Through the eyes of residents:

An interpretive phenomenological study of the learning experiences of Ophthalmology residents in the Northwest of England

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ABSTRACT

Introduction: This study explores the learning experiences of Ophthalmology residents in the Northwest of England via the use of interpretive phenomenology. Currently of the available literature there are very few qualitative research papers investigating Ophthalmology postgraduate education in the United Kingdom. Ophthalmology training in the UK has seen vast changes to its structure and delivery over the past few years without any studies recording how the residents view their training.

My study aims to address this problem, revealing what ophthalmology residents feel about their learning, what obstacles they face and what they wish could be improved. This study's findings shows that there is fertile ground for change within Ophthalmology training and plenty of room for improvement.

Interpretive phenomenology is a qualitative research method that explores how individuals make sense of their lived experiences, acknowledging that researchers also interpret those experiences through their own perspectives. It involves a double hermeneutic method where the participant interprets their experience, and the researcher interprets the participant's interpretation.

Methodology: The study involved six doctors of various stages in their residency who are currently completing their Ophthalmology residency in hospitals located in the Northwest of England. In-depth interviews were conducted via Microsoft teams. The interviewees were essentially asked thirteen questions regarding seven broad topics covering their learning experiences in the outpatient clinics, surgical theatre, use of assessments tools, feedback, formal exams and teaching, use of simulators and courses. The interviews' structure enabled a free-flowing semi-formal conversation aiming to deeply explore as much valuable data from lived experiences as possible. Data was then analysed using a double hermeneutic method and common themes identified were grouped into sections.

Results and Discussion: Unsurprisingly for both learning in outpatient clinics as well as in surgical theatres, the most important factors affecting residents' learning were very similar. Residents made clear that their consultants' supervision and support is what plays a vital role in their learning. The technical aspects and setting where the learning takes place were also noted to be extremely important. Consultants who dedicate their time to organise their clinics appropriately to accommodate teaching, who dedicate time to give timely feedback and retain a calm demeanour when allowing their trainees to learn in the surgical theatres are the ones who are viewed as role models by residents and are most valued for their support. Regarding learning surgery, another important aspect identified was that of consistency. Residents extrapolated on how in order for their trainers to allow them to perform surgical steps they would first need to gain their trust and this only comes with consistently being with them in surgical theatres. This aspect is

something their employers would need to guarantee via designing appropriately timed rotational timetables amongst other methods. In terms of other ways in which the residents practice and learn ophthalmology were external surgical courses, formal residency exams and use of simulators. When it comes to the latter, the surgical simulator “eyesi” was widely mentioned as a good adjunct to learning cataract surgery but remains useful, mainly for the early stages of the residents’ careers. The existing feedback and assessment methods consisting of completing “work based assessments” compiled in a portfolio, are mostly viewed as unable to capture the full picture when it comes the residents’ progression. The evaluation panels such as appraisals or Annual Review of Competence Progression (ARCPs) were seen more as a formality rather than having any real impact to their development into fully licensed ophthalmologists. Future research on different aspects of ophthalmology postgraduate education including residency and fellowships should be considered as it poses a generally untouched field of study that can enrich the existing literature.

Conclusion: Qualitative research methods such as phenomenology can provide valuable insights into the experiences of Ophthalmology residents and produce actionable suggestions for improvement of the existing teaching methods and curricula. My study reveals ophthalmology residents’ views on their training and proposes changes to the residency structure such as closer mentorship by consultants, better arranged clinics and surgical lists that accommodate teaching and need for alterations to the portfolios and assessment methods to be made.

1. INTRODUCTION and LITERATURE REVIEW

1.1 What am I studying?

In this qualitative study I am going to explore the learning experiences and understandings of ophthalmology residents in the Northwest of England in relation to their surgical and non-surgical training. The aim of the study is to better understand what ophthalmology residents find satisfactory or dissatisfactory about their training, which aspects they wish to be improved and how. I am also looking for gaps in the curriculum, assessment methods, which educational strategies are currently used, and of course which current strategies seem to be working, according to the residents. Finally, I will propose ideas for improvement and that could hopefully provide fertile ground for future research on the topic.

This study will be using a phenomenological scope of view and as part of this effort, I will analyse what phenomenology is and why it is the ideal qualitative analysis method to achieve the aim of my study.

1.2 Ophthalmology residency training in the UK – for context

After acquiring a medical school degree (from the UK or abroad) a newly qualified doctor would need to first work as a 'foundation doctor' in the UK. The 'foundation training' can take 1 or 2 years (depending on whether the doctor is a UK graduate or not), and once completed the doctor receives a 'foundation completion certificate' and is eligible to apply for residency training positions in any specialty.

Ophthalmology residency can be completed either by receiving a 'national training number' which makes one 'a deanery trainee' or by applying for local ophthalmology resident posts in hospitals and working locally in the specific hospital/trust that employs them. The former route is started via succeeding into the yearly national selection for the specialty with the application process involving passing a multi-specialty exam called MSRA, passing a communication skills interview, and having a strong portfolio/evidence folder, all of which give the applicant points for their application. If successful in surpassing the cut-off point, the applicant is ranked against their peers and if ranked high enough can secure a spot in a specific training deanery in the UK. Being a 'deanery trainee' means that for 7 years that the specialty lasts they will be rotated through hospitals in the specific area/deanery and eventually if successful in their exams and competencies, they will receive the 'specialty completion certificate' which can be validated via the General medical council (GMC) to put them on the 'ophthalmology specialist register' making the resident eligible to apply for 'consultant jobs'. This form of

residency is usually more preferred as trainees have more support from the Royal college and their hospitals and usually get more opportunities for surgical training.

The later route (locally employed) allows more stability as the resident does not have to switch hospital every year and can help residents build stronger relationships with the faculty of the hospital they are working at. It can be completed in a similar timeframe as the residency with a 'national training number', if the resident has enough support and access to all subspecialties in the hospital they are employed, otherwise that would mean they would need to change jobs via applying to other hospitals to get the opportunities they require. The locally employed residents need to collect the exact same competencies and proof as the 'deanery trainees' do and similarly submit it to the GMC to enter the 'ophthalmology specialist register'.

Furthermore, if the candidate has less than 30 months of experience in Ophthalmology, they can choose any path they wish, while if they have more than 30 months then they are not eligible for the option of 'national training number'.

1.3 What is known? – Very little

There are only a handful of papers that assess the perspectives, skill acquisition and satisfaction of ophthalmology residents about their training. This gap in knowledge can prove to be a problem when trying to reorganise the residency training curriculum and teaching methods. In 2024, there was a large restructuring in the Ophthalmology residency curriculum in the UK (RCOphth, 2024). The fact that these changes were imposed without any available studies -that consider the trainee's views- to back them can make someone question whether these changes were made to benefit the residents or the system.

Studies in ophthalmology training experiences have generally been quantitative in nature. For example, Rodrigues et al., (2013) performed a cross-sectional study across four of the largest schools of Ophthalmology in the country, aiming to record the mean annual surgical rate of common ophthalmic procedures. Although a small part of the study focused on the subjective opinion of residents on how well prepared they felt by the end of their training, the core part analysed just number of hours worked and number of surgeries performed, in essence just quantitative data. Similarly a study by Hoffman et al., (2017) analysed surgical training records of ophthalmology residents after obtaining anonymous cumulative surgical data from the Education and Training Department at the Royal College of Ophthalmologists (RCOphth). They performed a quantitative analysis of surgical case numbers performed by them without any further qualitative investigation into residents' satisfaction of their learning.

The study that perhaps got closest to exploring the experiences of ophthalmology residents in the UK was the one conducted by the UK ophthalmic trainees and trainers group, in partnership with the Royal College of Ophthalmologists (Dean et al., 2019).

A national survey was conducted with a questionnaire refined through relevant college committees and distributed online to all UK ophthalmology trainees, with reminders sent out over a four-week response period. A total of 188 trainees responded, resulting in a 24.1% response rate. Unlike the two aforementioned studies instead of recording the mean number of surgeries performed, this survey comprised of multiple-choice questions, recorded the confidence level of residents in surgical skills, clinical skills and non-clinical skills with the results allowing conclusions to be drawn as to how the experiences of the residents have shaped their confidence level in various areas rather than what these experiences are.

Similarly to the UK-based research studies, overseas studies from Canada, Switzerland, Jordan, Indonesia, Nigeria, India, Brazil and USA have all involved surveys with mostly multiple-choice question (MCQ) questionnaires. All of them aimed to record the confidence level of ophthalmology trainees in terms of surgical or non-surgical skills, satisfaction about their residency program's curriculums and overall evaluation of their experiences. There were no in depth qualitative research studies on the residents' experiences and how these have shaped how they learn (Adewara et al., 2023; Chadha et al., 2016; Gogate et al., 2017; Guimarães et al., 2023; Kamaruddin et al., 2024; Saad et al., 2024; Sciences, 2011; Zhou et al., 2009).

Unlike in Ophthalmology where qualitative studies on the resident's experiences are truly lacking, other specialties have had research groups interested in this topic. Several researchers have conducted interviews on trainees from various surgical and non-surgical specialties exploring topics related to their residency such as stressors, learning surgical competencies, learning in outpatient clinics or their overall residency experience.

The study by Gale et al., (2025), provides a qualitative exploration of the key stressors affecting UK resident anaesthetists' wellbeing. It identifies clinical duties as major sources of stress as well as non-clinical stressors, such as exams, logbooks, and portfolio requirements. Structural issues within training contributed to stress, including challenges with the recruitment process, curriculum changes, and frequent geographic relocations due to rotational training which also led to long commutes and financial burdens. While elements like entrustment scales were seen as helpful for progression, trainees found transitions between curriculum stages difficult, and communication between residents and decision-makers was often lacking. Although rotational placements can offer varied clinical experience, it was mentioned that greater stability

and advance notice can improve residents' experiences. Workplace culture emerged as another significant factor, with fatigue, burnout, and emotional distress reported. Local and national support structures, including educational supervisors, mentoring, and well-being initiatives, are essential, thus implementation and awareness of them is needed. Furthermore, they suggested that protected rest time, flexible hours, and wellness training can all help improve workplace culture.

Ophthalmology is a specialty that really lies in the crossroads of surgery and medicine. It is considered by many a surgical specialty but at the same time is possesses a lot of non-surgical aspects such as outpatient clinics or a lot of high volume non-surgical procedures such as eye laser and injections as treatment options. Studies that have explored other surgical as well as medical specialties have features that are applicable also to ophthalmology and the studies below are a mix of surgical and medical fields.

More closely to my field of work lies the research study by Kamali & Illing, (2018) who analysed how feedback in the operating theatre affects surgical trainees' confidence, well-being, and professional development. Trainees found it difficult to recall recent examples of feedback, particularly positive ones, suggesting either a scarcity of feedback, a bias toward remembering negative events, or a culture where criticism is more common than praise. Positive feedback, when present, was associated with supportive environments and clear learning objectives, which helped trainees feel relaxed, perform better, and become more motivated to engage with trainers. In contrast, all trainees reported experiences of negative feedback, often perceived as unjustified or delivered in a demeaning manner. This type of feedback was easier to recall and had a more lasting emotional impact, sometimes leading trainees to consider leaving surgery altogether. Some forms of negative feedback included shouting, swearing, and even physical intimidation, which harmed performance and reinforced power imbalances. Despite recognising the value of constructive criticism—particularly after clinical errors—trainees often received feedback lacking in clarity or helpful guidance. Poor communication and a lack of feedback training among trainers were identified as contributing factors. The hierarchical culture and fear of repercussions led many trainees to tolerate undermining behaviour without reporting it, reflecting a wider issue of bullying in surgical training. However, many residents saw their negative experiences as lessons in how not to train when it will be their turn to do so. The researchers concluded that while some trainers were highlighted as excellent role models, the inconsistent quality of feedback supports calls for formal trainer accreditation and courses educators would need to undergo in order to be allowed to train residents.

