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Protocol for a qualitative research study to explore the understanding and experiences of generational diversity amongst post-graduate doctors in training in the National Health Service.

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Complete List of Authors:	Boissaud-Cooke, Matthew; University Hospitals Plymouth NHS Trust, South West Neurosurgery Centre Yatham, Swetha; University Hospitals Plymouth NHS Trust, Department of Radiology Hardy, Louise; University of Plymouth Higginson, Ian; University Hospitals Plymouth NHS Trust, Emergency Department Thurlow, Jane; NHS England, NHS England - South West Schofield, Patricia; University of Plymouth, School of Nursing & Midwifery
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Protocol for a qualitative research study to explore the understanding and experiences of generational diversity amongst post-graduate doctors in training in the National Health Service.

Authors and affiliations:

- Mr Matthew A Boissaud-Cooke
  - Qualifications: BMedSc (Hons), MB ChB (Hons), MRCS, PGCert (HMLI, Dist)
  - Email: matthew.boissaud-cooke@nhs.net
  - Address: University Hospitals Plymouth NHS Trust, Crownhill, Plymouth, PL6 8DH
- Dr Swetha Yatham
  - Qualifications: BSc, MBBS, PGCert (Clinical Education, Dist)
  - Email: s.yatham@nhs.net
  - Address: University Hospitals Plymouth NHS Trust, Crownhill, Plymouth, PL6 8DH
- Mrs Louise Hardy
  - Qualifications: BA, PGCert (Managing Health Services), PGCert (Clinical Education), MSc (Managing Learning and Change)
  - Email: louise.hardy@plymouth.ac.uk
  - Address: Peninsula Medical School, University of Plymouth, PL6 8BU
- Dr Ian Higginson MSc, FACEM, FRCEM
  - Email: ianhigginson@nhs.net
  - Address: University Hospitals Plymouth NHS Trust, Crownhill, Plymouth, PL6 8DH
- Dr Jane Thurlow
  - Qualifications: MB ChB, FRCA
  - Email: jane.thurlow@nhs.net
  - Address: Plumer House, Tailyour Road, Plymouth, PL6 5HY
- Professor Pat Schofield
  - Qualifications: Registered General Nurse (RGN), Diploma in Nursing, PhD, PGDip Education, Honorary Diploma in Pain Medicine
  - Email: patricia.schofield@plymouth.ac.uk
  - Address: School of Nursing and Midwifery, University of Plymouth, PL4 8AA

Corresponding author: Matthew Alexander Boissaud-Cooke
South West Neurosurgery Centre
Derriford Hospital, University Hospitals Plymouth NHS Trust
Crownhill Road, Plymouth, Devon, United Kingdom
PL6 8DH
Email: matthew.boissaud-cooke@nhs.net
Telephone: 01752 437339

Key words: Generational diversity, generational gap, intergenerational differences, organisational culture

Abstract

Introduction: The concept of generations and generational diversity in the workplace is a widely discussed phenomenon in popular culture, organisational articles and research studies. A number of non-medical and medical organisations have attempted to identify generational differences amongst their workforces and devise solutions to overcome this. The impact of generational differences amongst the medical workforce, specifically postgraduate doctors-in-training (PGDiTs), in the National Health Service (NHS) has not been studied.

Method and analysis: This qualitative research study will use a pragmatic study methodology to explore and understand the concept, perceptions, experiences and sources of generational diversity amongst PGDiTs working in the NHS. Six focus groups will be conducted with PGDiTs recruited from a single acute NHS Trust. Participants will be stratified according to their generation (i.e. generation X, Y or Z). Two focus groups will be conducted for each generation. If insufficient participants are recruited for a focus group, then one-to-one interviews will be offered. The data from the focus groups and one-to-one interviews will be analysed using an inductive thematic analysis approach using NVivo software.

Ethics and dissemination: This study has received approval from the Health Research Authority and Care Research Wales (REC reference: 24/HRA/0770). Ethics committee approval is not required as the study involves NHS staff as research participants. The findings from this study will report a number of higher level themes reflecting the views and experiences of the research participants. The findings will be disseminated via academic conferences and peer-reviewed publications.

ClinicalTrials.gov ID: NCT06446297

Strength and limitations of this study:

- Studying generational diversity amongst doctors in the National Health Service is novel and has not been investigated before. It may provide innovative insights into how post-graduate doctors-in-training experience generational differences and its impact on their workplace.
- A key strength of this study is analysing and reviewing the perspectives of multiple generations of post-graduate doctors-in-training and using focus groups and interviews to explore and understanding their experiences in more detail.
- Findings may be limited by the small sample size of this study and limitation imposed from purposive, convenience and snowball sampling and the self-selecting healthcare professionals who volunteer to take part in the study.
- Although this study will provide rich and important data into the experiences of generational diversity in the NHS, generalising these findings to other regions of the UK and other countries may not be possible.

Introduction

The concept of generations and generational diversity (intergenerational differences, generational gap) is a widely discussed phenomenon in popular culture, organisational articles and research studies. The turn of the 21st Century and the entrance of newer generations into the workforce brings into focus the impact of generational diversity and the need to identify solutions for maximising collaboration in the workforce (1). A positive organisational culture is associated with operational performance and success (2). Within healthcare, organisational culture is linked to clinically- and staff-related outcomes, the latter including staff retention and performance (3,4).

The total number of doctors in the United Kingdom is increasing (5), with post-graduate doctors in training (PGDiTs) making up 24.6% of the medical workforce. The PGDiT cohort currently spans three generations (Generation X, Generation Y (Millennials) and Generation Z (iGen, Gen Z, Zoomers)) across a breadth of ages ranging from a 23-year-old newly qualified Foundation Year 1 doctor to a Senior Registrar in their late 30s with up to 10-14 years of post-graduate training. These three generations closely interact with consultants, S/AS doctors and GPs that are predominantly Baby Boomers, Generation X and slowly rising numbers of Generation Y.

