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Research Article

A Pilot Project to Create Awareness of Clinical Research Funding Streams Among Nurses and Allied Health Professionals in England

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Background: A culturally diverse research workforce benefits patients, the community and the population as patients see health and care professionals who are like them and can build trusting relationships. From our experience, ethnic minority group nurses are less likely to attend research-related workshops and have significantly less awareness about clinical research funding and career pathways. This pilot project aimed to create awareness of clinical research terminology, methods and funding streams among ethnic minorities cardiothoracic nurses and allied health professionals (NAHPs) across specific geographical locations in England.
Methods: Participants were invited using social media platforms to attend a research masterclass at various locations across England and 211 were registered but 92 attended. They were also invited to complete a pre- and postworkshop questionnaire to determine their understanding of the topics being taught during the masterclass. Data were collected and then compared before and after the masterclass.
Results: A total of 63 out of 92 participants completed the workshop evaluation. There were 88% female and 11% male participants, aged 18 to 60+ years with different educational backgrounds. The participant's pre- and postresearch theory and skills knowledge demonstrated some significant changes after attending the Masterclass on understanding research terminologies ($p < 0.001$), how study aims, and objectives determine the study methodology ($p < 0.001$) and the difference between qualitative and quantitative research ($p = 0.012$). We also asked about the overall experience (98% said 10 out of 10), structure of the workshop (98% said 9 out of 10), venue, food and drinks (95% said 8 out of 10), communication/organisation (98% said 10 out of 10) and relevance of the workshops (100% said 10 out 10).
Conclusions: Our study findings suggest that raising awareness about research careers, local/national funding opportunities and research masterclasses can improve NAHPs awareness of opportunities to gain skills and confidence in leading their own research to answer pertinent clinical and care questions related to their practice and ultimately improve patient care. In addition, this study identifies the gap in clinical research and funding among clinical staff, which is crucial for advancing evidence-based practice. Encouraging clinical healthcare staff to engage in clinical research will help foster an evidence-based culture.

Keywords: allied health professionals; masterclass; National Institute of Health and Care Research (NIHR); nurses; research awareness; research funding

1. Introduction

In the 21st century, National Health Service (NHS), advanced nursing career pathways are getting complex and have multiple components (Leadership, Training, Research, and Clinical delivery), increasing the complexity and challenge of implementing clinical research careers within the system [1, 2]. In addition to providing clinical care, these professionals are also expected to deliver expert coaching, engage in research, and offer leadership to medical colleagues, leaving little room for clinical research [3]. Clinical research is essential for evidence-based practice [4]. Implementing evidence-based practice has led to better clinical outcomes and fewer adverse events [5]. Yet nursing, midwifery and allied health professionals' (AHPs) led research within the NHS remains underdeveloped partly due to clinical pressure in the NHS [6]. There are also limited employment positions between practice and academia, and competition for research funding is high, therefore impacting opportunities for nurses to develop a research career within the NHS [7].

To add to this complexity, nurses, midwives, and AHPs from ethnically diverse backgrounds are even less likely to pursue a research career [7]. Successful applications to National Institute for Health and Care Research (NIHR) awards are fewer proportionately from these groups [8]. A culturally diverse research workforce mirroring the communities served by practicing clinicians, benefits patients, the communities and the population, as it allows patients to interact with health and care professionals who share the same cultural values [1].

Interestingly, recent studies have demonstrated that reducing health disparities and promoting healthcare patient outcomes of diverse populations needs more diversity in healthcare leadership [9–11]. The wealth of clinical research ideas that diverse clinical staff contribute can be highly generative when supported by strong and diverse leadership. The lack of diverse leadership has significant implications for ethnic minority nurses and AHPs (NAHPs), limiting their access to clinical research opportunities. This, in turn, directly impacts patient health outcomes, often contributing to disparities in care [12].

Ethnic minorities group nurses are less likely to seek out research opportunities such as research-related workshops and appear to be less aware of clinical research funding and career pathways [13, 14]. It is unclear what the barriers and enablers are in health and social care research for these groups of practitioners due to being under-investigated, making solutions difficult to quantify and challenge [15]. Considering these factors, we initiated a project across three major cities in England to expose ethnic minorities nurses and AHPs to a research masterclass and capture any changes to their knowledge of research terminology, methods, and funding opportunities.

1.1. Aims and Objectives. This project aimed to create awareness of clinical research terminology, methods and funding streams among ethnic minority NAHPs in England, with the following objectives:

1. To understand the importance of clinical healthcare research.
2. To understand the awareness of equity in research.
3. To understand the awareness of research funding options and streams available in England.
4. To understand the awareness of different research career options within the NHS.
5. To understand the awareness of patients and public involvement (PPI) in research.

2. Methods

2.1. Project Design and Recruitment. It is a pre-post workshop intervention study with a quasi-experimental design. This study involved collecting data before and after the research masterclass, specifically to assess changes in participants' understanding of research terminology, methods and funding streams within the UK. In addition, we collected quantitative data (via the pre- and postworkshop questionnaires) to measure changes in knowledge, as well as qualitative data through the workshop evaluation, providing feedback on the structure, content and overall experience.