Continuing in the same wavelength of surgical education, a study by Kieu et al., (2015), showed that surgical education is primarily built on relationship-based mentoring and experiential learning. Residents valued consultants who were available, supportive, and willing to explain concepts in depth. It is thought that trainees develop core competencies through observation, role modelling, and hands-on engagement in theatre. Consultants (educators) emphasised learning by example and expected trainees to take initiative in both acquiring knowledge and teaching others. It was highlighted that time and personal attitudes significantly influenced the quality of the learning environment. Ideal conditions included unpressured theatre time, balanced case complexity, and mutual willingness to teach and learn between educators and trainees. However, service demands, administrative duties, and limited interaction often hindered effective teaching. Consultants may struggle with relinquishing control due to their responsibility for positive outcomes, while poor attitudes on either side can impede learning opportunities. In terms of preoperative briefings there was high variability with some consultants being proactive in setting expectations and identifying learning goals, while others provided minimal guidance. Intraoperative teaching tended to be more structured. Consultants varied in how and when they intervened during procedures, but most aimed to balance safety with learning opportunities. Similarly postoperative debriefing was widely acknowledged as beneficial but was not consistently practiced. Trainees often needed to actively seek feedback, which would be most effective when immediate, specific, and constructive. However, feedback seemed to only be provided when something went wrong, with little recognition when performance was satisfactory. Overall, the conclusion was that surgical training is shaped by a combination of mentorship quality, structural conditions, and cultural attitudes toward teaching and learning.

Another cardinal factor which is affecting resident surgeons' learning is stress. As demonstrated in the systematic review by Arora et al., (2010), stress can have high negative impact to novice surgeons' performance and as a result affect their confidence as well as learning. Combating and managing stress is of outmost importance in the process of educating residents to perform surgical tasks.

When it comes to learning in outpatient clinics, the studies that analyse the thoughts of residents on their learning unsurprisingly demonstrate similar aspects to these regarding surgical education.

In their paper O'Malley et al., (1999), investigated internal medicine residents' experiences in outpatient clinics. They demonstrated that learners believed their educational encounters in clinic would improve if more time was available (i.e. less time

pressured clinics), with better patient (case) selection and if more learning resources were available. An interesting observation from that study is that although feedback was valued by residents, it was not the most prominently valued aspect, which as the authors explained, that came in contrast to other similar studies.

A study by Kisiel et al., (2010), explored internal medicine residents' perspectives on effective outpatient clinical teaching through focus groups comprised of residents. This study emphasised the high value residents place on teachers' interpersonal skills. Junior residents were particularly sensitive to negative behaviours like harshness, while senior residents favoured more collaborative teaching styles.

Its findings supported the idea that strong interpersonal connections are essential for effective learning and align with theories of student-centred and collaborative education. Junior and senior residents had equally strong but qualitatively different concerns with juniors being more affected by emotional tone and feedback, whereas seniors prioritised autonomy, role modelling, and teacher expertise. A common theme was that residents across all levels expressed discomfort with excessive autonomy, especially when managing sick or complex patients, underscoring the need for faculty to check in regularly about trainee comfort and competence. Furthermore, the study showed that standard assessment tools which comprise mostly of surveys fail to capture the depth of resident concerns as only through open discussion did deeper insights came to light. All in all, it was emphasised that effective teaching is shaped not only by clinical knowledge, but also by sensitivity, communication, and mutual respect between educators and learners.

A qualitative study by Teunissen et al., (2007), investigated how medical residents learnt in the clinical workplace and developed a theoretical framework based on a grounded theory approach. The study emphasised that work-based activities (learning through experience in real life clinical settings) form the cornerstone of learning with learning occurring through processes of interpretation and meaning-making that lead to the development and refinement of personal knowledge. While competency-based curricula, simulations or other educational tools can certainly aid the education of residents they can certainly not be a replacement to work-based activities.

Last but not least, the paper by Esteghamati et al., (2016), investigated the core components of clinical education of residents via use of a qualitative method involving interviews. The study demonstrated that the 'hidden curriculum' -which refers to the unspoken norms, values, and expectations in the hospital work setting- shapes learning through environmental and organisational factors. These factors have a strong impact on learning behaviours, communication, professionalism, and relationships with patients

and colleagues. An organisational factor in the study was that as the number of residents per clinic increased, the residents' responsibilities, their supervision and feedback were reduced. Moreover, clinical priorities such as the emphasis on patient care over education constrained learning opportunities for residents. Time limitations, high patient volumes leading to busy clinics, and the complexity of clinical duties reduced faculty availability for teaching. It was identified that learning environments such as morning reports, educational rounds, and outpatient clinics were mostly affected by time constraints and workload, which hindered the quality of teaching.

Furthermore, attending physicians (i.e. consultants) were viewed as role models by residents, particularly in their demonstration of professionalism and interpersonal skills, while more senior residents often served as mentors and teachers, especially in surgical settings. This underlined the value of training all residents to be effective educators. Overall, the study emphasised that clinical learning is deeply shaped by informal structures, social interactions, and institutional priorities that operate outside the formal curriculum (i.e. in the 'hidden curriculum').

Therefore, while research in ophthalmology training in the UK is lacking, these papers concerning other specialties' postgraduate training show what residents consider as important for their learning. Across multiple studies, faculty availability and relationship with their residents, the setting of clinics and surgical theatres allowing for sufficient interaction between faculty and trainees and of course organisational factors that determine how varied or busy clinics or surgical lists are, were determined to be a common denominators for dictating the learning outcomes.

1.4 Why I selected this topic?

The primary reason I was motivated to explore the research question of 'what the experiences of ophthalmology residents are' is because of this lack of qualitative research when it comes to ophthalmology residency training. Following the footsteps and being inspired by the similar research studies conducted for other specialties I attempted to fill this gap in the literature, but this is not the only motivation I have had. The second reason is the fact that I am personally implicated in this subject. I, myself am an ophthalmology resident in the Northwest of England. By having a first-hand experience of the topic being analysed, I had a desire to search further into the perspectives of fellow colleagues, to find out if there any common themes and strive to explore ways in which our experiences could be improved and optimised to enhance our learning and well-being. Furthermore, a change in the ophthalmology learning curriculum took place in August 2024 which completely restructured how both residents in GMC approved training posts as well as in local ophthalmic training programs will need to work to

progress to reach the goal of finishing residency. The new "OST 2024 Curriculum," as it is called, encompasses four levels of training that can be achieved in each ophthalmology subspecialty and is purely competency-based with each level being "paired" with fellowship examination, acting as a type of "check-point" that would need to be passed before progressing to the next level (RCOphth, 2024). This alteration in a long-established training pathway of the specialty will certainly affect the experiences of resident doctors and I believe it is important to capture their thoughts.

1.5 Which method is used to explore the question?

The research method I chose to conduct this study is phenomenology. The reason I selected phenomenology, as opposed to any of the other research methods, is two-fold. Firstly, phenomenology focuses specifically on the experiences of the phenomenon being studied, and in my mind this narrowing down allows for the maximum exploration of data in relation to this phenomenon, instead of diffusing the focus to multiple aspects. Secondly, as an inductive approach, this methodology uses "bottom-up" methods to draw conclusions, largely ridding the researchers of any pre-existing biases (the extent of that varies though depending on which type of phenomenology is used, which I will explain later on), allowing them to explore the data for what it is rather than needing to fit it into pre-made hypotheses. Phenomenology is therefore unique due to its focus on individual experience and meaning making. These aspects differentiate it from other qualitative approaches such as, grounded theory, which seeks to generate theoretical explanations from social processes, ethnography, which aims to understand cultural practices within groups, narrative research, which centres on how individuals construct identities and stories over time, and case study research, which situates the phenomenon within real-world contexts where boundaries between phenomenon and setting are not clearly defined (Tavakol & Sandars, 2025; Teherani et al., 2015; Varpio et al., 2020).

1.6 What is phenomenology?

The term phenomenology comes from the Greek words of φαινόμενον (anything that happens in nature or community or life and is being sensed or becomes a topic of observation or study) and -λογία (the study of) (*Λεξικό Της Κοινής Νεοελληνικής*, 2020). It is a methodology that focuses on a particular phenomenon that is being investigated, and aims to comprehend the personal, subjective encounter of that phenomenon by the individuals experiencing it. Its objective is to articulate the significance of this subjective encounter, encompassing both the content and the manner of the experiences. This is usually achieved through thorough interviews or exploration of personal stories, as well

as through inductive analysis and with a special consideration to reflexivity(Tavakol & Sandars, 2025).

Various types of phenomenology exist; each grounded in distinct perspectives on the content and manner of human experience. Put differently, each school of philosophical thought underpins a different approach to phenomenology where various thinkers engage in dialogue, offering differing perspectives on what phenomenology entails and how it should be applied. Edmund Husserl (1859-1938) is thought to be the father of phenomenology, he himself engaged with earlier philosophers like Kant and Hegel, who also explored phenomenological concepts. Heidegger, one of Husserl's students, built upon Husserl's work but also questioned some of its assumptions. Many other philosophers such as Sartre, Schütz, de Beauvoir, Merleau-Ponty, Berger, Luckmann, Ricoeur, Garfinkel, Bourdieu, Derrida, Giddens, Gadamer, Habermas and van Manen have contributed to the expansion of phenomenology.

There are two philosophical traditions in phenomenology, the transcendental (descriptive) phenomenology and hermeneutic (interpretive) phenomenology. Transcendental (descriptive) phenomenology finds its philosophical origins in the work of Edmund Husserl and its ontological assumptions claim that reality is internal to the knower (what appears in their consciousness), that subjective and objective knowledge are intertwined, while its epistemological assumptions state that the observer must be bias-free and understand phenomena by descriptive means. In essence it strives to set aside researcher bias to reveal the experience. The researcher seeks neutrality and adopts a practice called "bracketing" suspending personal assumptions to focus entirely on participants' accounts. On the other hand, hermeneutic (interpretive) phenomenology is mostly based on the works of Heidegger, Gadamer and van Manen, with ontological assumptions being that the lived experience is an interpretive process situated in the one's lifeworld and the epistemological assumption that the observer is part of the world and thus not bias-free, understanding phenomena by interpretive means. This way hermeneutic phenomenology acknowledges that understanding is inherently shaped by the researcher's background, context, and perspective. Thus, interpretive researchers engage in reflexivity and the "double hermeneutic" a process whereby the participant interprets their experience, and the researcher interprets the participant's interpretation. (Aspers, 2020; Cristancho et al., 2018; Neubauer et al., 2019; Tavakol & Sandars, 2025). Since in my study the topic being studied are the learning experiences of ophthalmology residents in the Northwest of England, I have chosen to use interpretive phenomenology, as I myself am an ophthalmology resident in the same region and instead of trying to bracket off my knowledge, I will use it to the advantage of the study by using an interpretative approach.

Regardless of approach, phenomenological research requires rigorous attention to bracketing and reflexivity. Bracketing is particularly important in descriptive studies and

involves setting aside preconceptions through strategies such as writing analytic memos, keeping a reflexive journal, and engaging in peer debriefing. Reflexivity, is mostly found in interpretive studies, involves researchers self-examining how their own identity, beliefs, and experiences shape the research process. This includes being transparent of the researcher's preconceptions and their impact on data interpretation.