The last two decades have witnessed numerous changes to PGDiTs, from the introduction of Modernising Medical Careers and the introduction of the European Working Time Directive, changes in workforce terms and conditions and numerous rounds of industrial action. Concerns have also been raised on the declining proportion of PGDiTs directly entering specialty training from foundation training (6). The recently released NHS Long Term Workforce Plan acknowledges the importance of generational differences throughout a variety of themes: attracting staff, staff retention, flexible working and workforce education and training (7). Despite this and to the best of our knowledge, there has not been any research investigating the existence or impact of generational diversity in the workplace amongst doctors in the NHS.

Within the NHS, only one study has been conducted on generational differences amongst healthcare professionals. The Mind the Gap report was published by Health Education England in 2015 to investigate the requirements of early career midwives and nurses using an actional research framework (8). This identified a number of needs and expectations of this cohort in the workplace and generated a number of recommendations targeted at employers to improve staff recruitment and retention.

A qualitative research study in Switzerland interviewed resident and attending doctors, identifying differences in demands for communication style and information, feedback and

leadership communication (9). Further work by this group, identified that the tone of communication, information quality and provision of feedback positively influenced the job satisfaction of all generations of physicians, with a greater impact on younger generations (10). A recent study in the United States of America explored generational communication amongst physicians in the Emergency Department with 70% of its respondents reporting observing conflicts due to differences in generational communication (11). Seven common themes of conflict were identified with perceived differences in: work ethic, treatment approach, technology application, entitlement, professionalism, work life balance and communication style. A number of strategies were generated by the respondents focussing on clarity of policies, training and communication practices to mitigate against conflict and maximise effectiveness (11).

Aims and Objectives

Given the lack of dedicated primary research on generational diversity within the medical profession of the NHS and increasing concerns relating to training and retention, this study aims to explore and understand the concept, perceptions, experiences and sources of generational diversity amongst post-graduate doctors (PGDiTs) working within a single acute hospital NHS Trust.

Methods and analysis

Study design

This is a qualitative research study. The study methodology supporting our study design is pragmatic with components of grounded theory and interpretative phenomenological analysis (IPA). Grounded theory provides an inductive and iterative approach to generating new themes from the data, particularly when little is known about a topic or phenomenon (12). The philosophical approach provided by IPA is used to explore peoples' lived experiences of the world around them and to make sense of what is occurring to them, fitting within our aims of exploring and understanding PGDiTs experiences of generational diversity in the workplace (13).

Study Setting and Eligibility Criteria

This is a single centre study based at an acute hospital NHS Trust in the South of England. The following criteria must all be met for a participant to be included in the study: (i) any medically qualified healthcare professional with a GMC registration number, (ii) working in a recognised training programme in a specific acute hospital NHS Trust in the South of England, (iii) currently based at that specific hospital, and (iv) consents to being interviewed and recorded for the purposes of the study.

The nomenclature that refers to non-consultant or GP grade doctors is confusing and has recently been altered from Junior Doctor to Resident Doctors (14). The term Resident Doctors refers to all locally employed doctors and post-graduate doctors in training (PGDiTs). This research study is specifically recruiting PGDiTs as they have a clear relationship with their superiors within their training programme.

Data Collection

Focus groups will be used to explore participants experiences and understanding of generational diversity through the sharing of experiences and personal anecdotes (15). The concept of a generation is defined by shared values and experiences (16,17) and the use of focus group will facilitate an in-depth exploration and clarification of views and attitudes through social interaction.

Participants will be stratified according to their generation based on generational definitions with a view to conduct a total of six focus groups. Two focus groups will be performed for each of the three different generation (Generation X, Y and Z). This will give a total sample size ranging from 16 to 36 participants. We aim to achieve data saturation with this number of participants and discussions which is supported by the literature (18).

Each focus group will consist of three to six participants. Focus groups will be conducted face-to-face on the acute hospital NHS Trust premises at a mutually convenient time for the participants. Each focus group will be electronically audio-recorded and led and moderated by the lead member of the research team (MBC). All participants will be provided with a participant information sheet and will be asked to complete and sign an informed consent form prior to starting the study.

If there are insufficient participants recruited to conduct a focus group (minimum three participants) then semi-structured interviews will be offered to the participants as an alternative option. Every effort will be made to conduct focus groups; however, one-to-one interviews are also frequently used in qualitative research (19). If a one-to-one interview is performed, same approach to the focus group will be applied to the conduct of one-to-one interviews. Furthermore, if a mutually agreeable time or location is unable to be identified for the participants, then virtual focus groups or interviews will be offered.

An interview schedule will be developed for the focus groups and interviews. The interview schedule is to guide the discussions yet will remain flexible and amenable to change as data collection continues (20). Reflective notes will be made throughout the interviews by the moderator.

Recruitment and Sampling

The primary method of sampling will be purposive. Email communication will be used via dedicated email distribution lists exist to contact all relevant medical professionals. This initial email communication will contain an electronic copy of the participant information sheet and informed consent form. Potential participants will be invited to respond if they are interested and meet the pre-determined eligibility criteria. If a potential participant would like to take part in the study, the research team will provide an opportunity for questions about the study. At this point, the research team will require the date of birth of the participant to allow generational stratification. The participants will then be provided with a variety of dates and times for a focus group or interview.

If purposive sampling fails to achieve sufficient recruitment of potential participants, then non-probability forms of sampling will be employed to achieve further recruitment, specifically convenience and snowball sampling. This may be by word of mouth or by email. With snowball sampling, the study participants will be strongly informed not to provide any details of potential participants to the research team to avoid the disclosure of any personal information.

Data Analysis

All electronically audio-recorded data will be fully transcribed verbatim. Transcripts will be anonymised, de-identified and checked in comparison to the original audio-recording prior to being uploading into qualitative data analysis software (NVivo, Version 14.0, Lumivero, Denver, USA).

Inductive thematic analysis will be used to analyse the data, with an initial familiarisation with the dataset prior to the generation of initial codes from transcripts (21). A discussion will occur between the researchers to identify coding consistencies and discrepancies. Initial codes will be inductively collated into potential various themes, with ongoing refinement of the themes into higher level themes and categories that will enable conclusions and potential recommendations to be generated.