The participants were recruited via professional social media sites (Facebook groups, LinkedIn, Twitter) across England. Four face-to-face workshops and three online sessions were conducted to include participants from different geographical locations and to capture more diverse population data. Between February and August 2023, face-to-face research awareness masterclass sessions were conducted in Manchester, London, and Leicester. However, two sessions (Oxford and Birmingham) were cancelled due to faculty sickness and junior doctor's strike, respectively. Three online sessions were scheduled, but only a few delegates attended due to staff shortages and prolonged surgery waiting list in the NHS. These geographical locations were selected due to having a more diverse healthcare staff compared to other areas in England.

Basic demographics were collected such as age, gender, ethnicity, professional background, and their geographical location during the registration process using the Microsoft Forms platform. The participants had the option to participate in the Masterclass and be part of the research project or just attend the Masterclass and complete the evaluation form. A participant information sheet was sent out via email to all participants who agreed to participate in the research project. Participants completed an online consent form and subsequently an email containing a hyperlink or QR code to complete the presession questionnaire was sent. A postsession questionnaire QR code with the workshop evaluation feedback was provided to all the participants at the end of the workshop. A link to an online study questionnaire was emailed to all participants to complete between January 2023 and July 2023. No further contact or reminder was sent, and all the questionnaires were completed voluntarily with no incentive offered. The results were collated automatically on the online commercial platform. Each participant was given a unique study code to protect their identity and feedback.

Only completed anonymous questionnaires with unique codes were included for final analysis. All the questionnaires were transferred to a Microsoft Excel sheet with the study code.

2.2. Participants Inclusion Criteria

- Adult healthcare professionals aged 18 years or older.
- Individuals with access to social media, email, smartphones and who are willing to complete questionnaires online.
- Individuals who live and work in the geographical areas of Manchester, Leicester, London, Oxford, and Birmingham.

2.3. Participants Exclusion Criteria

- Individuals who are not willing to provide consent or complete the questionnaires online.
- Individuals who are unable to attend workshops either online or in person.
- Individuals who are unable to read or write online or do not have access to computers.

2.4. Ethical Consideration, Governance and Funding. Ethical approval was obtained via the University of Salford's research ethics committee ID: 10,441. All individuals participated in the research study and Masterclass evaluation on a voluntary basis with written consent from research participants. To protect participants details in accordance with the Data Protection Act and General Data Protection Regulation Guidelines 2018 [16], all information was handled by the research workshop director (BK) and co-researcher (LR). Details were stored on a university-owned online platform (Microsoft Office and Menti.com), which was protected with usernames and passcodes. Each presenter prepared all sessions, and no patient related information was included; therefore, there was no breach of confidentiality and BK checked for accuracy and quality assurance. The independent statistician (AR) analysed all coded data.

These workshops were developed and advertised to meet the needs of ethnic minorities nurses and AHPs. However, via online/email/social media the research team received feedback that nonethnic nurses wished to join the masterclasses due to their lack of knowledge of research careers and funding. Further ethical amendment was made to include them.

A financial grant of £25,000 was provided for these workshops and research project as part of the University of Salford's internal research funding through the "QR EU Horizon uncertainty funds" scheme to develop a National Research Network collaboration.

2.5. Aspects of Masterclass Workshops. These pilot workshops consisted of quizzes to assess participants knowledge about research, didactic/interactive lectures, and panel/group discussions. Each full-day face-to-face session was allocated 8 h, including lunch and regular tea/coffee and networking breaks. All sessions covered five different topics addressing objectives of this research project. These were delivered by national research experts ranging from academics to clinical academics and public/patient representatives. Twenty national faculties supported the Masterclass workshops, including Professors of nursing, Professors of Pharmacists, Research Directors, Research Managers, Postdoctoral fellows, Specialist Cardiothoracic Registrars, Consultant cardiothoracic surgeons, Consultant nurses, Senior Clinical Lecturers, PPI group and the President of Northwest PPI group representative.

Each workshop session was designed and aligned with the NIHR research vision [17] and survey feedback from our previous survey of cardiothoracic perioperative practitioners [13]. After identifying the workshop organisers and selecting faculties based on their expertise to ensure culturally diverse groups, their participation was confirmed. Subsequently, the details of the workshop, the research project's purpose, and the learning outcomes were discussed with all faculty via email, and Microsoft Teams meeting as required.

2.6. Questionnaire Instrument. As part of this project, we collected several elements from the workshops, including pre- and postcourse evaluations for the Masterclass, as well as research awareness questionnaires to assess participants' knowledge before and after attending the Masterclass session. A 31-item electronic questionnaire was designed to cover specific questions related to the learning outcomes of the Masterclass workshops. The participants were asked to rate on a scale of 0–10 where 0 considered as no understanding and 10 means complete understanding. The questionnaire was designed and validated by five experts (clinician, academics, postgraduate students, research nurses) across Great Britain, and it was tested previously with the University of Salford under/postgraduate nursing students' research interests. Questionnaire completion time was kept short (< 10 min) to maximise participation and minimise a poor response rate. The evaluation of the Masterclass was set on a scale of 1–5(0 means disagree and 5 means strongly agree). The 14-item electronic evaluation survey was designed to cover specific questions related to learning outcomes, workshop structure, interactive/communication, online meeting quality, and for the face-to-face events the venue, food and drinks and overall experience of the Masterclass workshops.

