited compared to external assessment (David et al., 2006). I reviewed recent records of patient goals set by the MDT to identify difficulties that may not have been explicitly reported. This led to further identification of areas of improvement that the group were not necessarily aware of.

Like the MDT, I was less informed about the students' learning needs, their experience and what their course teaching had covered. As well as discussing with the student placement co-ordinator, I communicated with the students directly to familiarise myself with their current knowledge level and identify any gaps. This was manageable due to the smaller group size whereas it would have been less feasible for the large group.

Identifying training programme structure and content

Pedagogy is the theory and practice of teaching and is embedded in the teaching and learning relationship (Loughran, 2013). The pedagogical approach has implications for teaching structure and content and therefore is an important consideration when developing sessions. I took a constructivist approach which prioritises student-centred learning, encouraging active involvement in the learning process rather than passive receipt of information (Bada &

Olusegun, 2015; Biggs, 2003). Research shows that constructivism improves learning and teaching quality (Zajda, 2021; 2018).

Learning outcomes

Learning outcomes are a framework for both the teacher and learners by creating a shared understanding of the session purpose and objective. Adam (2004) likens learning outcomes to a navigation GPS tool, offering a roadmap towards the intended learning destination. I found this analogy helpful, reminding myself to assess how the teaching aligns with the roadmap. I aimed to articulate the outcomes in clear, concise language, ensuring they provide clarity as to what learners can expect to accomplish by the end of the session.

For the PWPs, I was aware that they were attending other sessions as part of the course. I explored the material and learning outcomes of the other sessions to avoid duplication and to maintain continuity in the development of knowledge and skills. The aim was to scaffold their learning by building on existing knowledge and teaching new content in manageable steps, before encouraging them to independently demonstrate and apply the learning. Aligning the learning outcomes with those of earlier sessions and scaffolding helped to facilitate a seamless learning journey, avoiding unnecessary repetition, and maintaining a logical flow of content. The HCP and student sessions were standalone which I found provided more flexibility as the learning outcomes did not need to fit into a wider course.

I used established frameworks such as Bloom’s (1956) Taxonomy to develop the learning outcomes based on cognitive processes that occur in learning. I structured the outcomes to progress from basic remembering and understanding before moving towards higher-order skills like applying, analysing, and evaluating. The first learning outcomes used action verbs like “describe” and “explain” a concept, then moved on to “applying” the learning to a case-study. The language of the learning outcomes described what the learners should be able to do by the end of sessions (Kennedy, 2006; Newton 2020). Depending on the session objectives and learning needs, the action verbs varied. For example, the student teaching focused more on understanding and explaining concepts as they were new to the role of psychology and in year one of their course, whereas teaching the HCPs and PWPs had greater emphasis on analysing and applying the knowledge as it would be implemented in clinical practice.

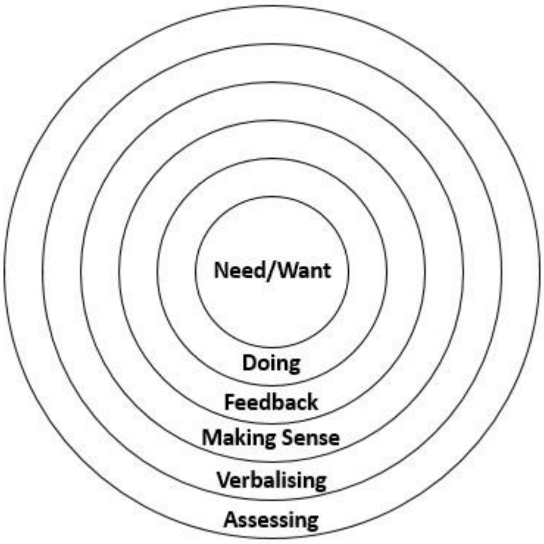
Structure

I drew on Race’s (2007) model of learning when developing the session structure to create an engaging and effective learning experience. The framework compares learning to “ripples on a pond” where learning experiences include a series of interconnected stages of *doing*, *digesting* and *feedback* (see Figure 1). Across the sessions, I incorporated learning strategies that allowed time for “doing” and were reflective of a constructivist pedagogy. There were a variety of tasks including interactive discussion in wider and small groups, problem-solving, real-world case studies, and experiential practice to cater to different learning styles and preferences (Hess et al., 2011). Including various teaching techniques can achieve better results than preferential treatment for one as cognitive style is thought to be flexible and learners can improve their competency with underdeveloped learning styles (Bull & Ma, 2001; Pithers et al., 2002; Rayneri et al., 2006). There was greater task variety in S2-4 in accordance with the length of the group. Both S1 and S5 were workshop style so there was more emphasis on discussion rather than lecture-style teaching.