Cohorts often include less than ten participants and are chosen for their direct, first-hand experience of the phenomenon under study. Purposive sampling where, selecting participants who are most likely to offer valuable and detailed insights is often used for this reason. The end goal is to accurately record rich, detailed insights rather than generalisability. Data is usually collected using, semi-structured interviews. They should begin with open-ended questions and include follow-ups that probe participants to express their thoughts and feelings (Malterud et al., 2016; Stalmeijer et al., 2024; Tavakol & Sandars, 2025).

What is both the core and an important challenge of phenomenology is to accurately capture how a phenomenon occurs before trying to study it via interpretative frameworks. It is also important to note that only the person living the experience/phenomenon has direct access to it and that the researchers studying it only have access to the report given by that person. As explained in the paper of Rietmeijer & Veen, (2022), researchers using a phenomenological method should not be interested in peoples' thoughts, feelings, or opinions per se, but rather in the recurring structures of experience that underlie these ideas, opinions, and feelings. This process of stripping down the data to the most meaningful characteristics of a phenomenon has a practical relevance, as it creates a manageable number of characteristics which when taken into account, may help resolve persistent problems. This process is the so-called "eidetic reduction" of data.

In both phenomenological approaches, identifying themes is crucial. Descriptive phenomenology expects the researcher to thoroughly immerse themselves in the data. This means that the researcher needs to read the accounts of the participants multiple times in order to gain a deep understanding. Next, the researcher identifies specific statements within the accounts that directly relate to the phenomenon being investigated. These become the building blocks for further analysis. With a focus on these key points, the researcher carefully explores the meanings associated with the phenomenon. The identified meanings are then grouped into themes that appear consistently across all participant accounts. Construction of a detailed description of the phenomenon is followed, incorporating all the themes identified in the previous step. Finally, the researcher takes the comprehensive description and condenses it into a concise statement. This statement focuses on the core aspects that are considered fundamental to the structure of the phenomenon (Morrow, R., Rodriguez, A. and King, 2015). In interpretative phenomenology, researchers actively engage with and disclose their own subjectivity throughout both data collection and analysis. This process involves

reflection on their perspectives while striving to maintain a reflexive stance (Bynum & Varpio, 2018). During my study I have included my reflections on the topic while presenting the result findings.

Similarly to other qualitative research approaches, to establish trustworthiness in the results, phenomenology demonstrates its quality via adherence to four core criteria: credibility, transferability, dependability, confirmability.

Credibility deals with the question, "How congruent are the findings with reality?" and many argue that ensuring credibility is one of the most important factors in ensuring trustworthiness. Andrew K. Shenton, in his paper "Strategies for Ensuring Trustworthiness in Qualitative Research Projects", (Shenton, 2004) elaborated in the techniques that can be used to ensure credibility and they are based on the work of Lincoln and Guba in their book "Naturalistic inquiry" (Lincoln & Guba, 1985). These activities include: adoption of appropriate and well-recognised research methods; development of early familiarity with the culture of participating organisations; random sampling of individuals serving as informants; triangulation via use of different methods, different types of informants and use of different sites; use of tactics to help ensure honesty in informants; iterative questioning in data collection dialogues; negative case analysis; debriefing sessions between researcher and superiors; peer scrutiny of project; use of "reflective commentary" and description of background qualifications and experience of the researcher; member checks of data collected and interpretations/theories formed; a general description of phenomenon under scrutiny; and examination of previous research to frame findings. All of these activities are mentioned and analysed.

Employing some, if not all, of the above provisions would help ensure confidence that the data collected is credible and that there is a "fit" between respondents' views and the researcher's representation of them (Nowell et al., 2017). In my study I tried to use a well-recognised research method, used my knowledge of the topic being studied and employed iterative questioning and reflective commentary, all to ensure credibility in my findings.

Transferability refers to the generalisability of inquiry and many argue that the research results need to provide a rich and detailed description of the phenomenon being studied. This would allow readers to fully grasp it and compare the described instances to similar situations they've encountered. Authors of qualitative research though often disagree on the nature and extent of background information that should be offered. Several studies emphasize the importance of researchers clearly defining the study's limitation before readers try to apply the findings to other contexts. To achieve this, researchers should provide details about the number and location of participating organisations, any

restrictions on participant demographics, the total number of participants involved, the data collection methods used, the number and duration of data collection sessions and the overall timeframe for data collection. This transparency allows readers to better understand the specific context of the research and assess its transferability to other situations (Nowell et al., 2017; Shenton, 2004). In my study I explicitly disclose as much information as possible regarding how my research was conducted while being careful not to reveal too much to risk identification of my participants which would have ethical ramifications (see later, section on ethics).

According to the Oxford English dictionary, the word "dependable" means that something may be depended on; trustworthy; reliable ("Dependable, Adj.," 2023). Achieving reliability (dependability) means that if one was to perform the entire study again under identical conditions, including the same setting, methods, and participants, they would find similar results. In order to ensure dependability, researchers can focus on creating a research process that is logical, well-documented, and allows for others to trace the steps taken. If these factors are achieved then that creates findings which are auditable and as a result, a study that can be audited demonstrates dependability (Nowell et al., 2017; Shenton, 2004). My methodology section includes all the steps taken to conduct this research and the appendix includes a copy of the questions asked in the interviews.

Confirmability focuses on making sure the researcher's interpretations and findings are demonstrably linked to the data collected. This requires researchers to clearly explain the process of reaching their conclusions and how they connect to the evidence. Triangulation involves the use of different data collection strategies, especially observation, focus groups and individual interviews (which also helps establish credibility as mentioned earlier). These enhance confirmability by reducing the effect of investigator bias. Furthermore, the research report should also justify why a particular approach was selected over other viable options, and to be honest about any limitations or weaknesses these methods might have. Transparency also extends to the results section, where the researcher should discuss any initial theories or ideas that the data ultimately did not support.

Essentially, confirmability is achieved only when credibility, transferability and dependability are all well-established (Nowell et al., 2017; Shenton, 2004).

When it comes to ethical considerations, phenomenological research also needs to address key issues such as gaining informed consent, privacy and confidentiality,

anonymity, dissemination of the research findings, as well as evaluating the benefits and reciprocity, and the costs and risks.

While phenomenological research does not typically involve physical harm, it can raise social or emotional concerns. Participants' reputations might be tarnished, or discussing sensitive topics could cause discomfort. The in-depth interviews used in phenomenological studies rely heavily on trust between the interviewer and participant. Participants might reveal very personal thoughts or even have revelations during the interview itself. This increases the ethical responsibility of the researchers, requiring them to be extra mindful of the ethical considerations in the researcher-participant relationships established. This also means acknowledging their own biases, using sound research methods, building trust with participants, respecting their right to choose participation, avoiding taking advantage of them, and keeping their information confidential.

In my study, the trust between the interviewer (i.e. myself) and interviewees was reinforced by the fact that I share lived experiences with some of the participants and thus I was able to deeply understand and emphasise with them during the interview process, which as a result, also supported my recruitment and authentic data collection. Regardless I tried to maintain reflexivity by considering outside perspectives, by drawing on literature from other fields, being aware of my positionally and making sure to remain open and interrogate my own assumptions.

Furthermore, the core design of phenomenology research – using small number of cases/participants and rich descriptions of events – can often pose a challenge for complete protection of the participants' identity. To combat this, researchers can report actual accounts as complex vignettes, show demographic data only for the group of participants and not each individual, and of course by gaining informed consent from the participants of whether or not they agree having their actual quotes used in the final publication (Hanson et al., 2011).

2. METHODOLOGY

2.1 Research design and Reflexivity statement

As the introduction suggests, the research methodology used was that of phenomenology. When it came to choosing between a descriptive or interpretive phenomenological approach my decision was easy to make, with the interpretive method being selected.

I selected an interpretive method since I am an ophthalmology resident in the Northwest of England myself and thus, I am not an outsider to the question of research. Even with the maximum possible effort, it would be impossible to completely rid my own preconceptions, personal thoughts and understanding from the subject being investigated and thus ensure bracketing. In fact, one of my motivations to this research question is my personal investment in the topic, and as a result of this bias, I thought that an interpretive approach was the only real option to remain truthful to my research and the readers of this thesis.

Owing to this type of study design, I have used reflexivity to critically examine how my own perspectives, experiences, and contexts influence every stage of the research process. As a result, this will create a study that is co-constructed via my own personal, interpersonal, methodological, and contextual factors instead of being entirely objective. Hopefully this aspect will enhance the depth and rigor of my phenomenological design.

2.2 Candidate selection

The selection criteria and number of participants were essentially dictated by my research question and the phenomenological research approach chosen.

Inclusion criteria:

- Only doctors employed in hospitals falling under the North-west of England deanery region at the time of the interview (Alder Hey Children's Hospital, Wirral University Teaching Hospital, Countess of Chester Hospital, Leighton Hospital, Royal Liverpool Hospital, Southport and Formby District General Hospital, University Hospital Aintree, Warrington Hospital, Blackpool Victoria Hospital, Manchester Royal Eye Hospital, Rochdale Infirmary, Royal Blackburn Hospital, Burnley General Hospital, Royal Bolton Hospital, Royal Lancaster Infirmary, Royal Preston Hospital, Stepping Hill Hospital.
- Doctors who are residents in Ophthalmology and are actively receiving training in it.
- Doctors find themselves in approved training programs and thus are employed by the deanery (i.e. hold a national training number, NTN) as well as locally employed doctors (LEDs) employed by the individual hospitals (i.e. part of an Ophthalmic local training, OLT).

Exclusion criteria:

- Doctors with the position/title of consultant, associate specialist or sub-specialty fellows since these are not resident doctor positions (i.e. junior doctors).
- Foundation year doctors, as although junior doctors, are also not considered as residents due to working in rotations in various specialties prior to full license attainment.
- Non-doctor clinicians such as advanced care practitioners, physician associates.

In January 2025, after receiving ethical approval (see later section 2.7), and considering all the selection criteria, I proceeded with making initial purposive contact with eight individuals via email, text or face-to-face. I used either first-degree, second-degree or third-degree personal connections to identify these individuals. Of the eight doctors contacted, six of them replied positively to the first informal invitation and provided me with their email addresses. Half of these candidates (3) were part of a deanery approved training program, and the other half locally employed doctors (3), part of ophthalmic local training. One of the candidates had previously been working in a local ophthalmic training program before securing a national training number and now working under a deanery approved training program. The experience of them highly varied from one to six years of ophthalmology training.

At this stage I was able to send them an email containing an information leaflet which explained the research question being studied, the reasons they have been contacted, what information is being collected and what will happen if they participate including the use of their information, how confidentially will be ensured, any benefits of participating, data protection and who to contact whether they have any concerns. In the same email the candidates were asked to reply to the invitation to take part in the study after having considered all the information provided and were prompted to ask any further questions they have had. All six individuals were happy to take part and therefore a second email containing a written consent form was sent to each one of them, instructing them to read it carefully and return It signed (copies found in appendix).

2.3 Interviews

As it usually is the case with phenomenological studies, interviews were the chosen data gathering tool employed in my study. All of the interviews took place between February 2025 and April 2025.

All interviews were conducted via Microsoft teams (MS teams) with the automatic built-in recording and transcription service being used, while being logged in through my secure Oxford university account. Each interview lasted from 35 to 55 minutes in total. I

acted as the sole interviewer in all of them and there were no other individuals present in the interview rooms other than the interviewer and interviewees (with the sole exception of one of them being joined by a friendly and curious cat).