2.7. Statistical Analysis. Categorical values were summarised as percentages and numerical values as median (interquartile). Questions with ordinal answer options were provided on a Likert scale from strongly disagree to strongly agree and they were converted to numbers of 1–5 for the comparison. The p value and 95% confidence interval for the comparison of pre- and postmasterclass workshops were obtained from the paired Wilcoxon test. p value < 0.05 indicates statistical difference; however, to account for the effect of multiple testing, p values close to 0.05 (larger than 0.01) was not considered statistically significant.

Table 1: Demographics and characteristics of the masterclass workshop participants.

Characteristics	Variables	Sample size ($n = 92$)
Geographical location (%)	Leicester	8 (8.7%)
	London	43 (46.7%)
	Manchester	41 (44.6%)
Age (%)	18–32	28 (30.4%)
	33–40	17 (18.5%)
	41–50	31 (33.7%)
	51–60	12 (13.0%)
	60+	04 (4.3%)
Gender (%)	Female	81 (88.0%)
	Male	11 (12.0%)
Ethnicity (%)	African	03 (3.3%)
	Asian	17 (18.5%)
	Bangladeshi	02 (2.2%)
	Black British	01 (1.1%)
	British Indian	04 (4.4%)
	Caribbean	02 (2.2%)
	Filipino	09 (9.8%)
	Indian	15 (16.3%)
	Ugandan	01 (1.1%)
	Turkish	01 (1.1%)
	White	34 (37%)
	Other	03 (3.3%)
Profession (%)	Academia	11 (12.1%)
	Allied health professional	02 (2.2%)
	Nurses	79 (85.7%)

3. Results

Ninety-two participants completed presession questionnaire and attended the workshop but only 63 (68%) completed postsession questionnaire and evaluation feedback. The median time to complete the questionnaire was 3.24 min.

3.1. Demographics. Demographics and characteristics of 92 participants are illustrated in Table 1, and 92 participants attended the masterclass workshops. There were 81 (88%) female and 11 (12%) male participants, aged 18 to 60+ years with different educational backgrounds. The ethnicity of the participants ranged across African (3.3%), Asian (18.5%), Bangladeshi (2.2%), British Black (1.1%), British Indian (4.4%), Caribbean (2.2%), Filipino (9.8%), Indian (16.3%), Ugandan (1.1%), Turkish (1.1%), White (37%), and other (3.3%). A total of 61.1% were ethnic minority nurses and AHPs. Of the attendees at the workshops, 85.7% were nurses, 12.1% who were academic staff, and 2.2% were AHPs.

3.2. Evaluation of the Masterclass Workshops. A total of 63 (68%) participants completed the workshop evaluation. On a scale of 0–10, we have asked about the overall experience (98% said 10 out of 10), structure of the workshop (98% said 9 out of 10), communication/organisation (98% said 10 out of 10), relevance of the workshops (100% said 10 out 10) and venue, food and drinks (95% said 8 out of 10). In addition, participants were asked to score the workshop sessions on a Likert scale of 1–5 (1 was poor and 5 was excellent). The overall median score was 5 (Table 2).

3.3. Pre- and Postmasterclass Workshop Analysis. Before and after masterclass, participants were asked a list of questions to assess their awareness of clinical research, evidence-based practice, equity in research and research funding.

3.4. Pretraining Questionnaire. Ninety-two participants completed the pretraining questionnaire which is illustrated in Tables 3 and 4.

3.5. Attitude Towards Clinical Research and Evidence-Based Practice. The participant rated their attitude towards clinical research on a 5-points Likert scale. The delegates strongly agreed that clinical research is important (80.4% strongly agree vs. 13.0% agree vs. 1.1% disagree vs. 5.4% strongly disagree). In response to evidence-based practice leading to improved patient care, most delegates were again in strong agreement (82.6% strongly agree vs. 12.0% agree vs. 1.1% disagree vs. 4.3% strongly disagree). In addition, the participants were asked whether they anticipate being actively involved in clinical research in the future, and most of them agreed (51.1% strongly agree vs. 33.7% agree vs. 9.8% neither agree nor disagree vs. 1.1% disagree vs. 4.3% strongly disagree). Most delegates were keen to get involved in clinical research (62% strongly agree vs. 30.4% agree vs., 3.3% neither agree nor disagree vs. 4.3% strongly disagree). Finally, they were asked whether they would like to have more sessions of awareness of clinical research (66.3% strongly agree vs. 26.1% agree vs. 2.2% neither agree nor disagree vs. 5.4% strongly disagree) (Table 3).

Table 2: Workshop evaluation for each topic presented on the day.

List of topics rated on a scale of 1–5 (1 very poor, 5 excellent)	$n = 63$
Research awareness quiz (median [IQR])	5 [4, 5]
Importance of clinical research in healthcare (median [IQR])	5 [5, 5]
Equity in health research (median [IQR])	5 [5, 5]
Resources available to support research including funding (median [IQR])	5 [4, 5]
Patient and public involvement (median [IQR])	5 [5, 5]
Research careers (median [IQR])	5 [4, 5]

Table 3: Pretraining attitudes toward clinical research and evidence-based practice.