The structure of the longer sessions (S2-S4) was particularly important because there was a substantial amount of information to cover. The structure of lectures can help people to retain the most important information (Thomas & Thomas, 2021). I segmented the content into sections with a theme and followed a coherent structure ensuring that the sections had a natural flow and that they were clearly linked. In addition, I provided a break in the middle of the longer sessions (S2-4) but did not do so in the shorter sessions (S1, S5). Breaks are beneficial for students to be able to focus and maintain attention (Lynch, 2022). However, I felt that a break in the shorter sessions was not necessary and that a break after 20-30 minutes would disrupt the flow.

Figure 1

Race’s (2007) Model of Learning



Content

I outlined the content of the sessions based on the learning outcomes, considered their wants/needs from Race's model, and reflected on what key knowledge and messages I would need to include to meet the outcomes. The specific content and materials included in the sessions was predominantly drawn from published papers, reputable websites and materials (e.g. NICE guidance, treatment protocols), and clinical experience. For example, S2 referred to the ROME criteria for Irritable Bowel Syndrome (Lacy & Patel, 2017), and the Regul8 self-management treatment manual (Everitt et al., 2015). Although it is important to base learning materials on credible sources, I was mindful of creating an optimal learning environment and incorporated a variety of teaching methods in the content such as videos to explain concepts (Vaughn & Baker, 2001).

There were health psychology models that featured across sessions like the Transtheoretical Model of Change (Prochaska & Velicer, 1997), but I contextualised the content and how it was explained based on the target audience. For example, with the PWPs I used examples related to mood disorders (e.g. low mood, anxiety, and phobias), whereas for the students and MDT, I used examples related to physical activity. In addition, I considered the learners' current knowledge levels to shape the content. In S1, the MDT were familiar with the model and therefore the content briefly introduced it and focused on how the model can be applied. However, in S2-5 the model was new knowledge, so I explained it in-depth and provided more examples. To ensure the sessions were pitched at the right level and met expectations, I shared the session content with the relevant module lead or manager. No changes were requested, suggesting that the content met their needs which was reassuring.

Selecting training materials and methods

The constructivist approach adopted and the *doing* stage in Race's (2007) model emphasise active engagement and practical application of knowledge. Consequently, it was imperative that the teaching materials and methods were aligned and promoted deep learning. Deep learning involves developing conceptual understanding, engaging with knowledge beyond memorisation and applying it (Biggs & Moore, 1993). The intended outcome of learning across S1-S5 was to ultimately improve healthcare practice currently for HCPs and in future for students who would practice as qualified physiotherapists and occupational therapists. Research suggests that deep learning can play a role in preparing students for the workplace (Lake & Boyd, 2015).

Materials

The quality of teaching materials can have a substantial impact on learner experience and engagement. The main source of materials was PowerPoint slides which can facilitate learning and help information retention (Apperson et al., 2008). There are five basic principles of teaching materials by Farrow (2003) that I considered in the design of the PowerPoints (see Table 2).

Table 2

Application of Farrow's (2003) Principles

Principle	**Meaning**	**Actions**
Links	Obvious and clear links to the talk	Content was referred back to the overarching topic and learning outcomes to ensure it was clearly linked.
Intelligibility	Easy to understand materials	Did not use jargon language and any new concepts were clearly explained. Images and videos were used to supplement explanation of models and new concepts (e.g. biopsychosocial model, concept of acceptance). Used metaphors, analogies and images to help students recall concepts and information (Sarder, 2014).
General Style	Consistency in the teaching materials	Used the same presentation style for the series of sessions (S2-4) to help them focus on the content rather than being preoccupied with different / new styles. In S1 and S5, I stuck to a consistent style and font throughout, except where information needed to be emphasised.
Highlighting	Emphasising important information	Clearly pointed out verbally where points were important and suggested people can take note of it. Adjusted tone of voice to reflect the emphasis and used bold text in slides.
Targeting	Information is targeted towards what students need to learn.	Considered previous knowledge and skills of students by exploring previous session materials and meeting with course lead to judge expected level of knowledge.

The session materials were made available to learners prior to sessions to provide them with options for how they access and process information. Pre-lecture resources are an effective tool for reducing cognitive intrinsic load (i.e., the processing of new information) by introducing concepts prior to teaching (Seery, 2010). The learners attend sessions more familiar with the knowledge and their working memory can focus on integrating the new knowledge into long-term memory instead (Seery & Donnelly, 2012).