The interview format was semi-constructed to allow a free-flowing conversation between interviewer and interviewees and aimed for maximum gathering of valuable information. Nevertheless, the interview structure followed thirteen questions as a guide (see appendix) which essentially aimed to gain information on seven broad subsections decided based on the literature reviewed and to comprehensively understand their multi-faceted learning experiences (all included with examples of their lived experiences):

- How they learn in the outpatient setting
- How they learn in the surgical theatre setting
- How appraisals or annual review of competency progression and the use of e-portfolios or surgical logbooks and whatever they entail, are valid and accurate assessment methods in their opinion
- How feedback affects their learning process
- How useful formal teaching sessions organised by their employers enhance their learning
- How and to what extent simulators and courses including dry or wet labs enhance their learning
- How and to what extent studying for formal Royal college exams (or equivalent) enhance their learning

For all the questions posed I began with broad, open-ended questions that focused on the participant's experiences, such as asking them to describe a moment when they first encountered a particular phenomenon allowing for detailed and personal narrative. As the conversation unfolded, reflective probing was used to deepen the participants' responses, encouraging them to consider how specific experiences have shaped their understanding. At times I also prompted participants to elaborate further, asking them to share more about how certain moments felt or what they meant. Furthermore, I tried in real time -as the interviews were taking place- to identify themes on the experiences revealed by the interviewees and discuss them in an attempt to interpret them and their significance. This technique of interviewing aligns with the philosophy of interpretive phenomenology (Manen, 1997).

Throughout the interviews, interruptions were minimal, while pauses were employed to allow interviewees to reflect on their experiences.

The nature of the interviews was purposely slightly informal in order to allow for a friendly environment where participants felt safe, respected, and encouraged to express their thoughts without any reservations. This aligns to previously mentioned ethical concerns and trust building between interviewer and interviewees.

2.4 Data collection and analysis

Every interview was automatically transcribed via the transcription service of Microsoft teams (MS Teams) and following that, the transcripts were reviewed by myself for any errors or misinterpretations of the automatic transcription service. At this point, to protect their identities, the names of the participants were erased from individual transcripts and instead each participant was pseudonymised using a specific colour namely, yellow, green, turquoise, pink, blue and red.

In May and June 2025, after having carried out all interviews, the transcripts collected were reviewed once again and initially a phenomenological analysis was performed using a double hermeneutic technique where after the participants had interpreted their experiences on the transcripts recorded, I went on to interpret their interpretations. Afterwards, a thematic analysis was performed using as a mental framework and backbone the six-step approach (familiarising myself with my data, generating initial codes, searching for themes, reviewing themes, defining/naming themes and writing it up)(Braun & and Clarke, 2006).

The information from each participant corresponding to a specific subsection of information being analysed was grouped together in a document under the subtitles of, ‘outpatient clinics learning’, ‘surgical theatre learning’, ‘formal teaching’, ‘formal assessment tools’, ‘feedback’, ‘courses and simulators’, ‘exams’, ‘thoughts and aspirations for improvement’.

In the following Results section I will reveal the themes identified, include participants quotes as well as my interpretation of the results as dictated by the hermeneutic circle of interpretation employed in interpretive phenomenological research (Tavakol & Sandars, 2025).

2.5 Trustworthiness

In interpretive phenomenological research studies validity cannot be ensured via members checking or triangulation, methods which are used in other types of qualitative research. Instead, the cardinal ways to ensure trustworthiness to the results of my study were transparency in the data analysis, both in documentation and description of themes. Ensuring depth and authenticity in representing lived experiences by including quotations from the study subjects and finally guaranteeing that the interpretations

made were a product of my own thoughts but also of the ones that were mutually produced by myself (i.e. the interviewer) and interviewees during the interview process (van Manen, 2014).

2.7 Ethical approval

Prior to commencing any part of the research study, including contacting participants, I received full ethical approval by the university's research ethics department. I had to submit a CUREC1a form including information about what my study is, how it will be conducted, including how participants will be approached, what information it dealt with and how it aligns with Oxford's best practice guidelines. Furthermore, I completed the mandatory 'research and integrity' and 'information security and data protection' courses.

Finally, I received approval for the participant information leaflet, consent form and the document containing the interview questions that I used in my study.

2.8 How the literature review was conducted

For the purpose of this dissertation a review of the literature was conducted primarily using the online search engine 'Google scholar' as well as 'PubMed' to a lesser extent.

All of the research papers as well as books included in the references were acquired using my institutional log in details and entering via the Bodhelian libraries. The reference management software used was 'Mendeley'.

3. RESULTS

The results section in divided into sections based on the seven-broad subsections the questioning was focused around. It starts off portraying the views of residents regarding learning in outpatient clinics, surgical theatres and in formal teaching sessions. Then it goes on to show views on assessment tools, feedback, adjunct learning tools/methods such as outside courses/use of simulators/ exams and finally any wishes for improvement.

3.1 Learning in the outpatient clinics

The vast majority of an ophthalmology resident's time is spent in outpatient clinics. In these clinics, patient attend prebooked appointments that have specific timeslots, where the residents would take the history of the patients and examine them. These

appointments can be new referrals to the ophthalmology unit or follow up appointments for patients that have already been seen in the hospital in the past.

The first part of the interview focused on how the residents learn in this setting.

The aspect emerging as most critical from the interviews was that of "consultant supervision and support." All six interviewees voiced the opinion that the only way they learn clinical ophthalmology in these clinics is when they are supported by consultants or other more senior colleagues where they can ask questions, discuss an interesting case and gain insights into how to diagnose and treat various conditions.

As an interviewee noted *"At the resident stage you need a consultant that shows you trust and give you confidence to carry on. If the consultant takes time to explain things to you it makes you want to go and read more about the case you have seen"* and similarly another interviewee shared that *"I have been fortunate to been given a variety of subspecialty clinics spanning many aspects of ophthalmology and all of these clinics are supervised by a consultant thus allowing me to discuss cases with them. These informal discussions about cases is how I learn during these clinics."*

A third interviewee echoed the main way they learn in outpatient clinics by discussing cases with seniors in an informal way, *"I get semi-formal teaching, in that there is a case-based discussion with other senior colleagues in the clinic about interesting cases. I find this informal/semi formal teaching -which is the predominant way of teaching- in my hospital much better than the 'formal' weakly teaching which can be hit-or-miss."*

Often in outpatient clinics residents will face pathologies that they have never seen before and without senior support they might feel isolated and unsafe. Without establishing an environment where residents feel safe to practice it would be impossible to gain anything in terms of knowledge acquisition, clinics could turn out as a setting where residents just need to do their work and essentially 'survive' without making mistakes. This is demonstrated by a few interviewees having had negative experiences when they lacked this senior supervision, with one resident in a locally employed program noting *"I have also had many negative experiences over the years of doing multiple clinics completely on my own without any consultant support thus not getting any teaching and have to resort on teaching myself."*

The variability in how much supervision a resident is granted in their clinics depends also on their status, meaning whether they are locally employed or whether they hold a national training number. In the latter case, residents tend to be more protected by the Royal college with more emphasis given to their learning than pure service provision. This

is seen in the response to one of the interviewees who had the chance to work a locally employed as well as in a national training program, where they stated,

> *"Even in my second year of training of the national training program I am mostly supernumerary in clinics, working under the consultant in clinic and thus have no patients booked for myself. I take patients from the consultants, discussing all of the with them and thus learning from every single case. Likewise, if they are examining an interesting or unusual case they would fetch me from my clinic room to examine and have a discussion about it. The teaching in clinic varies day by day. It really depends on who the consultant is and of course how busy the clinic is. Thankfully I don't think I have ever been in a clinic where I felt I wasn't learning anything since starting my job posts as part of having a national training number."*

They continued on to talk about when they were locally employed, *"When I was locally employed there were situations due to lack of senior supervision or having extremely busy clinics I didn't have the opportunity to go over cases with my educators and learn from them."*

Nevertheless, even residents in approved training programs can find themselves in difficult situations lacking supervision and support, as explained by one such interviewee,

> "*In terms of supervision in clinics, I am working a work pattern that -according to my deanery director- should not be happening for a person of my level of experience. I don't have an assigned consultant supervisor in many of my clinics and most of them happen without any senior supervision around. I have to rely on calling the on call who is most of the time not onsite or calling a registrar colleague for help. This has an impact on my learning as if there is no consultant around for me to ask questions then how am I supposed to learn in clinic."*

Another common theme deduced from almost all of the interviews was how the 'setting of the clinics' dictates the learning outcomes. Many residents remarked that if the clinics are not designed in a way to accommodate teaching, this cannot and will not take place. Overbooked clinics, multiple overly challenging cases burdening the consultants managing the clinics with extra pressure are common factors, as two interviewees explained, *"For any teaching to take place in my experience there need to be the right conditions in the outpatient clinic; choose when the clinic isn't overbooked, when cases are appropriate for the resident's level, when the consultants are in a good mood etcetera"* and, *"When my consultant in clinic was very stressed due to his clinic being overbooked he reacted in a very negative manner when I asked him for help. It essentially made me feel bad and apprehensive to approach him again"*.

From the interviewees responses it is easily understood that the main educators in outpatient clinics around whom teaching revolves are the consultants. Having an educator that is willing to teach their resident, has a passion for passing on their knowledge plays a vital role to the career progression of young residents. The 'willingness of educators' to provide teaching is the final theme identified in this section. A third year resident noted, "*Equally just like a consultant can make you love a subspecialty they can also make you hate it if they are unsupportive. That can have great ramifications not only for your learning but also what you choose to do with your career path.*" Similarly a first year resident explained, *"Learning in clinics highly depend on the consultants that I am doing the clinic with. There are consultants who like to teach and go out of their way to take me aside and capitalise on every opportunity they have but there are others who don't really care for it. In any case its very important to encourage people with their learning. At my junior stage most of the learning comes with enthusiasm".*

That goes to show how much of an impact consultant willingness to take up the role of an educator has to the 'formative years' of a doctor in residency.

Unfortunately there have been interviewees who have been very disgruntled by the system they have been put in and the support they have had over the years, with a senior resident noting *"Unfortunately, I never felt a consultant was providing teaching in clinic settings because it's part of their job – no one ever went out of their way to come and teach. It always felt like I needed to seek the teaching and sort of ask for it."*

In a similar tone the interviews moved on to explore ophthalmology resident's views on their learning when it comes to surgery, which is the theme of the next section.

3.2 Learning in surgical theatres

Ophthalmology being a surgical specialty involves residents spending a lot of their time in the operating room. Most of the surgical procedures fall under the category of 'microsurgery' where microscopes and high precision tools are used, with each surgical step having an extremely narrow margin of error. This results in high stakes situations with a lot of pressure both for the residents trying to climb the steep learning curve as well as their educators being ultimately responsible for the surgery's outcome.

The most important theme affecting resident's learning in theatres, identified across all six interviews was that of the 'attitude of the educator'. It was clear that the more confident and 'relaxed' the educator is during teaching, the more knowledge and

confidence residents were able to gain. On the contrary, when residents had to deal with anxious educators their learning was hampered and confidence tarnished which had repercussions for future learning experiences as well.