Respondent validation will be performed after each focus group or interview and after the final data analysis to check the accuracy of the transcriptions and whether the conclusions of the research team are consistent with the experiences of the participants (22). Respondent validation is not mandatory and the participant can chose to opt-out of this process. The main researcher (MBC) will employ prospective reflexivity to reduce the impact of bias during the research process, data collection and analysis (23,24). The Standards for Reporting Qualitative Research (SRQR) and Consolidated criteria for Reporting Qualitative Research (COREQ) checklists will be employed for reporting the research study (25,26).

Limitations

There are numerous limitations encountered within this study. This study will be conducted in a single hospital with its own regional characteristics and differences in comparison to other regions. This may result in differences experiences and perspectives compared to other contemporaries in other hospitals and regions. The small nature of the study will also limit the generalisability of the study findings to the wider population. We anticipate difficulty in recruiting participants from Generation X as there are likely to be fewer individuals of this age working as PGDiTs.

Trainers and locally employed doctors have not been included in this study. However, further research could be conducted amongst these cohorts to capture a broader range of perspectives. A number of biases are also likely to be encountered including recall bias (i.e. incorrect or inaccurate recollection of experiences and events) and a selection bias of those wanting to be included within the study.

Patient and public involvement

There was no patient or public involvement in the development of the protocol. A number of PGDiTs reviewed and contributed to the development of the initial participant invitation email.

Ethics and Dissemination

Approval from the Health Research Authority and Health and Care Research Wales has been obtained (REC reference: 24/HRA/0770). Ethics Committee approval was not required as the study only involves NHS members of staff as participants. All potential participants will be provided with a participant information sheet. Informed consent will be obtained from all participants prior to participating in the research study. Written informed consent will be obtained from face-to-face interviews and focus groups or electronically completed consent forms will be completed from video interviews. All focus groups and semi-structured interviews will be conducted at a time and place that is convenient to the participants. Participants will be reminded of their right to withdraw from the study without there being any negative consequences on their work or training. The importance of anonymity and confidentiality will be highlighted to participants and must be maintained during and after their participation within the research study.

All data will be handled following the UK Data Protection Act (2018), the Research Governance Framework for Health and Social Care and the General Data Protection Regulations (2018). Written informed consent forms will be stored in a locked cabinet in a locked office available to the Chief Investigator (MBC). An encrypted electronic audio-recorder will be used to record the interviews and focus groups. Recordings will be removed from the portable device permanently as soon as they are transferred. The transcribing will be performed by the Chief Investigator (MBC). Interview transcripts will be pseudonymised and any personal information will be removed from the data prior to the data analysis. Participants will only be identified using a study identification number. Pseudonymised data and the study identification log will be stored in two separate access-restricted folders. Access to the data will be restricted to the research team only. The final study report will be circulated to all participants that have consented to receive the report and circulated to all relevant stakeholders. The findings of the study will be reported through relevant academic conferences and peer-reviewed publications.

Footnotes

Contributors: MBC is the chief investigator for this project. MBC developed the original idea for the project, further developed by JT, IH, LH, SY and PS. MBC drafted the first version of the protocol with critical revisions by JT, IH, LH, SY and PS, alongside giving approval for submission of the manuscript.

Competing interests: None declared.

Funding: MBC has conducted this study within his position as an NHS England Southwest Leadership Fellow. During this time, MBC has been on secondment to NHS England Southwest. The views expressed in this publication are those of the author(s) and not necessarily those of the NHS, NHS England, NHS England South West.

Ethics approval: Not required. The research study involves NHS staff as research participants. Refer to the Ethics and Dissemination section for further detail.

Provenance and peer review: External peer review was conducted by two independent reviewers that were not involved in the development of the study idea or protocol.

References

1. Statnickė G. An expression of different generations in an organization: a systematic literature review. SOCIETY INTEGRATION EDUCATION Proceedings of the International Scientific Conference. 2019 May 21;5(0):273–91.

2. Shahzad F, Luqman RA, Khan AR, Shabbir L. Impact of organizational culture on organizational performance: An overview. Interdisciplinary Journal of Contemporary Research in Business. 2012;3(9):975–85.

3. Braithwaite J, Herkes J, Ludlow K, Testa L, Lamprell G. Association between organisational and workplace cultures, and patient outcomes: systematic review. BMJ Open. 2017 Nov 8;7(11):e017708.

4. West M, Armit K LL, Eckert R, West T, Lee A. Leadership and leadership development in health care: the evidence base [Internet]. Faculty of Medical Leadership and Management; 2015 Feb [cited 2023 Mar 22]. Available from: https://www.fmlm.ac.uk/resources/leadership-and-leadership-development-in-health-care-the-evidence-base

5. GMC. The state of medical education and practice in the UK: The workforce report [Internet]. General Medical Council; 2022 [cited 2023 May 12]. Available from: https://www.gmc-uk.org/about/what-we-do-and-why/data-and-research/the-state-of-medical-education-and-practice-in-the-uk/workforce-report-2022

6. Moberly T, Stahl-Timmins W. More doctors are taking a break from training after foundation programme. BMJ. 2019 Feb 27;364:l842.

7. NHS England. NHS Long Term Workforce Plan [Internet]. NHS England; 2023 [cited 2023 Jul 5]. Available from: https://www.england.nhs.uk/publication/nhs-long-term-workforce-plan/

8. Jones K, Warren A, Davies A. Mind the Gap. Exploring the needs of early career nurses and midwives in the workplace. Health Education England; 2015.

9. Heuss SC, Zimmerli L, Schneeberger AR. How do physicians from two generations communicate with each other? Cogent Social Sciences. 2022 Dec 31;8(1):2095745.

10. Heuss SC, Datta S. Impact of leadership communication on job satisfaction and well-being of physicians. Discover Global Society. 2023 Oct 10;1(1):11.

11. Guptill M, Reibling E, Phan T, Khoo B, Lin S, Donham C, et al. Working in fours: generational communication in the emergency department. Int J Emerg Med. 2023 Sep 13;16(1):58.

12. Chun Tie Y, Birks M, Francis K. Grounded theory research: A design framework for novice researchers. SAGE Open Med. 2019 Jan 2;7:2050312118822927.