Despite the material being available to learners, I received a specific request in S2 for a summary handout. I did not create additional resources as I assumed that access to the PowerPoint materials would be sufficient. Handouts are used as a primary tool for helping students to understand content (Wongkietkachorn et al., 2014), but it is important to ensure they are linked to the content and not excessive (Farrow, 2003). I was able to fulfil the request and develop one that I shared after the session. I took the feedback on board and implemented it for subsequent sessions. In future I would create and share summarised resources to avoid demanding too much from learners prior to the teaching and to support the digestion of information.

Methods

Diversity of teaching methods is essential for effective learning to occur (Dorgu, 2015). Based on my own experiences of being a student and learner, I wanted to ensure that I did not take a didactic approach and was an engaging teacher. Didactic lecturing is an ineffective pedagogical tool for promoting understanding (Knight & Wood, 2005). I included different activities such as reflection, problem-solving tasks, and experiential practice. The tasks were not the same across the sessions and depended on whether it was appropriate for the content. For example, I included an experiential relaxation practice in S3-4 to model how they can incorporate the practices into their work (Beard & Wilson, 2006; Kolb, 2014) and it is effective for online teaching (Yardley et al., 2012). However, it was not a suitable method for other sessions.

The methods I used for discussion were adapted based on the size of the group as I wanted to ensure it was inclusive and everyone had the opportunity to participate. In the larger online groups (S2-4), I utilised breakout rooms to split them into smaller groups to allow more in-depth and meaningful discussion of specific case studies before coming back to the wider group to share. However, in the smaller groups (S1, S5), the discussion occurred mainly with the entire group. The student teaching consisted of only three students and thus there was more space for them to contribute and I expect that it was less intimidating.

I encouraged individuals to share questions and thoughts across all sessions, pausing after key concepts and models to check-in with their understanding. Online teaching presents challenges with disengagement and distraction (Maqableh et al., 2021; Szpunar et al., 2013) and implementing regular check-ins and interaction with the teacher was a key factor in ensuring that the online learning is effective (Rhim & Han, 2020). I was however mindful that individuals may not feel comfortable to share live in a large group. A strategy I used to promote online interaction in S2-4 was to utilise a live audience interaction tool, Slido, where questions and thoughts could be submitted in real time. I found this to be a very useful platform as I received several questions in addition to individuals using their camera and microphone to share. Based on the success of this, I would continue to offer multiple ways for students to interact in future online teaching.

Assessment of learning outcomes

In line with Race's (2007) model, feedback can help students to learn and influences the digestion of information. Assessing learning is useful for students to identify whether they have met the learning outcomes and gaps in knowledge, but it is also valuable for enhancing the teacher's practice (Black & William, 2009). Teachers can reflect on how their practice can be improved and respond to feedback (Carrington & MacArthur, 2012).

I planned how I would assess the learning outcomes consistent with a constructivist pedagogical approach (see Table 3). In the constructivist pedagogy, assessment can be a more formative process (Roos & Hamilton, 2005). Formative assessment can be used as a tool for teachers to adjust teaching and direct future learning instead of simply grading students (Kumar, 2013; Thomas, 2023). Forms of assessment include self-assessment, peer-assessment, and dialogue and questioning (Thomas, 2023). This assessment approach was effective for the learners across the five sessions as the main objective of the teaching was to be able to apply the learning and improve their practice.

In the larger group teaching sessions (S2-S4), I utilised recursive feedback. This is where the teacher observes students utilise what they have been taught (Okita & Schwartz, 2013). I decided to implement this after S1 where there was feedback requesting more opportunity to implement the learning into practice and receive feedback within the session. I therefore included clinical case studies to assess understanding and discuss how they would actively implement the learning. I tried to facilitate assessment of learning by drawing on a combination of teacher and peer-assessment. Instead of immediately providing answers to questions, I opened the question to the wider group to provide the opportunity for another individual to demonstrate their learning and practice the skill. Students learn by explaining their ideas to others and participating in activities where they learn from their peers (Boud, 2014). Additionally, I implemented breakout rooms in S2-4 where the learners practiced the skills to encourage peer-assessment and promote dialogue. Teacher organised peer learning is more effective than peer learning opportunities created by the students themselves (Keerthirathne, 2020). This was successful as the students were engaged and eager to work together.