Categories	$n = 92$ (%)
Healthcare professionals do not need to know about clinical research	
Strongly disagree	66 (71.7)
Disagree	14 (15.2)
Neither agree nor disagree	02 (2.2)
Agree	02 (2.2)
Strongly agree	08 (8.7)
Clinical research in nursing, medical staff and allied health is important	
Strongly disagree	05 (5.4)
Disagree	01 (1.1)
Neither agree nor disagree	00 (0.0)
Agree	12 (13.0)
Strongly agree	74 (80.4)
I anticipate being actively involved in clinical research in the future	
Strongly disagree	04 (4.3)
Disagree	01 (1.1)
Neither agree nor disagree	00 (0.0)
Agree	12 (13.0)
Strongly agree	74 (80.4)
Research and evidence-based practice leads to improved patient care	
Strongly disagree	04 (4.3)
Disagree	01 (1.1)
Neither agree nor disagree	00 (0.0)
Agree	11 (12.0)
Strongly agree	76 (82.6)
I would like more opportunities to hear about current practice development ideas and research at the university and the trust	
Strongly disagree	04 (4.3)
Disagree	01 (1.1)
Neither agree nor disagree	00 (0.0)
Agree	11 (12.0)
Strongly agree	76 (82.6)
I am keen to get involved with clinical research	
Strongly disagree	04 (4.3)
Disagree	00 (0.0)
Neither agree nor disagree	03 (3.3)
Agree	28 (30.4)
Strongly agree	57 (62.0)
I would like to have more awareness of research	
Strongly disagree	05 (5.4)
Disagree	00 (0.0)
Neither agree nor disagree	02 (2.2)
Agree	24 (26.1)
Strongly agree	61 (66.3)

Table 3: Continued.

Categories	$n = 92$ (%)
As a qualified nurse or allied health professional I will seek out and learn more about research activity	
Strongly disagree	04 (4.3)
Disagree	00 (0.0)
Neither agree nor disagree	04 (4.3)
Agree	27 (29.3)
Strongly agree	57 (62.0)

Table 4: Pretraining awareness of evidence-based research and methods of engagement, funding streams and research terminologies.

Categories	$n = 92$ (median [IQR])
Research awareness	
The importance of clinical research in healthcare	10.0 [8.0, 10.0]
Research careers	7.00 [5.0, 9.0]
How is practice influenced by research?	9.0 [7.0, 10.0]
The role of the National Institute for Health and Care Research (NIHR)	7.0 [5.0, 10.0]
Equity in health research	7.0 [5.0, 9.0]
Resources available to support research and funding	6.0 [3.75, 8.0]
Patient and public involvement in research	7.0 [5.0, 9.0]
Research theory, skills and knowledge	
The differences between qualitative and quantitative research	8.0 [6.0, 9.25]
Research terminology (e.g., Thematic analysis, Nvivo analysis)	5.0 [3.0, 7.0]
Research terminology (sampling, Randomised control trials, cohort studies)	7.0 [5.0, 8.25]
Understanding and interpretation of basic statistics	5.0 [4.0, 8.0]
How study aims and objectives determine the study methodology?	6.0 [4.0, 8.0]
How literature underpins clinical practice?	7.0 [5.0, 9.0]
Critical appraisal of the literature	7.0 [5.0, 8.0]
Research and evidence-based practice awareness and confidence	
Finding someone who could help me should I wish to explore research ideas in the future	6.0 [5.0, 8.0]
Exploring my ideas and questioning current clinical practice	6.0 [5.0, 8.0]
Using evidence-based practice and research in my practice	8.0 [6.0, 9.0]
Using evidence-based practice and research in my practice: Knowing where to go to access research training and development opportunities to give me the skills to question and investigate practice	6.50 [5.0, 8.0]
I attend research webinars, listen to podcasts as part of my job plan	5.50 [4.0, 8.0]
I know that there are many funding streams like Internships, predoctoral programme which I can study before doctoral PhD	5.0 [3.0, 7.0]
I know that funding applications take at least 6–9 months to write a good application with many collaborations	5.0 [3.0, 7.0]
I know that major funders like NIHR, MRC, RfPB fund research projects	5.0 [3.0, 7.0]
I know that major funders like NIHR, MRC, RfPB fund research projects. I know what route to undertake for research career progression	5.0 [2.0, 6.0]

3.6. Awareness of Research Funding, Statistics and Terminologies. The participants were asked to score their awareness of the importance of research in healthcare, research terminologies and research funding streams on a scale of 0–10, where 0 being not aware at all and 10 being completely aware (Tables 3 and 4). The median [IQR] score was 10 [8.0, 10.0] for the importance of clinical research in healthcare, followed by how clinical practice is influenced by research was 9.0 [7.0, 10.0] and the understanding of difference between qualitative and quantitative research was 8.0 [6.0, 9.25]. Interestingly, their understanding of different statistical research terminologies median score was 5.0 [3.0, 7.0], followed by the statistical interpretation awareness was 5.0 [4.0, 8.0].

Although, the overall understanding of research and evidence-based practice awareness and confidence in engagement with research was satisfactory (with median scores 6 or above and a lower interquartile range (IQR) limits above 4), the comprehension of funding sources and their accessibility was observed to be deficient, characterised by an average median score of 5 and a IQR limit ranging from 2 to 4 (Table 4).