One interviewee noted, *"I had a consultant who was extremely nervous when he was teaching me how to operate, being very vocal and loud considering the patient was under local anaesthesia and thus awake, hearing it all. It made me lose confidence totally and for the next few theatres sessions that episode was all I could think about"*. Another resident mentioned,

> *"I believe that as an educator in theatre, one should be very relaxed when teaching. I had a very relaxed trainer in the independent provider that I operated at which helped me progress a lot, giving me lots of confidence when operating…in the hospital setting I had an extremely stressed trainer who really affected my confidence. I can recall a time when he accidentally hit my hand while I was holding instruments within the patient's eye, all caused by his extreme stress to tell me what to do. This episode amongst similar others have an impact on my surgical ability- my hands shake when I have a stressed trainer supervising me."*

In a similar context regarding the individual educators, many interviewees identified that their relationships with them has a great impact in how much they learn in the operating room. Just like for any aspect of human relationships, in surgical education the trust that is built between educators and residents plays a pivotal role in the learning outcomes with trust being built via 'consistency' with a specific educator.

A senior resident explained,

> *"When it comes to teaching in theatre [surgery] it takes a lot longer to gain somebody's trust and it's a lot harder in every aspect. Like with the clinic teaching, you need to pick the right moments, tip toe around tricky situations. I have had times when I had to give something in return (like stay behind and examine extra patients etc.) in order to be educated in theatre."*

Similarly, a first-year resident noted,

> *"One of the most important aspects in surgical training is consistency. When it comes to a consultant teaching you how to operate, they need to know you, get accustomed to you and trust you. If there is no trust it is very difficult to teaching surgery especially when it comes to ophthalmology surgical training where the learning curve is extremely steep the to 'get started' you need a lot of time and effort' and continued on to say, 'I unfortunately lacked that consistency for the first few months of my training as I was moved around from one theatre list to another*

and shifting consultants. I believe that that kept me back and lead to a regression in my skills set".

In the same tone, a third-year resident stressed the importance of consistency, *"The other thing that has helped me progress is continuity. When I was operating on the outside provider I was assigned to a consultant that I already had in the NHS, so he knew me and trusted me. He was my clinical supervisor as well so that helped me even more."*

Another very interesting theme I identified almost across all interviews was that of the 'appropriateness' -when it comes to surgical difficulty- of surgical cases dictate how much a resident is able to learn in theatre.

To give the readers context, in ophthalmology the most common surgery all residents get to learn is 'cataract surgery'. With it being the most common surgical procedure that a resident would need to know how to perform to a very high degree of competence, residents get high exposures to learning it and thus focused their responses on it in our interviews. As a result, the next few quotes relate solely on this surgical procedure.

Furthermore, across the country the NHS subsidises independent providers to perform such surgeries to reduce waiting times, but that has a great impact to the learning of residents as one interviewee noted,

"Another hot topic in ophthalmology surgical training in the UK is the fact that many 'easy/straightforward' surgical cases when it comes to cataract surgery, 'leave' the NHS and are operated in the independent sector/outside providers leaving all the complex/difficult cases for the NHS hospitals. This has a detrimental impact on the learning of residents in the NHS as it leaves them very little room to practice on manageable cases early on in their careers."

Another interviewee who was lucky enough was to operate in both settings, was able to reflect on how that has shaped their learning,

"At the second half of last year I fortunately placed in an outside provider. There, due to the high-volume low complexity cases I was able to progress much faster. The independent sector is built in a way to maximise surgical efficiency that's why one can operate way higher number of cases in the same period of time as in the NHS. This assignment led me to get good with easy cases, build a solid foundation and learn the basics on high volume cases that were very simple. This year I am once again only in an NHS theatre list which is fine cause although the cases we do per week is far smaller, they are more complex and therefore I get to train on more difficult cases with many more complex steps being employed. Without building the right foundations on many cases I wouldn't have been able to be where I am today in terms of my surgical skills."

Finally, another cardinal theme that came out from the transcript analysis was that relating to 'theatre setting' and the complexity of teaching within a multi-disciplinary team. When talking about theatre setting this encompasses mostly an administrative layer of, how much time there is available for teaching to occur, how other theatre stuff not directly involved in the teaching (i.e. nurses, auxiliary staff etc.) interact with the educator and resident and affect the learning experience.

Negative experiences were relayed by a locally employed resident who noted,

> *"Nurses and axillary theatre staff can also be very expressive from their body language that they want to finish the day and go. They put too much pressure on the consultants to be as quick as possible in theatre. I feel this hampers any teaching that can be done. I have had cases when consultants have told me, 'Let me do the next two cases as we are running out of time and the nurses will complain about it'. I don't think it's fair as I have the right to be trained."*

On the other hand, a first-year trainee had a positive reflection on the subject, *"I have never experienced negativity from other theatre staff when I am trained in theatre. They have a clear start and finish time so whether theatre runs over by being slower due to me being trained it doesn't affect them as they have changeover (other staff replacing them). Therefore, I haven't felt any external pressure to rush."*

If the right organisation exists where theatre staff do not need to work overtime due to a resident 'slowing down' the efficiency of their work then that would certainly relieve pressure off both the residents as well as their educators/consultants.

As a senior resident reflected below, in his opinion it is the responsibility of the consultant acting as the educator to make these adjustments and accommodate the necessary teaching,

> *"Theatre staff can be reacting negatively to situations where teaching is taking place as it slows down their work and may need to stay late but the teaching that happens between consultants and residents is not part of their job- it is down to the theatre lead which is the consultant. The theatre lead should be the one adjusting the theatre list to be compatible with teaching- considering that complications can happen and with a teaching list it might be a bit less efficient."*

3.3 Formal teaching

Unlike the previous two subsections where residents' views on learning through practice (i.e. while working) -what one could call 'informal teaching'- were formulated, the residents were also asked about their views on formal teaching organised by their employers. That could be teaching sessions organised by their individual departments if locally employed or by the Northwest deanery (the regional body overseeing their progression) if employed with a national training number (NTN).

These teaching sessions often take place once per week and are in a 'classroom-like' setting where residents of various levels gather and learn from observing lectures.

A large divide in opinions were seen between locally employed and deanery employed doctors. Locally employed doctors displayed mostly negative opinions, noting *"No formal teaching. No consultants are involved in it anymore. Residents gather on their own and discuss cases between themselves,"* and, *"Currently no formal teaching is arranged in our department so it's just us residents getting together and discussing cases, which is a shame."*

On the other hand, trainees with a NTN expressed more positive comments, always relating to the Northwest deanery teaching, with a third-year resident explaining, *"Since joining the training program, the formal once weekly deanery teaching has been pretty good. Its consultant led, thus the consultants have to prepare presentations and its mostly interactive with questions and images being used."* A first-year resident reflected on the differences between the local and deanery teachings hat he gets to attend weekly,

> *"Formal weakly teaching in the deanery is very connected to the real world, it's very relatable and informative. On the other hand, formal teaching organised locally in the department is very didactic- there is a selection of a subject and basically it involves a presentation that just follows the book. There aren't many case presentations and thus the "real world" ends. It's not as useful."*

3.4 Assessment tools

In ophthalmology residency training, formal assessment tools exist such as portfolios which record competency signed offs, logbooks which record surgical procedures performed as well as appraisals (for locally employed doctors) and Annual Review of Competence Progression panels (ARCPs, for residents holding a national training number, NTN). The appraisal meetings and ARCP panels are meeting that take place once per year (usually towards the end of the academic year) and evaluate all the recorded competencies and progression residents have completed over the past year. They determine whether the residents can progress to the next stages of their residency and set new goals to be achieved.

What the interviews showed unfortunately, is a unanimous opinion that is leaning more towards the negative aspects. Their quotes revolved around the opinion that these assessment tools are not helping the residents' learning nor are able to capture the 'real picture' of where they are at in their training.

A junior resident explained,

> *"I don't think the portfolio is representative of what I am learning. There should be another way devised to capture learning experiences without having to get them signed off from a busy consultant. Furthermore, it should be your work dictating your learning and not the other way around. In order to get mandatory 'sign offs' you may end up just chasing these instead of focusing on working appropriately. Patient care and therefore your work is more important than learning and in turn your learning is of course more important that filling your portfolio and getting sign offs. A system that mirrors this should be created."*

Another junior resident had a more mixed opinion on assessment, referring to the differences in recording practical and non-practical competencies, saying, *"I believe the portfolio and logbook are very good to record what knowledge one has acquired from a practical skills standpoint. On the other hand, for theoretical knowledge they might not be that representative, as that's difficult to record."*

Regarding appraisals a senior locally employed resident noted, *"Appraisals in my experience have been very far from reality- just a 'tick box exercise' for 10 minutes, that's all. You just do the minimum required. I have never had any guidance in appraisals about setting real goals, giving ideas about courses to attend or what surgical skills to gain."*

3.5 Feedback

When it comes to feedback as a resident this is usually received in two main ways, a formal path of colleagues completing a 'multi source feedback form' (MSF), with all forms being collated into a single document that is taken into account in the annual appraisal or ARCP or via an informal way, of receiving feedback on day-to-day activities. Unlike the previous themes investigated where they mostly focused on the interactions between residents with their educators (usually consultants), feedback brings into play fellow residents, nurses, technicians, administrative staff and generally anyone the residents interact with and learn from.

In stark contrast with the views on formal assessment tools, most interviewees viewed feedback as mostly a positive experience that helps them grow as ophthalmologists.

One junior resident noted, *"Thankfully all the feedback I have received has been given in a constructive and positive manner that really motivates me. I prefer it when feedback is given to me immediately during my clinical activities as I feel it stays with me and I am able to remember how I need to improve next time I encounter a similar task"*. Another noted,

> *"Thankfully I don't recall any negative comments when it comes to people giving me feedback during teaching. I have perceived from my more senior educators' (consultants, registrars) body language that they may have expressed that "hey you should know more about this topic etc." but that if anything pushes me to learn more. These nonverbal cues have never been given in a negative way."*

The latter resident continued, reflecting on how they have perceived feedback-giving culture changing for the better over the years, noting, *"I do believe the culture of teaching and giving feedback has evolved to being more gentle, encouraging and considerate. Historically surgical training was always thought of as being more 'brutal' to the learners."*

A third resident focused on the differences between formal and informal feedback, *"I feel like formal feedback like MSF [multi source feedback] is not that useful. You usually don't get any actionable feedback and it's just positive generic comments. I ask for informal feedback on the day-to-day basis from other colleagues, that's always more relatable and useful. That plays a great importance on my personal development plan."*

3.6 Courses, simulators and exams

Just like for other surgical specialties use of courses and surgical simulators are a common path many residents follow to enhance their practical skills. Many courses are organised by the Royal College of Ophthalmologists and run multiple times per year, deaneries or hospitals allow residents to use ten study leave days per year and many also have a study budget, to allow trainees to use towards these courses.

Over the past decade or so all deaneries across the country have acquired the well-known ophthalmic surgery simulator known as 'eyesi' which helps residents practice mainly cataract but also other intraocular surgeries.

All residents that have used the eyesi had a very similar opinion on it, a useful tool initially to get a core sense of the surgery but not as beneficial as one progresses. Characteristically, one of the interviewed residents noted, *"I have used the eyesi simulator in my first job. It helped get my confidence up doing cataract surgeries in the beginning. But it's quite limited, it's not like real life, therefore it becomes obsolete later on."* A third-year resident had a similar opinion saying, *"The eyesi simulator was very*

helpful when I was learning the first cataract steps, but once you have done enough in real patients it becomes redundant. It was certainly useful for instrument handling practice."