As described earlier, I used Slido as a supplementary tool. In the larger groups, I asked people to share their main takeaway and any questions anonymously to take away the pressure of sharing. However, I did not use Slido in S5 as there were only three learners. I felt that the group was too small to use this method and I was aware that they were familiar with each other so therefore I encouraged open discussion of their main takeaways and any questions.

Table 3

Learning Outcomes and Assessment Method

Session	**Learning outcomes**	**Assessment of learning outcome**
S1	Recognise common mistakes and challenges in goal setting for LTCs	Clinical case studies, wider group discussion
	Identify health psychology models that apply to goal setting	Did not assess
	Categorise different types of goals in LTCs	Wider group discussion
	Demonstrate examples of effective goal setting	Wider group discussion
S2	To understand the symptoms and underlying mechanisms of IBS	Slido, wider group discussion
	To be able to assess the biopsychosocial features of IBS at step 2	Wider group discussion
	To be able to apply step 2 treatment strategies to IBS	Peer-assessment, wider group discussion, presentation
S3	Describe what transdiagnostic symptoms are	Wider group discussion
	Explain LTC models and how they link to step 2 interventions	Peer-assessment in breakout rooms, wider group discussion
	To be able to apply LTC models to step 2 cases	Clinical case studies, presentation
S4	Outline the role of groups in LTCs	Wider group discussion
	Summarise the evidence for groups in LTCs	Breakout rooms
	To be able to identify common challenges in LTC groups	Slido, wider group discussion

	To be able to give examples of how challenges in LTC groups can be addressed Demonstrate how step 2 groups can be adapted for LTCs	Breakout room, wider group discussion Wider group discussion
S5	Identify the psychological factors that influence the experience of pain in individuals with LTCs To understand key health psychology models and their application in pain management and LTCs To consider how health psychology models can be used in a physical therapies setting Identify effective psychological interventions for pain management and LTCs To summarise the process of risk assessment	Wider group discussion Peer-assessment, wider group discussion Wider group discussion Wider group discussion Wider group discussion

Summary

This case study has demonstrated a positive experience of planning and delivering five teaching sessions. Although I had prior experience of delivering training sessions, I had not considered or used models of learning such as Race's (2007) model and Bloom's (1956) taxonomy. These are models that I will continue to refer to in future to structure effective teaching sessions. I focused on my pedagogical approach to create a seamless learning journey and felt that I developed skills of being an engaging and adaptive teacher by considering student needs from the initial point of planning sessions to adapting live in sessions. Teaching and training is a key part of working in clinical health settings in the NHS. The skills I have developed therefore hold significant value for my continued professional development and contributing to the improvement of healthcare practice through teaching and sharing knowledge.

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Teaching and Training Reflective Commentary

Background

A key component of teaching and training is the evaluation of the delivery, materials, and overall teaching quality (Leckey & Neill, 2011). Feedback allows the teacher to better understand students' needs and to develop and adapt future teaching (Black & William, 2009). By assessing teaching practice and continually reflecting on feedback, teachers can improve their practice and create an inclusive environment that is conducive to learning (Carrington & MacArthur, 2010). As part of a series of five teaching and training sessions I delivered to large and small groups of healthcare professionals and students both online and face-to-face, I collected feedback and evaluated the sessions. This report will outline the successes, challenges, and areas of improvement.

Sources of feedback

There were four methods of feedback and evaluation across the teaching sessions: learner feedback, peer observation, incidental feedback, and self-reflection. Each type of evaluation offers a different perspective of the sessions. For example, student feedback provides meaningful information about the competency of the teacher, but the responses are subjective and only one part of the evaluation, therefore it is important to obtain feedback from other sources (Berk, 2009; Chisholm et al., 2011; Gaertner, 2014). The student feedback provided a valuable insight into their learning experiences, preferences, and how confident they felt applying the material. The evaluation helped me as the teacher to tailor my approach and materials to better meet their needs. Assessment from peers or colleagues offers an alternative viewpoint. They can provide constructive feedback on teaching methods and offer ideas and strategies from their own teaching experiences (Keane, 2015). I was observed for one session by the Psychological Wellbeing Practitioner (PWP) course lead who was well placed to provide constructive feedback as they had experience of teaching and in-depth knowledge of the learner group's needs. The observer feedback I received covered numerous areas of the teaching such as the opening introduction, the structure, learning materials and how I presented as a teacher and my delivery style. A second observation was planned but due to unforeseen circumstances, the observer cancelled at short notice. Another perspective of the teaching from a second observer would have been beneficial for my development.