13. Smith JA, Eatough V. Interpretative Phenomenological Analysis. In: Lyons E, editor. Analysing Qualitative Data in Psychology. 2007. p. 35–50.

14. British Medical Association. “Junior” doctors change name to “resident” doctors [Internet]. British Medical Association. 2024 [cited 2024 Nov 15]. Available from: https://www.bma.org.uk/bma-media-centre/junior-doctors-change-name-to-resident-doctors

15. Kitzinger J. Qualitative Research: Introducing Focus Groups. BMJ. 1995 Jul 29;311(7000):299–302.

16. Mannheim K. The problem of generations. Psychoanal Rev [Internet]. 1970; Available from: https://www.pep-web.org/document.php?id=psar.057.0378a

17. Ryder NB. The Cohort as a Concept in the Study of Social Change [Internet]. Vol. 30, American Sociological Review. 1965. p. 843. Available from: http://dx.doi.org/10.2307/2090964

18. Hennink M, Kaiser BN. Sample sizes for saturation in qualitative research: A systematic review of empirical tests. Soc Sci Med. 2022 Jan 1;292(114523):114523.

19. Gill P, Baillie J. Interviews and focus groups in qualitative research: an update for the digital age. Br Dent J [Internet]. 2018 Oct 5; Available from: http://dx.doi.org/10.1038/sj.bdj.2018.815

20. Kallio H, Pietilä A-M, Johnson M, Kangasniemi M. Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. J Adv Nurs. 2016 Dec;72(12):2954–65.

21. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77–101.

22. Birt L, Scott S, Cavers D, Campbell C, Walter F. Member Checking: A Tool to Enhance Trustworthiness or Merely a Nod to Validation? Qual Health Res. 2016 Nov;26(13):1802–11.

23. Olmos-Vega FM, Stalmeijer RE, Varpio L, Kahlke R. A practical guide to reflexivity in qualitative research: AMEE Guide No. 149. Med Teach. 2022 Apr 7;1–11.

24. Berger R. Now I see it, now I don’t: researcher’s position and reflexivity in qualitative research. Qual Res. 2015 Apr;15(2):219–34.

25. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. Int J Qual Health Care. 2007 Sep 14;19(6):349–57.

26. O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: a synthesis of recommendations. Acad Med. 2014 Sep;89(9):1245–51.

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Complete List of Authors:	Boissaud-Cooke, Matthew; University Hospitals Plymouth NHS Trust, South West Neurosurgery Centre Yatham, Swetha; University Hospitals Plymouth NHS Trust, Department of Radiology Hardy, Louise; University of Plymouth Higginson, Ian; University Hospitals Plymouth NHS Trust, Emergency Department Thurlow, Jane; NHS England, NHS England - South West Schofield, Patricia; University of Plymouth, School of Nursing & Midwifery
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Protocol for a Qualitative Study on Generational Diversity Amongst Post-Graduate Doctors in Training in the NHS.

Authors and affiliations:

- Dr Matthew A Boissaud-Cooke
  - Qualifications: BMedSc (Hons), MB ChB (Hons), MRCS, PGCert (HMLI, Dist)
  - Email: matthew.boissaud-cooke@nhs.net
  - Address: University Hospitals Plymouth NHS Trust, Crownhill, Plymouth, PL6 8DH
- Dr Swetha Yatham
  - Qualifications: BSc, MBBS, PGCert (Clinical Education, Dist)
  - Email: s.yatham@nhs.net
  - Address: University Hospitals Plymouth NHS Trust, Crownhill, Plymouth, PL6 8DH
- Mrs Louise Hardy
  - Qualifications: BA, PGCert (Managing Health Services), PGCert (Clinical Education), MSc (Managing Learning and Change)
  - Email: louise.hardy@plymouth.ac.uk
  - Address: Peninsula Medical School, University of Plymouth, PL6 8BU
- Dr Ian Higginson MSc, FACEM, FRCEM
  - Email: ianhigginson@nhs.net
  - Address: University Hospitals Plymouth NHS Trust, Crownhill, Plymouth, PL6 8DH
- Dr Jane Thurlow
  - Qualifications: MB ChB, FRCA
  - Email: jane.thurlow@nhs.net
  - Address: Plumer House, Tailyour Road, Plymouth, PL6 5HY
- Professor Pat Schofield
  - Qualifications: Registered General Nurse (RGN), Diploma in Nursing, PhD, PGDip Education, Honorary Diploma in Pain Medicine
  - Email: patricia.schofield@plymouth.ac.uk
  - Address: School of Nursing and Midwifery, University of Plymouth, PL4 8AA

Corresponding author: Dr Matthew Alexander Boissaud-Cooke
Derriford Hospital, University Hospitals Plymouth NHS Trust
Crownhill Road, Plymouth, Devon, United Kingdom
PL6 8DH
Email: matthew.boissaud-cooke@nhs.net
Telephone: 01752 437339

Key words: intergenerational relations, organizational culture, qualitative research, delivery of healthcare, physicians

Abstract

Introduction: The concept of generations and generational diversity in the workplace is a widely discussed phenomenon in popular culture, organisational articles and research studies. A number of non-medical and medical organisations have attempted to identify generational differences amongst their workforces and devise solutions to overcome this. The impact of generational differences amongst the medical workforce, specifically postgraduate doctors-in-training (PGDiTs), in the National Health Service (NHS) has not been studied.

Method and analysis: This qualitative study will use a pragmatic study methodology with components of grounded theory and interpretative phenomenological analysis to explore and understand the concept, perceptions, experiences and sources of generational diversity amongst PGDiTs working in the NHS. Six focus groups will be conducted with PGDiTs recruited from a single acute NHS Trust. Participants will be stratified according to their generation (i.e. generation X, Y or Z). Two focus groups will be conducted for each generation. If insufficient participants are recruited for a focus group, then one-to-one interviews will be offered. The data from the focus groups and one-to-one interviews will be analysed using an inductive thematic analysis method using NVivo software.