3.7. Post-Training Questionnaire. A total of 63 (68%) participants completed both pre and post workshop questionnaire. Of whom, 11.1% were from Leicester, 44.4% from London, and 44.4% from Manchester Masterclass. In that, male participants were 7.9%, and females were 92.1%. The change in their knowledge and attitude after attending the workshop was compared to that before attending the workshop. Results are illustrated in Table 5 and Figures 1, 2, 3 and 4.

3.8. Attitude Towards Clinical Research and Evidence-Based Practice. The participants had some prior knowledge of research attitudes before attending the masterclass workshop. There was no statistical significance change in their research attitude after the workshop, and the p value ranged between $p = 0.357$ and $p = 0.961$ with CI (0.5–1) (Table 5 and Figure 1).

3.9. Research Awareness. Most of the participants demonstrated that attending the masterclass increased their knowledge of research. There was a significant change in the understanding of research careers ($p < 0.001$), equity in health research ($p < 0.001$), PPI in research ($p < 0.001$) and role of NIHR in clinical research ($p < 0.001$). The median [IQR] score and percentages for each category are illustrated in Table 5 and Figure 2.

3.10. Research Theory, Skills and Knowledge. The participant's pre- and postresearch theory and skills knowledge was significantly increased after attending the Masterclass including understanding of research terminologies ($p < 0.001$), how study aims, and objectives determine the study methodology ($p < 0.001$) and the difference between qualitative and quantitative research ($p = 0.012$) (Table 5 and Figure 3).

3.11. Research and Evidence-Based Practice Awareness and Confidence. One of the important aims of this Masterclass was to increase their research awareness and confidence to get involved in clinical research and apply for research funding national schemes. Again, there was a significant change in their level of confidence and awareness of research funding ($p < 0.001$), what route to undertake for research career progression ($p < 0.001$), funding streams for research studies ($p < 0.001$), exploring my ideas and questioning current clinical practice ($p < 0.001$) and using evidence-based practice in clinical practice ($p < 0.001$). The median [IQR] score and percentages for each category are illustrated in Table 5 and Figure 4.

4. Discussion

We conducted these masterclass sessions to achieve five core objectives. It became clear that while clinical practitioners had some knowledge of each topic, the majority were unfamiliar with research funding, fellowships and the importance of PPI in research. Clinical academic nonmedical research practitioners face considerable challenges to fit research into their clinical workload [14, 18]. Many clinical NAHPs do not have time, skill or confidence to conduct research within their practice. Likewise, services may find it difficult to release staff from practice to attend research study days due to pressures in the NHS and care setting [19].

Our study findings suggests that practitioners had a will to attend training with 211 registered but only 92 (43.6%) attended, suggesting that prospective attendees may have found it difficult to be released from practice. As per the delegates' request, we set up these masterclasses online and half-day sessions, but there were almost 90% last-minute cancellations due to a shortage of staff at work. There is a huge growth in clinical research and academic nonmedical practitioners' role in the United Kingdom through the NIHR [20]. However, there is still a paucity of awareness of clinical research opportunities among NAHPs who are at the band 5 to 7 level. In the UK, bandings are used similarly to grades in other countries, representing levels like junior, senior, etc. The amount of time and effort required to write research applications is paramount for these lower band nurses and there is no allocated time provided in their normal duties. Our study's pre- and postmasterclass results demonstrate an improvement in all aspects of research awareness, which may improve awareness and confidence levels in applying for these funding streams.

Our Masterclass focussed and conducted based upon the NHS England Chief nurse strategic plan to improve high-quality, evidenced-based nursing by creating a people-centered research environment that empowers nurses to lead, participate in and deliver clinical research, where research is fully embedded in practice and professional decision-making for public benefit [21]. However, some of the workshop participants expressed their uncertainty over the value of clinical research and research careers for nurses and AHPs compared to their medical colleagues with embedded clinical research plans within their job schedules. We strongly believe that until the UK government implements the medical model of work with clinical, research and academic job plans for Nurses and AHPs, getting time off from clinical day-to-day activities to do any clinical research is hard.

5. Implications of These Masterclasses

The masterclass workshop has significant potential for scalability to other specialities and geographical regions, given its flexible structure and focus on building awareness of clinical research terminology, knowledge, funding, etc. Furthermore, our workshop format can be adapted to various geographical regions, particularly in areas where healthcare professionals may not have easy access to research training across the world. We also believe that the use of digital platforms for delivery, such as online workshops,

Table 5: Summary of results of pre- and postmasterclass workshops.