An interesting point made about courses, was not only their usefulness as to skills and knowledge acquisition but as to how they can boost a trainee surgeon's confidence which as was established in earlier sections plays a vital role in their learning and performance. A first-year resident got across this point,

> *"I have done the phacoemulsification course which improved my confidence and taught me how to use the surgical tools/machine we use in surgery rather than how to operate the actual eye, which is useful regardless. The thing that stuck with me was the encouragement from the registrars and consultant that ran the course. The message was clear, 'everybody has surgical complications, the important thing is to manage them correctly. If you aren't getting complications that means you aren't operating enough'. All these salient messages were through around which was very helpful."*

In terms of formal examinations, ophthalmology residents are expected to pass the Fellowship of the Royal college of Ophthalmology (FRCOphth) Part 1 exam, with it being a mostly basic sciences exam to be taken usually in the first three years of training, the Refraction certificate exam being a practical exam to be taken by end of year four and the two-part exam FRCOphth Part2 Oral and Written exams which are the final exams before finishing residency, -needed to qualify as a consultant- usually taken at the end of it.

Due to the nature of the interviews being mostly junior residents, they all discussed their views on the Part 1 exam rather than the other exams. Unsurprisingly a common theme overarching all interviews was that studying for the Part 1 exam was not very helpful to their day-to-day activities due to the very theoretical knowledge that it requires, with some quotes being, *"I don't remember much of it, other than its just basic sciences and thus not useful in the real world"* and, *"The Part 1 hasn't helped that much in terms of clinical knowledge"*.

An interesting point of view I would like to share was that of the importance of undertaking exams not only for the knowledge that one acquires from them but also for their psychologic values, working as a confidence boost and provide a sense of accomplishment when cleared that very few things in a resident's careers can match. The Ophthalmology college exams tend to be very difficult hurdles to overcome with very low

pass rates- they often require a lot of preparation and many hours of dedicated studying by residents.

Both these aspects are voiced in the comments of a third-year resident

> *"[.... passing the part 1 exam has] given me personal confidence and sense of achievement. So it has helped in the psychologic aspect...The support for exam preparation is very poor, however. Whether you are a resident with or without a training number the employing hospital or deanery do not offer much support for exam preparation other than the study leave provided. Since the Royal College requires you to do the exam there should be courses and educational information given to the residents to better prepare them for it."*

3.7 Views on improvements

Upon the interviews closure I asked the residents if they could give one sentence regarding their view on what could be improved in their residency training to come.

"I would like more formal teaching and more surgical theatre time, mainly the later."

"Better assessment methods"

"More learning in theatre."

"I wish it was obligatory for consultants to have teaching residents incorporated in their job plans so that they will have to collectively take up the role of the educator and provide teaching."

"More education on practical skills such as lasers. More education on aspects of emergency ophthalmology needed to help you in your on-calls."

"More surgical training opportunities. In general, more structured surgical training."

Most residents focused on surgical training and education, with explicit mention to faculty needing to take up more responsibility for their training. Ways on how these

improvements can be achieved are explored in the following section drawing up information from the literature review.

4. DISCUSSION

The landscape of medical and surgical training in Ophthalmology in the UK has vastly evolved over the past few years. With the launch of a new curriculum in 2024 (RCOphth, 2024) introducing new assessment methods, tools and criteria to be used by all residents across the country as well as the increasing trend of the NHS outsourcing surgical services to the independent sector (Maling & Adams, 2024) I felt that there was no better time to perform a study aiming to record the views of the people being widely affected by these changes, propose changes for improvement and provide thought concepts for future research to take place.

The study used an interpretative phenomenological approach aiming to produce a detailed account of the resident's thoughts and offering a deeper insight into their lived experience, revealing important aspects that might have otherwise gone unnoticed (Bynum & Varpio, 2018).

There are no other studies in the UK that have examined Ophthalmology residents' experiences in such way. Two UK studies by Rodrigues et al., (2013), and Hoffman et al., (2017), both analysed variations according to region or time period, in the surgical numbers and competencies residents had achieved but had no element of analysis regarding the trainee experiences and needs. The closest study in literature regarding Ophthalmology training in the UK in is the one by Dean et al., (2019), where a questionnaire was sent out to residents, giving out multiple choice options to select their confidence level regarding different clinical and non-clinical skills as part of their residency but once again no clear comparisons can be drawn to my study due to the vast difference in the target data being analysed.

However, by analysing the data gathered from the interviewees divided into distinct sections, analysing themes and comparing with the available literature from other similar studies from other specialties I was able to draw valuable conclusions.

Sections are divided according to the subheadings 4.1, 4.2 and 4.3, while themes identified are underlined in the text.

4.1 Learning in clinics and theatre

Outpatient clinics form the cornerstone of learning in ophthalmology residency. The main

theme identified from all six interviewees was the importance residents place on the 'consultant supervision/support', and how the extent to which they feel well supported and supervised shapes most of their experiences and learning opportunities they are faced with. The interviewed residents note that educators that support them in clinics enhance their learning outcomes, gives them confidence and inspire them to pursue further learning in their own free time from other resources such as studying books, papers etc. When looking at the literature, the study by Kisiel et al., (2010), on internal medicine resident's perspectives reflects the same ideas, with residents of all levels underlining the need for their educators to support them and check in with them when in clinic and senior residents preferring collaborative teaching styles with use of case base discussions. A study by Teunissen et al., (2007), emphasised medical residents' inclination to learning through experience in clinical settings as noted by the interviewees of my study citing the 'informal learning' that occurs in clinic as the most important and information rich type of education in their residency.

No matter how much supervision is present however, if an educator is not prepared to provide teaching, then very little teaching will take place. This is all tied to the 'willingness of educators' to participate in any educational activity. Interviewees felt that educators have to provide encouragement and provide teaching as an obligation of their job rather than view it as providing a favour to their residents. The GMC's good medical practice guidelines mention teaching both under the sections of providing leadership as well as ensuring the right work culture, mentioning that all doctors shall be willing to provide teaching, mentoring and coaching to colleagues (GMC, 2024).

Another recurrent theme identified from the interviews was that of 'clinics setting/conditions' influences any training taking place. Clinics that are running in an adequate pace, are not overbooked with patients, or booked with multiple overly complex cases that require more attention and time from the trainees and consultants alike are the ones that provide fertile ground for teaching and learning. If any of these conditions is lost, then the educators won't have time to dedicate time for teaching and would just need to provide service provision as noted by multiple interviewees. The paper by O'Malley et al., (1999), in fact stressed the exact point, as the study's interviewed residents noted that the educational encounters in their clinics would improve if clinics were less time-pressures, and better patient selection was employed. In a similar concept the study by Esteghamati et al., (2016), revealed that busy or complex clinics reduced availability of consultants for teaching.

The first theme identified from the interviews when discussing learning in surgical theatres was that of 'attitude and confidence of the educator'. Anxious educators had negative impact to the confidence of young residents when it came to operating – greatly affecting their ability to complete surgical tasks. Evidence that stress negatively affects

surgeon's performance and learning is echoed in the systematic review by Arora et al., (2010). No matter how confident an educator is towards teaching, learning in theatre will be hampered if 'consistency' is not maintained, as identified by the interviewees. The words 'consistency' or 'continuity' were mentioned a lot during the interviews, and they relate to the residents being assigned with a specific educator over an extended period where they can build a relationship and mutual trust that can allow the educator to assign more surgical responsibilities to the trainee allowing them to progress. Most residents mentioned how for a consultant to teach their resident how to operate first they would need to get to know that resident, and that's the biggest mount to climb during the early steep learning curve. This continuity can only be maintained via constructing appropriate rotational timetables for the trainees where although they are exposed to a variety of educators and sub-specialties, they still maintain some level of continuity with educators that trust them and give them surgical responsibilities. Similar findings were identified in the study by Kieu et al., (2015). Trainee surgeons were able to learn all the surgical competencies through operating in the surgical theatre and do so they relied on educators that they viewed as role models and were supportive and willing to explain concepts to them. This building of a relationship-based mentoring was identified as one of the cardinal factors in which trainees learnt. In the same study another factor identified as important to resident education was that of the quality of learning environment which encompasses the challenge of time, complexity of cases, service demands and administrative duties. These findings were mirrored in my study's results as themes such as 'appropriateness of cases' and -similar to the outpatient clinic theme- 'theatre setting' emerged, this time relating more to how the multi-disciplinary team involved in theatres affects learning.

Regarding the 'appropriateness of cases', this is a topic that is very relevant to ophthalmology surgical training in the UK.

An editorial by Maling & Adams, (2024), noted how the significant shift in cataract surgery provision in England, where Independent Sector Providers (ISPs) now perform approximately 60% of NHS-funded cataract surgeries poses challenges for the training of ophthalmology trainees. ISPs tend to select low-risk cases and may not support the full spectrum of training opportunities, especially complex cases, limiting hands-on experience for trainees. This leads to NHS hospitals now dealing with more complex cases which may not be appropriate for more junior residents, fewer total surgeries thus further reducing training exposure.

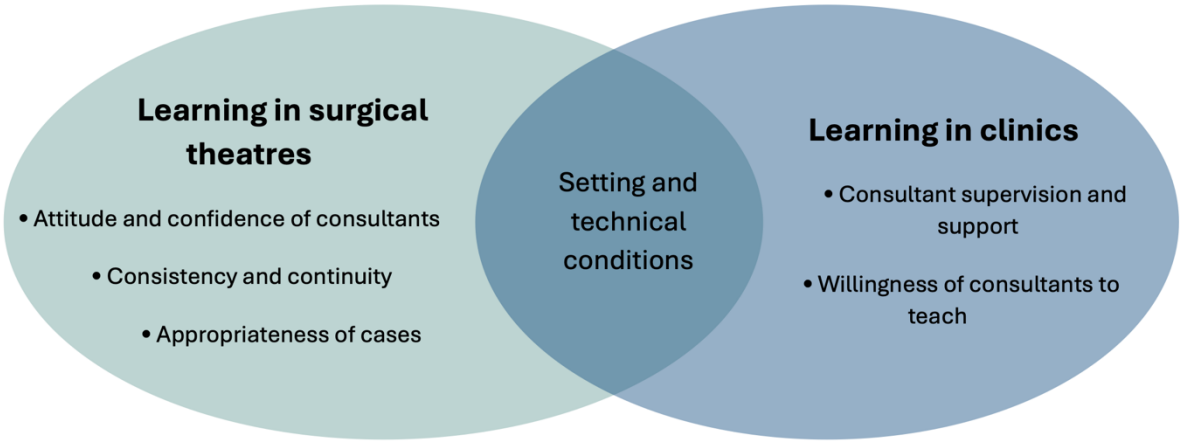
While some ISPs are engaging in training efforts, access and quality remain inconsistent across regions and providers. In 2023, a GMC survey confirmed trainees' difficulties in meeting training requirements due to limited ISP involvement. The authors advocated for integrating robust training expectations into NHS commissioning contracts, requiring all providers to train a proportional number of trainees and maintaining quality standards

that are seen in the NHS setting (e.g., complication audits, simulation, supervisor feedback).

It does however identify potential advantages to utilising ISPs for the training of residents. The environment of ISPs in optimised solely for delivery of cataract surgeries and is often very efficient in managing effectively and safely the maximum number of cases. It can thus allow trainees to train on higher volumes as compared to the NHS setting over a set time-period. Furthermore, potential investment to novel training methods such as virtual or augmented reality simulation and video analysis could also be possible due to more time being available as opposed to an NHS setting that can elevate the level of training of residents.

Few residents in the region (mostly the ones with national training numbers) including some of the interviewees have been fortunate to attend these outside providers -as part of their normal work schedules- to learn to operate on these 'simple' surgical cases, more suitable for beginners. The points raised by the editorial were echoed by the interviewees who also noted the potential benefits of using ISPs and NHS settings and the appropriateness of cases each setting provides to their advantage. It is important to note, that continuity in theatre addressed earlier can also be maintained in ISPs setting as long as trainees are assigned to the same educator over a long period of time.