Self-reflection was another form of feedback I utilised. Being introspective and self-evaluating teaching strengths and areas of growth improves teaching effectiveness and facilitates collaborative teaching practices (Kirpalani et al., 2017; Pedrosa-de-Jesus et al., 2017). Self-reflection was the most challenging aspect of the evaluation process. I tended to be critical of my teaching with the negative aspects overshadowing the positive. This highlighted the importance of multi-source feedback as I did not always have an accurate representation of how the sessions went. Finally, I received incidental feedback which is the spontaneous and unintentional feedback received. I received verbal feedback at the end of sessions and email correspondence with positive feedback post-teaching session.

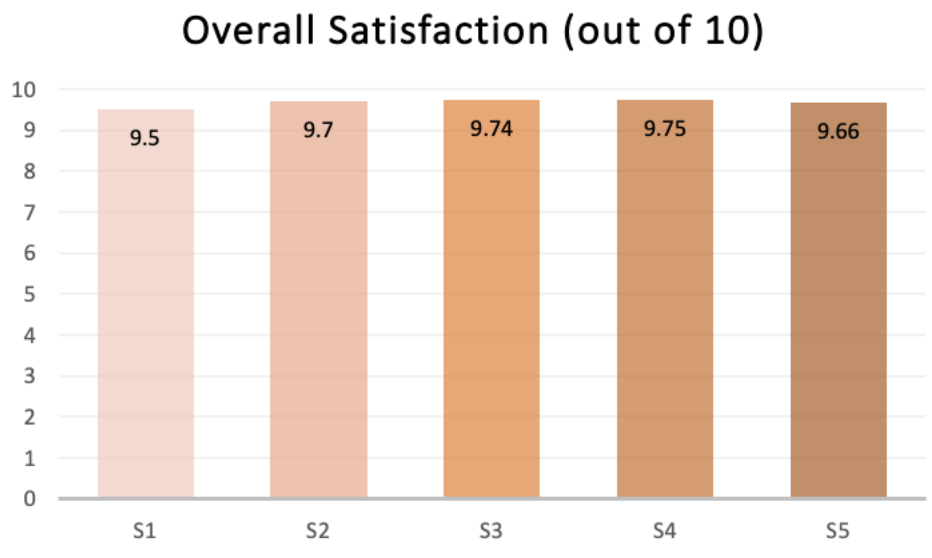
To evaluate the teaching sessions, I developed evaluation forms that incorporated quantitative and qualitative elements. This helped to gather a range of feedback and pinpoint specific areas I wanted feedback on, whilst also allowing learners the opportunity to express their opinions through open-ended questions. The questions were structured to capture views on the teaching materials (e.g., usefulness and relevance of teaching to their role), my performance as the teacher (e.g., engaging, pace of the session, answering questions effectively), and the success of the teaching (e.g., confidence applying the material). The initial draft evaluation form was lengthy as I wanted to gather detailed feedback. However, I later streamlined the questions as longer forms have a lower response rate (Kato & Miura, 2021) and healthcare professionals have limited time available in their working day. The evaluation forms across the five sessions were broadly similar with minor adjustments made to tailor it to the specific learner group.

Successes and strengths

The teaching sessions received positive ratings and feedback overall and the learners were satisfied with the learning they took away. There were several areas of strengths that are discussed further below.

Figure 1

Overall Session Ratings



Delivery style

A common theme from the learners across S1-5 that was also echoed by the observer was the positive feedback regarding my delivery, particularly how I conveyed information and engaged the learners. The observer specifically noted how my non-verbal cues such as tone of voice, hand gestures and facial expressions contributed to an engaging session overall. Non-verbal communication skills play a role in the teacher-learner relationship (Bunglowala & Bunglowala, 2015), and it influences student achievement and their experience (Bambaeero & Shokrpour, 2017). Interestingly, I was worried about whether I was engaging when delivering the sessions and if people were interested, showing the mismatch between feedback of others and self-evaluation. Engagement was a particular concern in the online sessions as it is more difficult to gauge people's level of interest. Maintaining engagement is an important aspect of teaching and can determine learning success and outcomes (Lei et al., 2018). I chose to exclusively rely on my lesson plan rather than use additional detailed notes so that my verbal and non-verbal communication was more natural compared to if I had followed a script. Receiving positive feedback on my delivery style and that I presented as knowledgeable boosted my confidence for the future sessions.

Table 1

Feedback on Delivery

Learner Feedback	• Very engaging and well presented thank you Amina you are a very good lecturer • Great session and very knowledgeable. So interesting and engaging • You have been amazing and such a pleasure to listen to. I have learnt so much and I have looked forward to each of your sessions!
Observer Feedback	• Voice, gestures, facial expressions were all appropriate and added to an open and engaging session.