Ethics and dissemination: This study has received approval from the Health Research Authority and Care Research Wales (Reference: 24/HRA/0770). Ethics committee approval is not required as the study involves NHS staff as research participants. The findings from this study will report a number of higher level themes reflecting the views and experiences of the research participants. The findings will be disseminated via academic conferences and peer-reviewed publications.

ClinicalTrials.gov ID: NCT06446297

Strength and limitations of this study:

- The existence and impact of generational diversity amongst post-graduate doctors-in-training in the NHS is unknown.
- A key strength of this study is analysing and reviewing the perspectives of multiple generations of post-graduate doctors-in-training and using focus groups and interviews to explore and understanding their experiences in more detail.
- Findings may be limited by the small sample size of this study and limitation imposed from purposive, convenience and snowball sampling and the self-selecting healthcare professionals who volunteer to take part in the study.
- Although this study will provide rich and important data into the experiences of generational diversity in the NHS, generalising these findings to other regions of the UK and other countries may not be possible.

Introduction

According to Mannheim, generations are shaped by a cohort of individuals sharing distinct social, cultural, political and technological events during their formative years, leading to shared perspectives and characteristics [1]. Generational diversity (intergenerational differences, generation gap) refers to the different attitudes, values, behaviours and expectations of each generational cohort. Workplace interactions between different generations generate varying perceptions of one another lead to stereotyping, preconceptions and tension [2,3]. This can generate conflict which can be considered as "*the process which begins when one party perceives that another has frustrated, or is about to frustrate, some concern of the first part"* [4]. Numerous cultural factors have been demonstrated to contribute to practices conducted within an organisation that promote institutional failure [5], with human factors being a key component of violation-producing conditions of "human error" [6]. It is reasonable to consider that generational diversity within an organisation may impact on organisational culture through differing views impacting of team dynamics, training, working conditions, mentorship and supervision and staff retention.

Scholarly research has attempted to investigate the true nature, sources and impact of generational diversity within organisations with a view to identify strategies to manage these differences. A broad range of methodologically diverse research studies have suggested differences in personality traits, work values and attitudes, communication styles, career patterns, leadership preferences and behaviours and teamwork preferences [7,8]. The true magnitude and importance of generations and generational diversity and its impact in the workplace remains unclear and mixed, yet existing stereotypes held by individuals may still influence perceptions and actions of others resulting in conflict in the workplace [3].

Research on generational diversity amongst doctors has been conducted globally yet these studies predominantly consist of opinion pieces, interviews, surveys and questionnaires. These studies report younger generations desiring greater work-life balance, different work values and priorities [11] and differing interests to certain conditions [12]. A recent study in North America explored "generational communication" amongst physicians in the Emergency Department with 70% of its respondents reporting observing conflicts due to generational differences in communication [12]. Seven themes of conflict were identified with perceived differences in: work ethic, treatment approach, technology application, entitlement, professionalism, work life balance and communication style. A number of strategies were generated by the respondents focussing on clarity of policies, training and communication practices to mitigate against conflict and maximise effectiveness [13].

A qualitative research study conducted in Switzerland interviewed head physicians, resident physicians and attending doctors, stratified into Baby Boomers and Generation Y, respectively. This identified differences in demands for communication style and information, feedback and leadership communication between the two generations [14]. Further work by this group, identified that the tone of communication, information quality and provision of feedback positively influenced the job satisfaction of all generations of physicians, with a greater impact on younger generations [15–18].

Resident doctors within the National Health Service (NHS) face numerous challenges, ranging from difficulty in staff recruitment and retainment, workforce shortages, concerns relating to workforce planning, training conditions and employment terms and conditions, alongside experiencing poor morale and increasing levels of burnout, fatigue and mental health disorders [19]. The exact cause of these challenges is multi-faceted and the existence and impact of generational diversity amongst this cohort is not clear.

The Nuffield Trust's recent analysis of 20 years of NHS staff surveys has reported divergent experiences of working in the NHS between its younger and older members of staff [20]. Yet the systematic investigation of generational diversity in the NHS has been limited, despite the NHS Longterm Workforce Plan acknowledging the use of tailored approaches to staff recruitment and retention across the generations, alongside recognising generational differences of the workforce towards training and flexible working [21].

The Mind the Gap report is the only study that has investigated generational differences in the NHS. This study investigated the requirements of early career (Millennials) midwives and nurses, focusing on their needs and expectations within the workplace. This report takes a further step forward by providing relevant stakeholders with recommendations and an adapted Maslow's hierarchy of workplace needs as a framework to improve recruitment, progression and retention of this cohort [22]. Archer *et al.* identified differing attitudes and preparedness of NHS Doctors' towards revalidation with differences in professional identity originating from generational differences emerging as a contributory theme, although no further analysis was performed on what these differences are and from where they may arise [23],

To the best of our knowledge, no systematic investigation of the existence or impact of generational diversity in the workplace has been conducted amongst doctors in the NHS. Given the unique factors of training pathways and workforce terms and conditions affecting Resident Doctors in the NHS applying lessons learnt from other types of healthcare professional in the NHS is limited. Furthermore, applicability of research into generations and generational differences from one country to another is limited due to each nation experiencing and interpreting national and global events individually [24]. The NHS Constitution is clear that its staff must be treated with respect, dignity,

compassion and care to ensure that staff feel valued, empowered and supported, not just because it is the right thing to do but patient safety, experience and outcomes are improved when this is achieved [25]. It is well recognised that a positive organisational culture is associated with operational performance and success [26,27] and within healthcare, this includes improved clinical- and staff-related outcomes, the latter including staff retention and performance [28]. This reinforces the requirement to understand the experiences of Resident Doctors in their working environment.

The total number of doctors in the United Kingdom is increasing [29], with post-graduate doctors in training (PGDiTs) making up 24.6% of the medical workforce. The PGDiT cohort currently spans three generations (Generation X, Generation Y (Millennials) and Generation Z (iGen, Gen Z, Zoomers)) across a breadth of ages ranging from a 23-year-old newly qualified Foundation Year 1 doctor to a Senior Registrar in their late 30s with up to 10-14 years of post-graduate training. These three generations closely interact with consultants, Specialty and Associate Specialist doctors and General Practitioners (GPs) that are predominantly Baby Boomers, Generation X and slowly rising numbers of Generation Y.