Moreover, regarding 'theatre setting', the results proved -similarly to the study by Kieu et al., (2015)- that theatre staff and time constraints can affect teaching in theatre but ultimately it is the theatre lead's (i.e. consultant's) responsibility to make the right adjustments to the surgical list and cases assigned for learning to meet service demands without being challenged by lack of time or necessitating other staff to work overtime.



Themes relating to learning in clinics and surgery

4.2 Assessment tools and feedback

When it comes to assessment tools in Ophthalmology both locally employed residents as well as residents holding a NTN, have to get "signed off" for tasks as proof that they are competent in different aspects of their training. The "sign-offs" are in the form of documents called "work-based assessments" (WbAs) and "entrustable professional activity" (EPA) assessments, which are collected either in a digital form (under a platform called "e-portfolio") or paper form (pdf forms that can be downloaded from the Royal college's website) which are collectively reviewed in the annual assessment panels. These annual assessment panels are either a group of assessors constituting the Annual review of competence progression (ARCP) panel for trainees holding a NTN or just a single appraiser which is usually a nominated local consultant for local trainees conducting their annual appraisal. In both cases, (ARCP meeting or appraisal meeting), evidence gathered over the past academic year is reviewed and new goals are set.

The only study in the literature concerned with Ophthalmology WbAs in the UK is the one by Tsagkataki & Choudhary, (2013), which evaluated trainee views on the surgical WbAs called "Objective assessment of surgical and technical skills" (OSAT). The authors found that the primary challenges faced during the assessment process were related to limited time and the availability of assessors. Additional difficulties included selecting suitable cases, having enough time to complete them, and the stress associated with the assessment. Among the most valued elements of OSATs were the enhancement of surgical skills and the opportunity for reflective learning through feedback. Trainees particularly appreciated being observed by experts and receiving constructive feedback. However, most senior trainees, more so than junior ones, reported insufficient time for feedback, and nearly half experienced stress during the assessment process. Furthermore, in that study 43% of the trainees felt that OSATS did not help them enhance their surgical skills and was thought of as 'a tick-box exercise'. Some trainees also felt that their feedback was unhelpful with only a small minority of residents believing these surgical WbAs were useful for their ARCP assessments. Suggestions made for improving the assessment process were, incorporating assessment responsibilities into consultant job plans, identifying appropriate cases before surgery and setting aside time after surgical cases to complete necessary assessments. These changes would certainly in my opinion address the problems identified by the interviewees.

This study's findings bear an uncanny resemblance to my own findings. Through the interviewees I conducted the emerging theme was that of the current system (of recording progression) is inadequate and may not be devised in a way that seamlessly captures the resident's progression. Residents often have to "chase" the mandatory sign offs to meet deadlines in their training with time to do so being limited and the consultants that need to sign them off are often busy. Furthermore, although practical skills are easily tracked and proof can be collected, theoretical knowledge gained

through self-learning and exposure to various clinical situations may be harder to track as WbAs are generally more skills oriented. It is also interesting to see that a senior resident in my study described appraisals as a 'tick-box exercise' which are the exact words trainees in the study by Tsagkataki and Choudhary used. In my opinion, if appraisals needed to be based less on mandatory WbAs, were less strict in format that would allow residents and appraisers to have honest conversations about how progression is being achieved without needing to abide by some strict forms. This method perhaps would feel less like a 'tick-box exercise'. My idea would be replacing the WbAs with more reflections on activities and competencies achieved allowing residents to express their feelings and thoughts more freely. Of course, a pilot scheme would need to be set out and a qualitative comparative study performed, comparing the new scheme with the old, allowing to validate with real data what works best.

Feedback viewed as 'constructive' and positive was sought after by residents especially as it could form valuable actionable characteristics that the residents could follow to enhance their skills and knowledge as well as provide a motivating force to self-improvement.

Shafian et al., (2024), conducted a study exploring how medical residents experience feedback during their training. Feedback was found to be vital in helping residents recognise their strengths and weaknesses, refine their clinical skills, and meet competency requirements. Despite its importance, a disconnect often existed between the quality of feedback residents anticipated and what they actually received. Most residents perceived feedback as a valuable tool for enhancing clinical skills, professional conduct, and academic motivation, reflecting its central role in their development.

The study revealed that only 25.6% of residents felt they consistently received feedback on their clinical performance, indicating a significant shortfall in feedback frequency. Fewer than 40% believed feedback was delivered at appropriate times or in suitable settings. Additionally, only 30% thought faculty members dedicated enough time to understand them and offer meaningful feedback. These shortcomings were largely attributed to time constraints and the absence of proper feedback settings, which were compounded by heavy clinical workloads and tight schedules, such findings were also emphasised in the studies of Kieu et al., (2015) and O'Malley et al., (1999), discussed in an earlier part of my discussion.

Medical education experts, Lee & Chiu, (2022), emphasise that timely feedback, given soon after an observed performance, is most effective. Delayed feedback can diminish its usefulness, as both learners and educators may struggle to recall specific details of the performance. This aspect was also highlighted in my interviewees' comments.

Continuing with the study by Shafian et al., (2024) it also found that just about 32% of residents believed faculty had adequate skills to deliver effective feedback. It argued that given that peer-to-peer feedback forms a substantial part of daily training, equipping residents with feedback skills and encouraging peer observations could significantly enhance both the quality and amount of feedback exchanged. Another important finding highlighted how negative emotional language in feedback could shift recipients' focus from constructive learning to emotional reaction. As a result, feedback should be delivered with sensitivity to emotional tone, as this influences learners' attention and performance. Strategies like the sandwich method, the Pendleton model, and fostering positive educator-learner relationships can help mitigate the emotional impact of negative feedback and promote more receptive responses.

Overall, the study identified key barriers to feedback-seeking in clinical setting, the lack of a feedback-seeking culture, limited time commitment from faculty, and fear of residents for negative feedback.

Similarly, a study by Delva et al., (2013), identified four key factors influencing residents' willingness to seek feedback namely, learning and workplace culture, interpersonal relationships, the purpose and quality of feedback, and emotional reactions. They recommended improving feedback-seeking behaviour by enhancing the educational environment through continuous learning experiences, structured feedback mechanisms, clear expectations, psychological safety, and allocating enough time for observation and discussion. Residents widely agreed that feedback should be a routine aspect of both their learning and clinical practice.

Based on the available literature as well as my own study's interviews 'feedback culture' in a work environment plays a vital role in the enhancement of trainee's experiences and learning. Furthermore, in my opinion, using educational courses to train consultants how to give effective feedback should be a mandatory requirement for any residency program.

4.3 Teaching, exams and courses

Apart from learning in the clinical setting of outpatient clinics and surgical theatres, residents can gain experience and knowledge through studying for residency exams, participating in mandatory teaching organised by their employers and attending skill courses and use of surgical simulators.

When it comes to formal teaching, the only conclusion I could draw from the interviews of my study is that residents who hold a NTN and are able to attend weekly deanery organised teaching have positive experiences as opposed to locally employed doctors who have to resort to teaching themselves as their hospital do not take the initiative to organise regular formal departmental teaching. Owing to the limitation of small sample,

it would be difficult to generalise the results and thus I would resort to just make this sole observation.

Regarding the use of simulators, the interviewees opinions mirrored that of the available literature, with the residents noting that the "eyesi" was useful early in their careers but seemed obsolete later on as they advanced. Studies by Ferris et al., (2020) as well as by Ahmed et al., (2020), demonstrated that centres that have adopted the use of "eyesi" simulators in the curricula of their first and second year ophthalmology residents have seen significant reductions in the surgical complication rates and an acceleration of surgical competency attainment by their trainees. Once the residents gain enough surgical experience in real-life settings (i.e. operating on patients), the use of the "eyesi" simulator can become inessential, however. Surgical simulators are thought of as a valuable education adjunct especially in the early stages of a surgeon's career but certainly cannot replace the real-life experience of operating on patients, at least for now (Wehbe-Janek et al., 2012). In the future, with the advancement of virtual reality technology it is possible that simulators reach a level of comparison similar to operating on human tissues.

Finally, when asked about residency exams, due to the small sample size of my study, the interviewees selected happened to have taken only the first residency exam, (FRCOphth part 1) thus only information about that particular exam was given. Residents noted that due to the nature of the exam -including only basic sciences surrounding ophthalmology such as histology, anatomy, pharmacology, embryology and optics- its use in their day-to-day work is very limited. However, as one resident mentioned passing one of the most difficult residency exams in the UK (Sim, 2018) can give a sense of personal achievement and gratification that can work as a confidence boost for residents to use in their clinical learning experiences.

My opinion is that all the current formal examinations serve a purpose, and although Part 1's nature is more theoretical, it is nevertheless important for the building of strong foundations for a structured knowledge in ophthalmology. In other words, one needs to understand the basic science before moving into clinical knowledge.

4.4 Strengths & Limitations and what could have been

My study has several strengths and limitations. In terms of strengths, by using a phenomenological approach I was able to delve into the true lived experiences of the participants, uncovering how the interviewees perceive as well as navigate around the learning experiences of their residency. As opposed to other qualitative research methods I was able to able to develop an in-depth understanding with my participants of their educational experience from my interviews, presenting it often unchanged and due to the use of an interpretive method of phenomenology I was able to use my knowledge

of the field of study to provide context and make the study more understandable to readers that have no prior knowledge of the content of what is being studied. Another strength was the length and setting of the interviews. Thanks to the phenomenological approach, allowing the free-flowing conversation to last about 45 minutes on average, the candidates were able to disclose as much information as they wished without feeling pressured by time or a rigid method of questioning. Furthermore, the question selection and their formulation were able to cover a variety of different aspects of the residents' experiences and not just a specific topic or setting like other studies do (such as just focusing on feedback or only on learning in surgery etc.). Finally, to establish trustworthiness in my results, I adhered to the four core criteria of qualitative research, namely ensuring credibility, transferability, dependability, confirmability of my findings.

My study however is not free of limitations. Firstly, the number of participants was not that large, with only six interviewees taking part. Although I was able to find participants of various grades, the low number of residents did mean that certain grades such as year four and year five residents not being included in my study.

Two inherited limitations that come with any phenomenological study are response bias due to the self-reported nature of the data being collected and recall bias due to the retrospective nature of the study. Furthermore, as the selection of candidates was done via personal connections there is certainly an element of subconscious selection bias, although I abided by strict selection criteria and tried to vary the participants selection by choosing as many different grades and places of work as possible.

While conducting the analysis of my data and writing the manuscript a few things that I could have designed and acted on differently during data collection, have come to mind. Although I view the semi-formal free flowing nature of the interviewees as an advantage as discussed above, I would have perhaps preferred to steer the conversation more towards my agenda of objectives when the interviewees were roaming towards paths that were not the focus of the study – so in essence having been more strict with the format of the interviews could have helped extract more data from the topics being investigated. Finally, after reading through and analysing my data it was very evident the enormous impact the faculty (educators such as other colleagues and consultants) have on the residents' learning activities and outcomes. After conducting the literature search, I noticed that many other similar studies on residents' experiences were able to interview faculty members and inspect the subject being studied from their point of view as well. If I would have re-performed by study, I would have either interviewed or at the very least sent questionnaires to consultants taking part in residents' education to pair their views and experiences with these of the residents. It nevertheless could be part of future research projects. Further ideas for future research are expressed on the next subsection.