Variables and categories	$n = 63$	Pretraining ($n = 63$)	Post-training ($n = 63$)	P value and 95% confidence interval
Place (%)				
Leicester	14 (11.1)			
London	56 (44.4)			
Manchester	56 (44.4)			
Gender (%)				
Female	58 (92.1)			
Male	5 (7.9)			
Age (%)18–21	0 (0.0)			
22–25	3 (4.8)			
26–32	17 (27.0)			
33–40	10 (15.9)			
41–50	23 (36.5)			
51–60	7 (11.1)			
60+	3 (4.8)			
Attitudes towards clinical research and evidence-based practice				
Healthcare professionals do not need to know about clinical research (%)				0.357 (–1, 1.5)
Strongly disagree		43 (68.3)	40 (63.5)	
Disagree		11 (17.5)	11 (17.5)	
Neither agree nor disagree		1 (1.6)	0 (0.0)	
Agree		1 (1.6)	2 (3.2)	
Strongly agree		7 (11.1)	10 (15.9)	
Clinical research in nursing, medical staff and allied health is important (%)				0.905 (–1, 1)
Strongly disagree		4 (6.3)	4 (6.3)	
Disagree		1 (1.6)	0 (0.0)	
Neither agree nor disagree		0 (0.0)	0 (0.0)	
Agree		10 (15.9)	13 (20.6)	
Strongly agree		48 (76.2)	46 (73.0)	
I anticipate being actively involved in clinical research in the future (%)				0.0775 (0, 1)
Strongly disagree		3 (4.8)	2 (3.2)	
Disagree		1 (1.6)	1 (1.6)	
Neither agree nor disagree		5 (7.9)	2 (3.2)	
Agree		23 (36.5)	19 (30.2)	
Strongly agree		31 (49.2)	39 (61.9)	
Research and evidence-based practice leads to improved patient care (%)				0.893 (–1, 1.5)
Strongly disagree		3 (4.8)	3 (4.8)	
Disagree		1 (1.6)	0 (0.0)	
Neither agree nor disagree		0 (0.0)	0 (0.0)	
Agree		7 (11.1)	8 (12.7)	
Strongly agree		52 (82.5)	52 (82.5)	
I would like more opportunities to hear about current practice development ideas and research at university and the trust (%)				0.791 (–1, 0.5)
Strongly disagree		3 (4.8)	3 (4.8)	
Disagree		0 (0.0)	0 (0.0)	

Table 5: Continued.

Variables and categories	$n = 63$	Pretraining ($n = 63$)	Post-training ($n = 63$)	P value and 95% confidence interval
Neither agree nor disagree		2 (3.2)	1 (1.6)	
Agree		11 (17.5)	16 (25.4)	
Strongly agree		47 (74.6)	43 (68.3)	
I am keen to get involved with clinical research (%)				0.896 (–1, 0.5)
Strongly disagree		3 (4.8)	3 (4.8)	
Disagree		0 (0.0)	0 (0.0)	
Neither agree nor disagree		3 (4.8)	1 (1.6)	
Agree		18 (28.6)	23 (36.5)	
Strongly agree		39 (61.9)	36 (57.1)	
I would like to have more awareness of research (%)				0.961 (–1, 1)
Strongly disagree		4 (6.3)	3 (4.8)	
Disagree		0 (0.0)	0 (0.0)	
Neither agree nor disagree		2 (3.2)	1 (1.6)	
Agree		15 (23.8)	19 (30.2)	
Strongly agree		42 (66.7)	40 (63.5)	
As a qualified nurse or allied health professional I will seek out and learn more about research activity (%)				0.876 (–1, 0.5)
Strongly disagree		3 (4.8)	3 (4.8)	
Disagree		0 (0.0)	0 (0.0)	
Neither agree nor disagree		3 (4.8)	0 (0.0)	
Agree		15 (23.8)	20 (31.7)	
Strongly agree		42 (66.7)	40 (63.5)	
Research awareness				
The importance of clinical research in healthcare		10.0 [8.0, 10.0]	10.0 [9.0, 10.0]	0.0592 (0, 1.5)
Research careers		7.0 [5.0, 9.50]	9.0 [8.0, 10.0]	< 0.001 (1, 2.5)
How practice is influenced by research		9.0 [8.0, 10.0]	10.0 [8.0, 10.0]	0.0341 (0, 1.5)
The role of the National Institute for Health and Care Research (NIHR)		7.0 [5.0, 10.0]	9.0 [8.0, 10.0]	< 0.001 (1.5, 3.5)
Equity in health research		7.0 [5.0, 9.0]	9.0 [8.0, 10.0]	< 0.001 (2, 3.5)
Resources available to support research and funding		6.0 [4.0, 8.50]	9.0 [8.0, 10.0]	< 0.001 (2.5, 4)
Patient and public involvement		7.0 [5.0, 9.0]	9.0 [8.0, 10.0]	< 0.001 (1.5, 3)
Research theory, skills, and knowledge				
The differences between qualitative and quantitative research		8.0 [6.0, 10.0]	8.0 [7.50, 10.0]	0.012 (0.5, 2)
Research terminology (e.g., Thematic analysis, Nvivo analysis)		5.0 [3.0, 7.0]	8.0 [5.50, 9.0]	< 0.001 (1, 3)
Research terminology (sampling, Randomised control trials, cohort studies)		7.0 [5.0, 9.0]	8.0 [7.0, 10.0]	0.00193 (0.5, 2.5)
Understanding and interpretation of basic statistics		5.0 [3.50, 8.0]	7.0 [6.0, 9.50]	< 0.001 (1, 3)
How study aims and objectives determine the study methodology		6.0 [4.0, 8.0]	8.0 [6.0, 9.0]	< 0.001 (1, 3)
How literature underpins clinical practice		7.0 [5.0, 9.0]	8.50 [7.0, 10.0]	< 0.001 (0.5, 2.5)

Table 5: Continued.