Given the lack of dedicated primary research on generational diversity within the medical profession of the NHS and increasing concerns relating to training and retention, there is a requirement to determine the existence and impact of generational diversity amongst PGDiTs in the NHS and identify potential solutions to improve intergenerational collaboration in the workplace.

Aims and Objectives

This study aims to explore and understand the concept, perceptions, experiences and sources of generational diversity amongst PGDiTs working within a single acute hospital NHS Trust.

Methods and analysis

Study design

This is a qualitative research study. The study methodology supporting our study design is pragmatic with components of grounded theory and interpretative phenomenological analysis (IPA) complementing one another. Grounded theory allows for the emergence of new themes regarding generational diversity [30], whilst the philosophical approach provided by IPA will provide a deeper insight into how lived experiences of research participants shape the experiences and interpretations of workplace interactions [31].

Study Setting and Eligibility Criteria

This is a single centre study based at an acute hospital NHS Trust in the South of England. The following criteria must all be met for a participant to be included in the study: (i) any medically qualified healthcare professional with a GMC registration number, (ii) working in a recognised training programme in a specific acute hospital NHS Trust in the South of England, (iii) currently based at that specific hospital, and (iv) consents to being interviewed and recorded for the purposes of the study.

The nomenclature that refers to non-consultant or GP grade doctors is confusing and has recently been altered from Junior Doctor to Resident Doctors [32]. The term Resident Doctors refers to all locally employed doctors and post-graduate doctors in training (PGDiTs). This research study is specifically recruiting PGDiTs as they have a clear relationship with their superiors within their training programme.

Data Collection

Focus groups will be used to explore participants experiences and understanding of generational diversity through the sharing of experiences and personal anecdotes [33,34]. The concept of a generation is defined by shared values and experiences [21,35,36] and the use of focus group will facilitate an in-depth exploration and clarification of views and attitudes through social interaction.

Participants will be stratified according to their generation based on generational definitions with a view to conduct a total of six focus groups (Generation X (01/01/1965 – 31/12/1980), Generation Y (01/01/1981 – 31/12/1995) and Generation Z (01/01/1996 – 31/12/2020)). No clear consensus on generational cohort definitions. These dates have been chosen from reviewing a variety of sources [37]. Each focus group will consist of three to six participants. Two focus groups will be performed for each of the three different generations, providing a total sample size ranging from 18 to 36 participants. We aim to achieve data saturation with this number of participants and discussions [38].

Focus groups will be conducted face-to-face on the acute hospital NHS Trust premises at a mutually convenient time for the participants. Each focus group will be electronically audio-recorded and led and moderated by the lead member of the research team (MBC). All participants will be provided with a participant information sheet and will be asked to complete and sign an informed consent form prior to starting the study.

If there are insufficient participants recruited to conduct a focus group (minimum three participants) then semi-structured interviews will be offered to the participants as an alternative option. Every effort will be made to conduct focus groups; however, one-to-one interviews are also frequently used in qualitative research [39]. If a one-to-one interview is performed, the same approach to the focus group will be applied to the conduct of one-to-one interviews. Furthermore, if a mutually agreeable time or location is unable to be identified for the participants, then virtual focus groups or interviews will be offered.

An interview schedule will be developed with broad open-ended questions in various topics derived from prior research to help guide the focus groups and interviews [39]. Internal pilot and informal field testing of the interview schedule will be conducted to identify any ambiguities, leading questions or interviewer biases, alongside guiding the order of the questions [40]. The interview schedule will remain flexible and amenable to change as data collection continues as other important topics may be raised through discussion with research participants. Reflective notes will be made by the moderator throughout the period of data collection.

Recruitment and Sampling

The primary method of sampling will be purposive. Email communication will be used via dedicated email distribution lists exist to contact all relevant medical professionals, specifically PGDiTs, working in the acute hospital NHS Trust. This initial email communication will contain an electronic copy of the participant information sheet and informed consent form. Potential participants will be invited to respond if they are interested and meet the pre-determined eligibility criteria. If a potential participant would like to take part in the study, the research team will provide an opportunity for questions about the study. At this point, the research team will require the date of birth of the participant to allow generational stratification. The participants will then be provided with a variety of dates and times for a focus group or interview.

If purposive sampling fails to achieve sufficient recruitment of potential participants, then non-probability forms of sampling will be employed to achieve further recruitment, specifically convenience and snowball sampling. This may be by word of mouth or by email. With snowball sampling, the study participants will be strongly informed not to provide any details of potential participants to the research team to avoid the disclosure of any personal information. The exact demographics of the medical workforce is

unclear; however a report in 2019 identified that 3% of junior doctors working in secondary care were aged 45 – 54 years old [41]. This represents Generation X and this cohort are more likely to require early non-probability sampling in the participant recruitment phase.

Data Analysis

All electronically audio-recorded data will be fully transcribed verbatim. Transcripts will be anonymised and checked in comparison to the original audio-recording prior to being uploading into qualitative data analysis software (NVivo, Lumivero, Denver, USA).

Inductive thematic analysis will be used as the method to analyse the data. The main researcher will gain an initial familiarisation with the dataset prior to the generation of initial codes from transcripts [42]. Approximately 20% of the transcripts will be independently coded by another member of the research team to establish intercoder reliability [43]. The coding will then be compared between coders and further discussion will continue until a consensus is reached. Initial codes will be inductively collated into various themes, with ongoing refinement of the themes into higher level themes and categories that will enable conclusions and potential recommendations to be generated.

The primary method of data collection in this study is through the use of focus groups. The concept of a generation is determined by shared values shaped by collective experiences, therefore, it is considered that focus groups will be more effective at an in-depth exploration of shared experiences and views through social interactions amongst a generational group of participants. However, it is recognised that focus groups may not be possible and individual interviews may need to be conducted. If this occurs, this will be acknowledged as valuable as using different data sources contributes to data source triangulation which increases the rigour and validity of the study [44].