4.5 Future research

In the future it would be interesting to see comparative studies looking into other schools of ophthalmology residency from other countries around the world. Furthermore, in ophthalmology once a resident completes the basic residency it is very common to seek further training, in the form of fellowships where essentially the resident focuses more on the sub-specialty they have chosen to follow. In the UK, these fellowships are offered on a local level (similarly to the local ophthalmic trainees) by most hospitals. The viewpoint of fellows participating in fellowship programs could open more doors for further research. Further studies could include qualitative research into the experiences of fellows based on different subspecialties, hospitals or regions. Moreover, taking into account that many fellows are international doctors that have completed their residency in their respective countries this introduces the opportunity to evaluate the way ophthalmology is thought in their countries to how it is in the UK as they would be the perfect candidates, possessing the information and real life experiences from both, allowing researchers to draw useful comparisons and propose improvements.

Furthermore, another aspect that future research could focus on, are the differences in training opportunities and learning experiences between 'locally employed doctors' and 'deanery trainees'. The inherit differences that come with their statuses and technical aspects of their training, such as support from the Royal college and their deaneries for the latter or more location stability and continuity in the same hospital for the former, create different training paths for residents. An analysis of such comparison was beyond the scope of my own research project, but it is something future research studies could investigate and propose changes to improve the training of the respective residents.

Finally, in both my own research as well as in the studies included in the literature review, most participants found authentic learning environments to be particularly useful in learning the required competencies, over things like simulation or formal courses. This means that a study regarding an educational theory such as Kolb's experiential learning theory (drawing on work by Dewey, Kewin, Piaget) and how this could be tailored to Ophthalmology residency could be feasible. Such study could explore and provide examples of practical implications of Kolb's learning environments, that could be a useful learning and application tool for residency planners, educators and learners in postgraduate Ophthalmology education (Kaufman, 2018).

5. CONCLUSION

This study used an interpretive phenomenological approach to capture and investigate the experiences, thoughts and aspirations of ophthalmology residents working in the

Northwest of England. It underlines the paramount importance residents place on the interactions with their consultants in both the outpatient clinic as well as surgical theatre settings as what mostly shapes their learning outcomes. Educators who are well organised with their work and confident in performing surgical tasks were seen as capable of transmitting knowledge to their trainees. Apart from the important role educators play, the residents also disclosed how the work setting they find themselves in is crucial for their learning, namely adequately structured theatre lists and clinics that do not overrun and that are designed to be able to accommodate teaching. Finally, regardless of the recent alterations in the Royal college of Ophthalmology's curriculum, the assessment methods used are still widely viewed as inadequate and most residents are asking for changes to be made.

All in all, qualitative research studies in Ophthalmology postgraduate education are lacking and this study emphasises how a phenomenological approach can reveal a lot of useful data that can be used by the appropriate educational boards in the field to improve the service in terms of teaching methods, teaching cultures, assessments and curricula. It is evident that there is a lot of potential for further studies to take place, both in terms of comparative studies to other education methods from other countries as well as different stages of postgraduate ophthalmology education such as fellowships.

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7. APPENDIX

DEPARTMENT OF EDUCATION

Primary researcher: Panos Tsoutsanis, MSc student in Medical education
Oxford University e-mail: panagiotis.tsoutsanis@reuben.ox.ac.uk
Supervisor: Danica Sims, Thesis Supervisor
Oxford university e-mail: danica.sims@education.ox.ac.uk

Consent to take part in "A phenomenological study on the experiences of Ophthalmology Resident doctors in the Northwest of England"

	Please initial each box if you agree with the statement
I confirm that I have read and understand the verbal information given for the above research. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
I understand that my participation is voluntary and that I am free to withdraw at any point until March/2025 without giving any reason.	
I understand who will have access to personal data provided, how the data will be stored and what will happen to the data at the end of the project.	
I understand that I will not be identifiable from any publications.	
I consent to being video/audio recorded.	
Use of quotations: Please indicate your preference (select *one* option): a) I do not wish to be quoted. **or** b) I agree to the use of quotations in research outputs if I am not identifiable.	
I understand how to raise a concern or make a complaint.	
I agree to take part.[1]	

Written consent form, version 2.0, November 2024

DEPARTMENT OF EDUCATION

[Primary researcher: Panos Tsoutsanis, MSc student in Medical education

Oxford University e-mail: panagiotis.tsoutsanis@reuben.ox.ac.uk

UNIVERSITY OF OXFORD

"A phenomenological study on the experiences of Ophthalmology Resident doctors in the Northwest of England"

PARTICIPANT INFORMATION SHEET

Central University Research Ethics Committee Approval Reference:

1. Introductory paragraph

You are being invited to take part in a research project. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part.

2. Why is this research being conducted?

To investigate the experiences in training of Ophthalmology residents (junior doctors) in the Northwest of England area using a phenomenological research method

3. Why have I been invited to take part?

You have been selected to take part as a Junior doctor in ophthalmology working in the Northwest of England.

4. Do I have to take part?

No. It is up to you to decide whether to take part. You can withdraw yourself from the research, without giving a reason. The deadline by which you can withdraw any information you have contributed to the research is 31/3/2025. Any data collected prior to your decision to withdraw will be destroyed.

5. What will happen to me if I take part in the research?

An informed consent form (PDF file) will be sent to you to read, fill in and sign electronically or by printing it off and then scanning it.
An interview date/time will be arranged.
Prior to the interview I will inform you what topics will be covered.
An interview via MS teams will be conducted, and will last about 45mins. The interview will be video/audio recorded, in order to be transcribed. The data will be stored safely and transcripts will be retained at the end of the project for 3 years.
All data will be pseudonymised (common identifiers removed and randomly allocated number used instead). The only people that will have access to the data will be the person conducting the interview (primary researcher) as well as the supervisor of the project.

Once the interview is conducted no further meetings will need to take place.
You can ask to stop participating at any time.

6. **Are there any benefits in taking part?**

While there are no immediate benefits for those people participating in the research, it is hoped that this research will lead to investigating patterns of flaws/drawbacks in the education of ophthalmology residents and could potentially help improve it, if information is shared with the relevant committees determining how education in this area is taking place (e.g North west deanery).

7. **What information will be collected and why is the collection of this information relevant for achieving the research objectives?**

I am interested in your experiences in clinical (outpatient) and surgical/procedural (surgeries/laser etc.) settings. Experiences on the non-formal teaching you receive from your consultants/fellow senior colleagues in these settings, information on what could be improved in your opinion, information on what circumstances allowed you to learn more or less etc. The information you provide will help me better understand/find patterns in the training process of ophthalmology residents/junior doctors in order to answer my research question.
No special category data will be collected. All data collected via MS teams (secure university account) will be pseudonymised, stored locally and destroyed immediately after analysis.

Only the primary researcher will have access to the raw research data.

8. **Will the research be published? Could I be identified from any publications or other research outputs?**

The findings from the research will be written up in my thesis for the MSc in Medical education which will be deposited in ORA and thus will be publicly available. If significant results are found the data may also be included in any publications to peer-reviewed research journals. Participants will not be identifiable from any outputs.

9. **Data Protection**

The University of Oxford is the data controller with respect to your personal data, and as such will determine how your personal data is used in the research. The University will process your personal data for the purpose of the research outlined above. Research is a task that is performed in the public interest. Further information about your rights with respect to your personal data is available from the University's Information Compliance website at https://compliance.admin.ox.ac.uk/individual-rights.

10. **Who has reviewed this research?**

This research has received ethics approval from a subcommittee of the University of Oxford Central University Research Ethics Committee. (Ethics reference: **xxxxx)**.

11. **Who do I contact if I have a concern about the research or I wish to complain?**

If you have a concern about any aspect of this research, please contact Panos Tsoutsanis on panagiotis.tsoutsanis@reuben.ox.ac.uk , and I will do my best to answer your query. I will acknowledge your concern within 10 working days and give you an indication of how it will be dealt with. If you remain unhappy or wish to make a formal complaint, please contact the University of Oxford Research Governance, Ethics & Assurance (RGEA) team at rgea.complaints@admin.ox.ac.uk or on +44 (0)1865 616480.

12. Further Information and Contact Details

If you would like to discuss the research with someone beforehand (or if you have questions afterwards), please contact:

Panos Tsoutsanis

Department of education, University of Oxford.

panagiotis.tsoutsanis@reuben.ox.ac.uk

Interview questions/guide

- In what ways do you receive training and education in your current and previous workplaces in Ophthalmology.
- How do your supervisors and colleagues contribute to your ongoing education and professional development? Can you provide examples of support you received?
- Can you share some examples of informal clinical education is provided by your senior colleagues?
- How do you feel formal teaching (teaching days/sessions) organised by your Deanery or department (if locally employed) prepares you (or underprepares you) for real-world challenges you encounter on the job? Are there areas (clinical/practical skills) where you feel more training is needed?
- Can you share some situations/experiences from the outpatient clinic setting where you felt training was inadequate and why?
- Can you share some situations/experiences from the operating theatre where you felt training was inadequate and why?
- Based on your experiences in Ophthalmology operating theatres, how and to what extent do stressful situations shape/affect the level of training you get? Do you have any experiences that have affected you more than others and why?
- Can you share some situations/experiences from any of your Ophthalmology places of work, where staff not directly involved in your training might have enhanced or hindered your learning?
- Do you think the current ways of assessment of your knowledge/progress (e.g portfolio, surgical logbook, appraisals) really mirrors reality/helps capture the real picture? (Only applicable if in a non-training post: are there any ways/processes in place to capture your progress as an Ophthalmology resident?)
- What role do feedback and assessments play in your learning process as a junior doctor? How do they impact your confidence and performance?
- To what extent have training courses or use of simulators have helped you enhance your learning? To what extent have they affected your confidence as an Ophthalmology doctor as well as knowledge/skills?
- To what extent studying for formal examinations (e.g RCOphth exams) have helped you enhance your learning? To what extent have they affected your confidence as an Ophthalmology doctor as well as knowledge/skills?
- Looking back at your Ophthalmology training up until this point, is there anything you wish had been emphasised more, or any particular skills you believe are crucial for success in your current role?

Interview guide

Education (Educ) DREC
15 Norham Gardens, Oxford, OX2 6PY

Applicant: Panagiotis Tsoutsanis
Principal Investigator: Danica Sims
Department: Education

Study title: A phenomenological study on the experiences of Ophthalmology Residents in the Northwest of England
(Version: 1.0)

Ethics reference: Education (Educ) DREC - 747760

Dear Danica Sims,

On behalf of the Committee, I confirm that the above research study described in the application and other supporting documentation submitted to the committee has been carefully considered on behalf of the Education (Educ) DREC in accordance with the University's regulations and policy for ethics approval of research involving human participants, human tissue and/or personal data. The opinion is as follows:

Opinion of Research Ethics Committee: Complete

Subject to the following conditions:

Decision Date: 29 Nov 2024, 23:22

Opinion End Date: 29 May 2026

If favourable, insurance-provided indemnity arrangements will be in place between the decision date and opinion end date and you may now commence your study activities. Should you plan to continue the research beyond the end date above, it is your responsibility to ensure that you request, and receive, an extension (via amendment) from the committee for indemnity to remain in place. You may be required to provide a justification.

Please note the following:

Amendments: Should there be any subsequent changes to the reviewed study, applications for amendments can be made via the Oxford Ethics Application System (Worktribe Ethics).

Reports: Studies considered by OxTREC are expected to submit an *annual progress report* on each anniversary of study approval, until the study is completed. An end of study report is also required.

Audit: This study may be selected for audit at the discretion of the Research Governance, Ethics and Assurance Team.

Data safety: It is the responsibility of the PI to ensure that all data collected during the course of the study is stored and transferred safely and securely in accordance with University requirements. Further guidance and advice are available from the Research Data Team. Additional information is