Case Studies and clinical examples

A key element of all sessions was demonstrating how the information I was delivering would be applied. To show how it can be used in practice, I referred to anecdotes, clinical examples and case studies which was a success. Case studies serve as a valuable tool and improve clinical reasoning and problem-solving skills when the case study requires the learner to directly apply the knowledge to a clinical scenario (Baldwin, 2007; Tomey, 2003). Having personal experience of working as a PWP meant that I was able to tailor the case studies and examples in S2-4 very specifically. There was opportunity to put the learning into practice, receive feedback and I offered practical suggestions from my own experiences that could be applied to their role. However, I found this more challenging to do when teaching the students in S5 as I had less knowledge of physiotherapy, and it was more difficult to come up with clinical case examples. To combat this, I encouraged them within the session to reflect on their own examples they had come across from being on placement and we were able to discuss as a group how the material would apply. This worked well and I received incidental feedback verbally from one of the learners sharing that the practical advice was very helpful. In future I would spend more time understanding the specific details of the physiotherapy role in the learning needs assessment and exploring challenges they face so that they can be addressed in the session.

Although I referred to clinical examples and included case studies, there was one feedback comment suggesting that they would have liked to see more examples of real-life patients and treatments to demonstrate how the techniques are used. In hindsight it may have been useful to incorporate role-plays and offer an alternative form of learning. Role-plays are a useful tool for improving clinical practice (Rowe et al., 2012).

Table 2

Feedback on Clinical Case Studies and Examples

Structure and language

Learner Feedback	• It was very practical with lots of excellent tips for how to work with people with IBS • Facilitators clinical experience and sharing. • Practical tools to use in clinical work and helpful explanations which I'd feel confident to use with patients • I really liked the way it was very practical and very focussed on step 2 work, which made it very relevant. I also appreciated her honesty re the limitations of this work in a step 2 setting. Thank you :-) • More examples of how you would implement these points to ask patients about them
Observer Feedback	• Amina was clear and engaging and linked her slides to her own and student clinical experience. This made it feel interesting and relevant.

When creating the teaching materials, I considered the influence of both the structure and language on the learning experience and how it could affect understanding. I organised the slides into sections to facilitate a smooth session flow, a technique also known as ‘chunking’. Chunking lecture content into smaller separate units is useful for sustaining attention and preferred by students (Humphries et al., 2021; Harris et al., 2021). This not only helped me to stay organised but also served as a cue to pause and summarise within each section to reiterate key learning points, supporting the process of digesting information as it less cognitively demanding (Jordan et al., 2020). This was especially crucial for the online sessions as they were longer in duration with more information to absorb. In addition to the structure, I used clear and accessible language, avoiding jargon, and providing definitions and explanations for any new terms. I was mindful that if the teaching was difficult to understand then it would subsequently be difficult to apply. Jargon-free teaching is valued by both lecturers and students (Howson & Weller, 2016) and the feedback was a positive reflection of the effectiveness of the slides.\

Table 3

Feedback on Structure and Language

Learner Feedback	• It was so helpful to understand the digestive symptoms and how you can use that psycho education to help with CBT. I didn't know a lot of this so it was super helpful and it was explained in simple and no jargon way. • I found the information I was learning, was not something I was aware of before, so this was amazing. Additionally I am happy information on was easy to follow and followed into your talk. • Teachers explanations- she explained things in a way that was interesting and easy to understand • Amina explains things in a way that is easy to understand. Very informative
Observer Feedback	• Well structured – content was relevant and the lecture flowed smoothly. Points felt related and linked to clinical practice.

Use of technology

Effective use of technology is a key characteristic of good quality online teaching (Jaggars & Xu, 2016). At each section, I used it as an opportunity to utilise technology to check-in with the learners' understanding and answer any. The emoji function on MS Teams came in especially convenient as people could send a thumbs up or thumbs down in a few seconds that would appear on my screen and allow me gauge how people were feeling and if they understood. Using Slido as a technology tool also meant that learners could submit their questions as I was delivering the teaching rather than waiting until the end or if they preferred to be anonymous. There were positive comments on the use of Slido in the feedback, *"I liked the way you used Slido for questions, especially given the lack of time".* The option to ask questions flexibly and anonymously encourages participation and improves satisfaction (Filer, 2010). Initially I was nervous about incorporating other technology in the online teaching, but I did a test run prior and it worked well, encouraging me to use it again. I did not use this in the face-to-face sessions, but I would consider its use for larger in-person groups in future.