The data analysis strategy for two different data sources will be as follows. The data will be handed, transcribed and formatted in the same manner and coded using inductive thematic analysis. Each dataset will be coded independently, with a second member of the research team independently coding a proportion of transcripts from each type of data source. The codes and emerging themes from each data source will be cross-referenced and compared to identify divergent and convergent findings. A matrix will be created for each data source to visually demonstrate the findings and a narrative synthesis will be conducted to explore and interpret these findings. Different data sources will be clearly acknowledged in the results and final report.

Respondent validation will be performed after each focus group or interview and after the final data analysis to check the accuracy of the transcriptions and whether the conclusions of the research team are consistent with the experiences of the participants

[45,46]. Respondent validation is not mandatory and the participant can chose to opt-out of this process.

The main researcher (MBC) will employ prospective reflexivity to reduce the impact of bias during the research process, data collection and analysis [45]. This will be achieved practically by the guide provided by Olmos-Vegas et al. [47,48] that encourages reflexivity on personal, interpersonal, methodological and contextual factors that may influence the study. This includes the creation and maintenance of a reflexive journal throughout the study, alongside documenting the main researcher's position and demographics, pre-existing assumptions and the consideration of any differential power dynamics between the participants and the interviewer. Various methodological frameworks for the study design were discussed amongst the research team prior to the adoption of a pragmatic approach. Regular contact with the research team throughout the study will be maintained to discuss and challenge any interpretations and assumptions and identify any blind spots in the study. The Standards for Reporting Qualitative Research (SRQR) and Consolidated criteria for Reporting Qualitative Research (COREQ) checklists will be employed for reporting the research study (47,48).

Limitations

There are numerous limitations encountered within this study. This study will be conducted in a single acute hospital with its own regional characteristics and differences in comparison to other regions. This may result in differences experiences and perspectives compared to other contemporaries in other hospitals and regions. The small nature of the study will also limit the generalisability of the study findings to the wider population of PGDiTs. Trainers and locally employed doctors have not been included in this study.

To overcome this, further research could be conducted amongst these additional cohorts, different healthcare settings (i.e. primary care) and geographical locations, and with other specialties not represented in this study to capture a broader range of perspectives. The results of this study could be used to tailor the interview schedule for future focus groups and interviews with different participants and settings.

A number of biases are also likely to be encountered including recall bias (i.e. incorrect or inaccurate recollection of experiences and events) and a selection bias of those wanting to be included within the study. We anticipate difficulty in recruiting participants from Generation X as there are likely to be fewer individuals of this age working as PGDiTs.

Patient and public involvement

There was no patient or public involvement in the development of the protocol. A number of PGDiTs reviewed and contributed to the development of the initial participant invitation email.

Ethics and Dissemination

Approval from the Health Research Authority (HRA) and Health and Care Research Wales was obtained on the 6th March 2024 (Reference: 24/HRA/0770). The study end date is the 31st August 2025. The HRA states that Research Ethics Committee approval is not required as the study involves NHS staff as research participants by the virtue of their professional role. All potential participants will be provided with a participant information sheet. Informed consent will be obtained from all participants prior to participating in the research study. Written informed consent will be obtained from face-to-face interviews and focus groups or electronically completed consent forms will be completed from video interviews. All focus groups and semi-structured interviews will be conducted at a time and place that is convenient to the participants. Participants will be reminded of their right to withdraw from the study without there being any negative consequences on their work or training. The importance of anonymity and confidentiality will be highlighted to participants and must be maintained during and after their participation within the research study.

All data will be handled following the UK Data Protection Act (2018), the Research Governance Framework for Health and Social Care and the General Data Protection Regulations (2018). Written informed consent forms will be stored in a locked cabinet in a locked office available to the Chief Investigator (MBC). An encrypted electronic audio-recorder will be used to record the interviews and focus groups. Recordings will be removed from the portable device permanently as soon as they are transferred. The transcribing will be performed by the Chief Investigator. Interview transcripts will be pseudonymised and any personal information will be removed from the data prior to the data analysis. Participants will only be identified using a study identification number. Pseudonymised data and the study identification log will be stored in two separate access-restricted folders. Access to the data will be restricted to the research team only. The final study report will be circulated to all participants that have consented to receive the report and circulated to all relevant stakeholders. The findings of the study will be reported through relevant academic conferences and peer-reviewed publications.

Footnotes

Contributors: MBC is the chief investigator for this project. MBC developed the original idea for the project, further developed by JT, IH, LH, SY and PS. MBC drafted the first version of the protocol with critical revisions by JT, IH, LH, SY and PS, alongside giving approval for submission of the manuscript. MBC reviewed the manuscript and approved the final version. Guarantor: MBC.

Competing interests: None declared.

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Ethics approval: Not required. The research study involves NHS staff as research participants. Refer to the Ethics and Dissemination section for further detail.

Provenance and peer review: External peer review was conducted by two independent reviewers that were not involved in the development of the study idea or protocol.

References

1 Mannheim K. Das Problem der Generationen. *Kölner Vierteljahreshefte fürSoziologie*. 1928;7:309–30.

2 Finkelstein LM, Ryan KM, King EB. What do the young (old) people think of me? Content and accuracy of age-based metastereotypes. *Eur J Work Org Psychol*. 2013;22:633–57.

3 Urick MJ, Hollensbe EC, Masterson SS, *et al.* Understanding and managing intergenerational conflict: An examination of influences and strategies. *Work Aging Retire*. 2016;waw009.

4 Thomas KW. Conflict and conflict management: Reflections and update. *J Organ Behav*. 1992;13:265–74.

5 Hald EJ, Gillespie A, Reader TW. Causal and corrective organisational culture: A systematic review of case studies of institutional failure. *J Bus Ethics*. 2021;174:457–83.

6 Reason J. Understanding adverse events: human factors. *Qual Health Care*. 1995;4:80–9.

7 Burton CM, Mayhall C, Cross J, *et al.* Critical elements for multigenerational teams: a systematic review. *Team Perform Manag*. 2019;25:369–401.