Variables and categories	$n = 63$	Pretraining ($n = 63$)	Post-training ($n = 63$)	P value and 95% confidence interval
Critical appraisal of the literature		7.0 [4.50, 8.50]	8.0 [7.0, 9.50]	0.00104 (0.5, 2.5)
Research and evidence-based practice awareness and confidence				
Finding someone who could help me should I wish to explore research ideas in the future		7.0 [5.0, 8.0]	8.0 [7.0, 9.50]	< 0.001 (1, 3)
Exploring my ideas and questioning current clinical practice		6.0 [5.0, 8.0]	8.0 [7.0, 10.0]	< 0.001 (1, 3)
Using evidence-based practice and research in my practice		7.0 [6.0, 9.0]	9.0 [7.0, 10.0]	< 0.001 (0.5, 2)
Using evidence-based practice and research in my practice. Knowing where to go to access research training and development opportunities to give me the skills to question and investigate practice		6.0 [5.0, 8.0]	9.0 [7.0, 10.0]	< 0.001 (1.5, 3)
I attend research webinars, listen to podcasts as part of my job plan		5.0 [4.0, 8.0]	8.0 [7.0, 10.0]	< 0.001 (2, 3.5)
I know that there are many funding streams like Internships, predoctoral programme which I can study before doctoral PhD		5.0 [3.0, 8.0]	9.0 [8.0, 10.0]	< 0.001 (3, 4.5)
I know that funding applications take at least 6–9 months to write a good application with many collaborations		5.0 [3.0, 8.0]	9.0 [7.0, 10.0]	< 0.001 (3, 4.5)
I know that major funders like NIHR, MRC, RfPB fund research projects		5.0 [3.0, 7.0]	9.0 [8.0, 10.0]	< 0.001 (3, 5)
I know that major funders like NIHR, MRC, RfPB fund research projects. I know what route to undertake for research career progression		5.0 [2.0, 7.0]	9.0 [8.0, 10.0]	< 0.001 (3, 5)

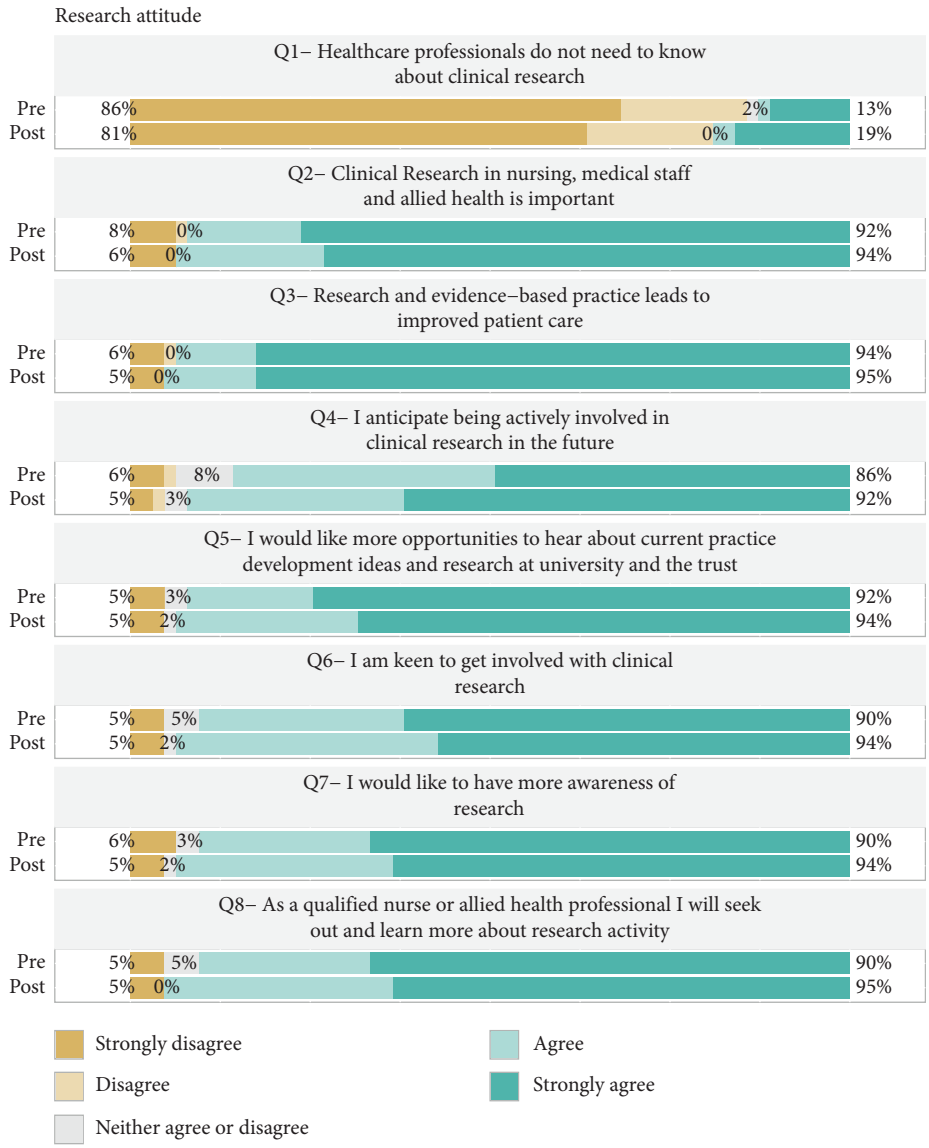

FIGURE 1: Pre- and postmasterclass attitudes towards clinical research and evidence-based practice.

questionnaires, makes our model highly adaptable and accessible, irrespective of location [22]. This is especially important in regions with diverse healthcare teams, where increasing research awareness can lead to improved patient outcomes and evidence-based practice. The scalability of the model is supported by evidence that educational interventions can be effectively adapted to different specialities and regions [23].