Activities

The overall feedback I received from the learners and observation was that there was a variety of activities and resources that people enjoyed. I was pleased to receive such feedback as it was consistent with the constructivist approach of creating an active learning space. I made a key effort to include more active tasks after S1 as I received feedback that they would have liked to practice goal setting within the session itself. Unfortunately, due to time constraints, this was not possible, but I had more flexibility to incorporate this in S2-5. The breakout rooms and experiential exercises were well received in the PWP sessions and there was good engagement. I included a breathing exercise specific for pain and many people shared their reflections of implementing it and asked whether it would be possible to share the recording with them, indicating that it was beneficial.

Challenges

I identified several challenges across the teaching sessions such as the pace of sessions, access to further resources and online engagement.

Timing and pace

A challenge I faced during the teaching sessions was timing, which came up in two ways: 1) the session feeling rushed, and 2) receiving feedback suggesting a longer session would have been beneficial. In S1, I noticed that my pace was faster than ideal, and feedback did indicate that more time would have been helpful. I took this feedback into account for the following sessions and was mindful of time constraints. I also amended the feedback forms for subsequent sessions to gather feedback on timing and pace as I did not initially collect information on this part of the teaching.

I had prepared to allocate my time better for S2, but the previous speaker encountered technical issues, leading to a delay in the start time of my teaching slot. As a result, I had only 45 minutes instead of the initially agreed upon hour to deliver the session. Despite being mindful of my pace, I had to speed up the pace to cover all the content. I reflected in the moment and had to decide whether to exclude some material or continue as planned. Given that the session was covering a specific health condition following the stages of assessment to treatment, I made the decision that it was important that the PWPs received thorough information. I apologised to the learners for the potentially faster pace due to time constraints and they were understanding. I encouraged them to submit questions to the Slido so that I could address them at the end. Feedback for the IBS sessions reflected that the pace was fast, but the learners recognised that the circumstances were beyond my control which was reassuring. As I had two more sessions scheduled with the PWPs, I offered them the chance to revisit any questions or topics. The experience taught me the importance of adaptability and decision-making in unexpected circumstances that may occur in teaching.

One insightful piece of feedback I received from the student teaching session (S5) was to consider the time of when the session is planned for. They shared that they would have preferred for the teaching to be earlier in their course and placement to allow them to apply the information and consider the psychological aspects sooner. The session was scheduled towards the latter part of their placement whereas they preferred it to occur in after two to three weeks. I had not previously thought about how the timing of the session could influence its impact and how it applied. When a course is designed and planned, the order of sessions is usually considered but as this was a standalone session that was not originally integrated into overall teaching, I had limited input. Nonetheless, I shared the feedback with the student placement coordinator for future consideration.

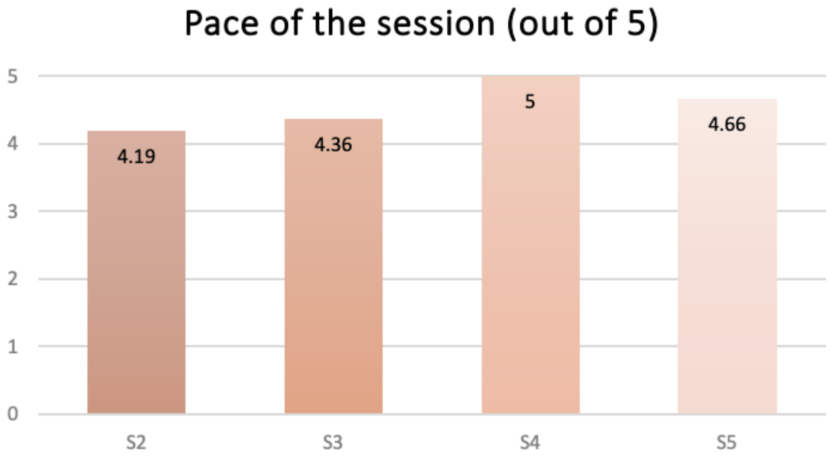
Table 4

Feedback on Timing and Pace

Learner Feedback	• I understand the time constraints, but would have loved to have had more time • Speed- would have been nice to have a bit more time but that was not Amina's fault! • I felt I learnt a lot without it being overwhelming. • Too fast - struggled to write notes and add your suggestions to my notes without missing your points • It was quite fast paced and lots to get through but appreciate we have the slides and time to process the material which is super helpful. • Prefer the session during week 2 or 3 with enough experience to understand sessions but also time to implement it.
Observer Feedback	• Time appropriately, session started and ended on time with a short break in the middle. • Well-paced – didn't feel rushed and there was opportunity for students to ask questions and discuss points.