8 Woodward I, Vongswasdi P, More E. Generational Diversity at Work: A Systematic Review of the Research. 2015.

9 Brown JB, Fluit M, Lent B, *et al.* Surgical culture in transition: gender matters and generation counts. *Canadian Journal of Surgery*. 2013;56:153–8.

10 Jovic E, Wallace JE, Lemaire J. The generation and gender shifts in medicine: an exploratory survey of internal medicine physicians. *BMC Health Services Research*. 2006;6:55.

11 Newman CE, de Wit JB, Reynolds RH, *et al.* 'Who's coming up next to do this work?' Generational tensions in accounts of providing HIV care in the community. *Health*. 2016;20:258–73.

12 Guptill M, Reibling E, Phan T, *et al.* Working in fours: generational communication in the emergency department. *Int J Emerg Med*. 2023;16:58.

13 Heuss SC, Zimmerli L, Schneeberger AR. How do physicians from two generations communicate with each other? *Cogent Social Sciences*. 2022;8:2095745.

14 Heuss SC, Datta S. Impact of leadership communication on job satisfaction and well-being of physicians. *Discover Global Society*. 2023;1:11.

15 GMC. National Training Survey 2024. General Medical Council 2024.

16 GMC. The State of Medical Education and Practice in the UK: Workforce Report 2024. General Medical Council 2024.

17 Gilbert A, Hockey P, Vaithianathan R, *et al.* Perceptions of junior doctors in the NHS about their training: results of a regional questionnaire. *BMJ Qual Saf*. 2012;21:234–8.

18 Lock FK, Carrieri D. Factors affecting the UK junior doctor workforce retention crisis: an integrative review. *BMJ Open*. 2022;12:e059397.

19 Taylor B, Scobie S, Palmer B. What does the NHS staff survey tell us about the changing behaviours and motivation of health care staff? Nuffield Trust. 2025. https://www.nuffieldtrust.org.uk/news-item/what-does-the-nhs-staff-survey-tell-us-about-the-changing-behaviours-and-motivation-of-health-care-staff#toc-header-1 (accessed 20 February 2025)

20 NHS England. NHS Long Term Workforce Plan. NHS England 2023.

21 Jones K, Warren A, Davies A. Mind the Gap. Exploring the needs of early career nurses and midwives in the workplace. Health Education England 2015.

22 Archer J, Regan de Bere S, Nunn S, *et al.* Revalidation in Practice: Shaping the Future Development of Revalidation. Plymouth University Peninsula Schools of Medicine and Dentistry 2014.

23 Sarraf ARA. Generational Groups in Different Countries. *International Journal of Social Sciences & Humanities*. 2019;4:41–52.

24 Department of Health and Social Care. The NHS Constitution for England. Department of Health and Social Care 2021.

25 Shahzad F, Luqman RA, Khan AR, *et al.* Impact of organizational culture on organizational performance: An overview. *Interdisciplinary Journal of Contemporary Research in Business*. 2012;3:975–85.

26 Braithwaite J, Herkes J, Ludlow K, *et al.* Association between organisational and workplace cultures, and patient outcomes: systematic review. *BMJ Open*. 2017;7:e017708.

27 West M, Armit K LL, Eckert R, *et al.* Leadership and leadership development in health care: the evidence base. Faculty of Medical Leadership and Management 2015.

28 GMC. The state of medical education and practice in the UK: The workforce report. General Medical Council 2022.

29 Chun Tie Y, Birks M, Francis K. Grounded theory research: A design framework for novice researchers. *SAGE Open Med*. 2019;7:2050312118822927.

30 Smith JA, Eatough V. Interpretative Phenomenological Analysis. In: Lyons E, ed. *Analysing Qualitative Data in Psychology*. 2007:35–50.

31 British Medical Association. “Junior” doctors change name to “resident” doctors. British Medical Association. 2024. https://www.bma.org.uk/bma-media-centre/junior-doctors-change-name-to-resident-doctors (accessed 15 November 2024)

32 Kitzinger J. Qualitative Research: Introducing Focus Groups. *BMJ*. 1995;311:299–302.

33 Mannheim K. The problem of generations. *Psychoanal Rev*. Published Online First: 1970.

34 Ryder NB. The Cohort as a Concept in the Study of Social Change. American Sociological Review. 1965;30:843.

35 Deloitte. The Deloitte Global 2023 Gen Z and Millennial Survey. Deloitte. 2023. https://www.deloitte.com/global/en/issues/work/content/genzmillennialsurvey.html (accessed 5 July 2023)

36 Barclays. Talking About My Generation. 2013.

37 Hennink M, Kaiser BN. Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Soc Sci Med*. 2022;292:114523.

38 Gill P, Baillie J. Interviews and focus groups in qualitative research: an update for the digital age. *Br Dent J*. Published Online First: 5 October 2018. doi: 10.1038/sj.bdj.2018.815

39 Kallio H, Pietilä A-M, Johnson M, *et al.* Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. *J Adv Nurs*. 2016;72:2954–65.

40 BMA. Supporting an Aging Medical Workforce. British Medical Association 2019.

41 Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3:77–101.

42 O’Connor C, Joffe H. Intercoder reliability in qualitative research: Debates and practical guidelines. *Int J Qual Methods*. 2020;19:160940691989922.

43 Carter N, Bryant-Lukosius D, DiCenso A, *et al.* The use of triangulation in qualitative research. *Oncol Nurs Forum*. 2014;41:545–7.

44 Birt L, Scott S, Cavers D, *et al.* Member Checking: A Tool to Enhance Trustworthiness or Merely a Nod to Validation? *Qual Health Res*. 2016;26:1802–11.

45 Olmos-Vega FM, Stalmeijer RE, Varpio L, *et al.* A practical guide to reflexivity in qualitative research: AMEE Guide No. 149. *Med Teach*. 2022;1–11.

46 Berger R. Now I see it, now I don't: researcher's position and reflexivity in qualitative research. *Qual Res*. 2015;15:219–34.

47 Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*. 2007;19:349–57.

48 O'Brien BC, Harris IB, Beckman TJ, *et al.* Standards for reporting qualitative research: a synthesis of recommendations. *Acad Med*. 2014;89:1245–51.