Figure 2

Improvement in Pace of Session



Additional resources

I presumed that access to the lecture materials would suffice for the learners across S1-5. However, I received requests for handouts summarising the information post-lecture in S2-4. This may have been due to the length of the lecture materials, as well as the additional verbal information and answers to questions I provided that was not necessarily on slides. Effective PowerPoint slides have a lower density of text and implement visuals and other non-text elements (Brock et al., 2011). I therefore used the slides as a guide rather than a script. To address the request, I created a handout summarising the main sections and additional information that I provided verbally to be shared after the lecture. Additionally, they requested copies of resources that I referred to in the session such as a recording of the experiential practice and worksheets. Feedback from one session highlighted the need for a resources section at the end of the session, an aspect I overlooked when I was designing the slides but is a common feature in lecture slides. For future teaching and training I deliver, I plan to create a resource pack that can be shared with attendees. This is particularly relevant for practical sessions and in my clinical work in the NHS as the resources are likely to be used in practice.

Student engagement

Overall, I had good engagement in the teaching sessions with participants actively responding to questions, reflecting, and exchanging ideas. I anticipated that engagement may be lower in online sessions due to a greater risk of distraction compared to face-to-face teaching (Kostaki et al., 2022; Simic et al., 2022). Several people were proactively participating, and I took steps to use tools such as Slido for further engagement. However, I noticed that in the three online sessions, it was the same few people that had their cameras on and asking questions. The level of engagement from students is influenced by their level of interest, motivation to learn about the topics and how they interact with others (Briggs, 2015). The observer feedback pointed out that I could have *"encouraged increased use of cameras to help gauge student reactions"*. Facial expressions are an indicator of how people are engaging with the topic and content in online learning (Buono et al., 2023; Whitehill et al., 2014). Among those who had their cameras on, I found it very useful as I could gauge their understanding through nodding or identify any confusion from puzzled looks. There has been an increase in online teaching in recent years and cameras on has been shown to lead to greater involvement and students feel more connected (Kushlev & Epstein-Shuman, 2022; Schwenck & Pryor, 2021) which has been found to be a predictor of student achievement (Alim et al., 2023). The face-to-face sessions did not present with the same challenge as all the attendees were in my clear view and I was able to judge their interest and engagement from their body language and facial expressions. In my self-reflection I noted how I felt more at ease in the face-to-face session when I had the body language and facial cues compared to virtually where I have no control over their environment.

Areas of improvement

The key areas of improvement that I will consider based on the feedback received and how I intend to action these in future are outlined below (see Table 5).

Table 5

Areas of Improvement and Actions

Areas of Improvement	**Action**
Resources	• Create a brief overview handout with key points • Add a resource list at the end of sessions and include any materials used within the session
Timing	• Longer time • Include less material in the session and reflect on whether the information is necessary for the learning outcomes. If not possible, request for a longer session time and/or more than one session to cover the material. • Consider timing of the session and when it is run if it is part of a bigger learning course
Online engagement	• Encourage more people to use their cameras in online learning. Include it as part of the session housekeeping rules at the start to prompt people to do so.
Technology	• Test out technology tools in face-to-face teaching, particularly if it is a larger group as it can be a valuable resource for engagement and prompt people to share if not comfortable.
Activities (doing, digesting)	• Create more space / allocated time for reflection and digestion. Both in the breakout rooms / smaller groups and when feeding back to the wider group. • Role-play to implement clear examples of *how* it is applied in practice and provide feedback.
Learning needs assessment	• To complete a more in-depth learning needs assessment by understanding more about roles I am less familiar with (e.g. physiotherapy) and discuss themes or challenges that come up to make clinical examples as relevant as possible in sessions.

Summary

The experience of delivering five teaching sessions overall was positive and raised valuable learning points for me to consider. However, I recognise that teaching experiences can vary, each presenting its own unique successes and challenges depending on the content and audience. Another observation would have been beneficial for further development and for comparing feedback from different sources and learner groups. I particularly enjoyed the sessions with the PWPs as they showed enthusiasm for the topic and had questions beyond the materials covered in the session. The value of health psychology was clearly demonstrated in the sessions with a few PWPs sharing that they were considering specialising in health psychology as a direct result of the teaching. The positive feedback from the learners and the observer has increased my confidence in delivering teaching and I hope to take advantage of further opportunities.

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