A study conducted by Gillespie and Paton [24] insists that how educational programmes can be tailored to different healthcare settings, improving their relevance and impact. Similarly, O'Connor and Procter [25] highlight how leadership development programmes can be scaled across different healthcare contexts, which could be similarly applied to our masterclass workshop model. However, it is important to note that for successful scalability, it is essential to consider factors such as local healthcare priorities, available resources and the specific needs of healthcare professionals in each geographic region. Adapting the content to reflect cultural nuances and ensuring that local experts are involved from the development phase, delivery could further enhance the model's effectiveness [23].

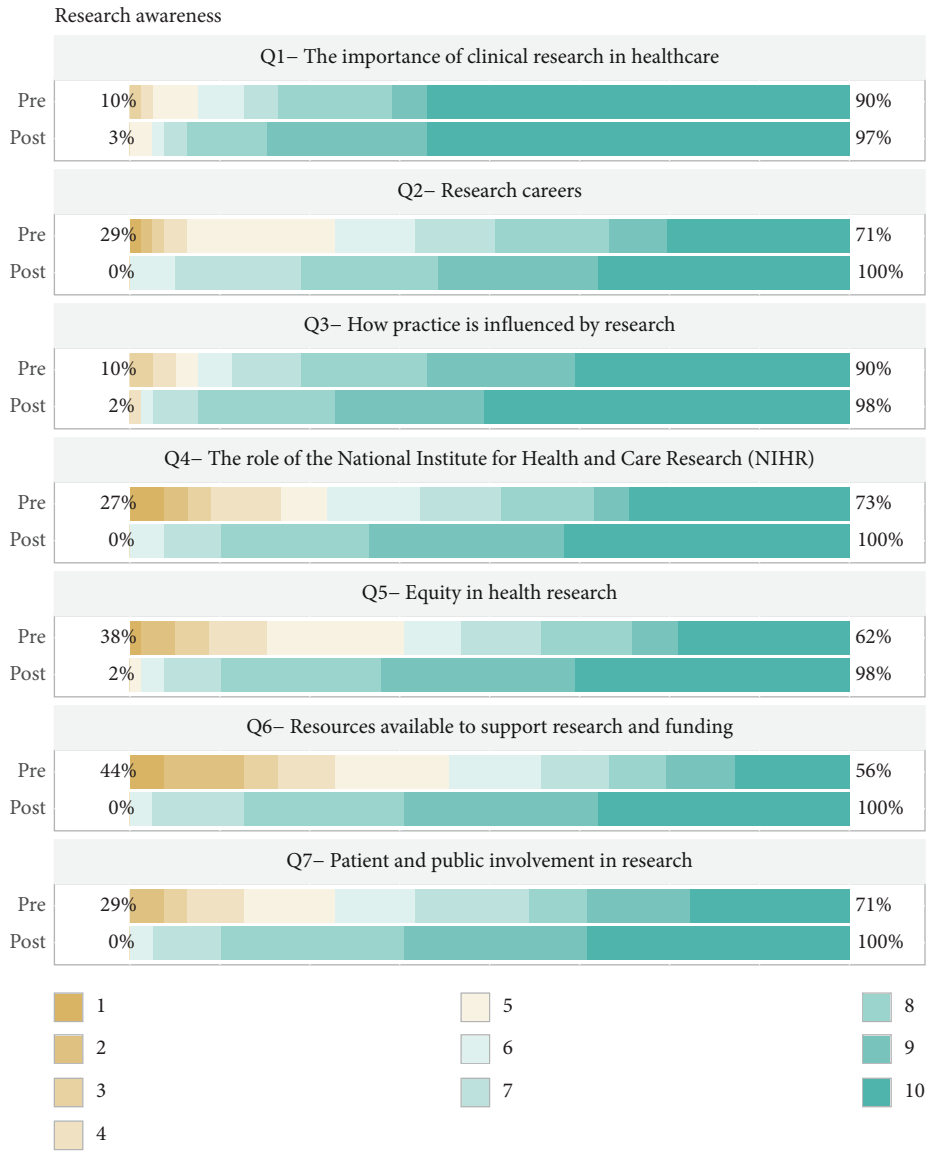

Figure 2: Pre- and postmasterclass research awareness.

We discussed these results with research groups at both local and national levels to increase regional awareness. Following the sessions, we secured funding to develop recorded sessions and podcasts, making these resources readily accessible to clinical practitioners worldwide.

6. Limitations

One of the major limitations was that NHS clinical staff were unable to attend due to staff shortage at work, cancellation of study leaves due to system and national issues, resulted in some of those who had registered for the workshops covering shifts and working clinically. We had an email confirmation from these registered participants to cancel and apologised for not attending. This reduced our workshop attendees and led to a small sample size than intended. The second limitation was that we provided the postsession questionnaire with the course evaluation at the end of the workshop, which resulted in low completion rates of the poststudy questionnaire (63 out of 92%- 67.4%). Most of the participants mentioned that two questionnaires (post-training research questionnaire and masterclass evaluation survey) simultaneously were very time-consuming, so some of them ended up completing the evaluation only. The

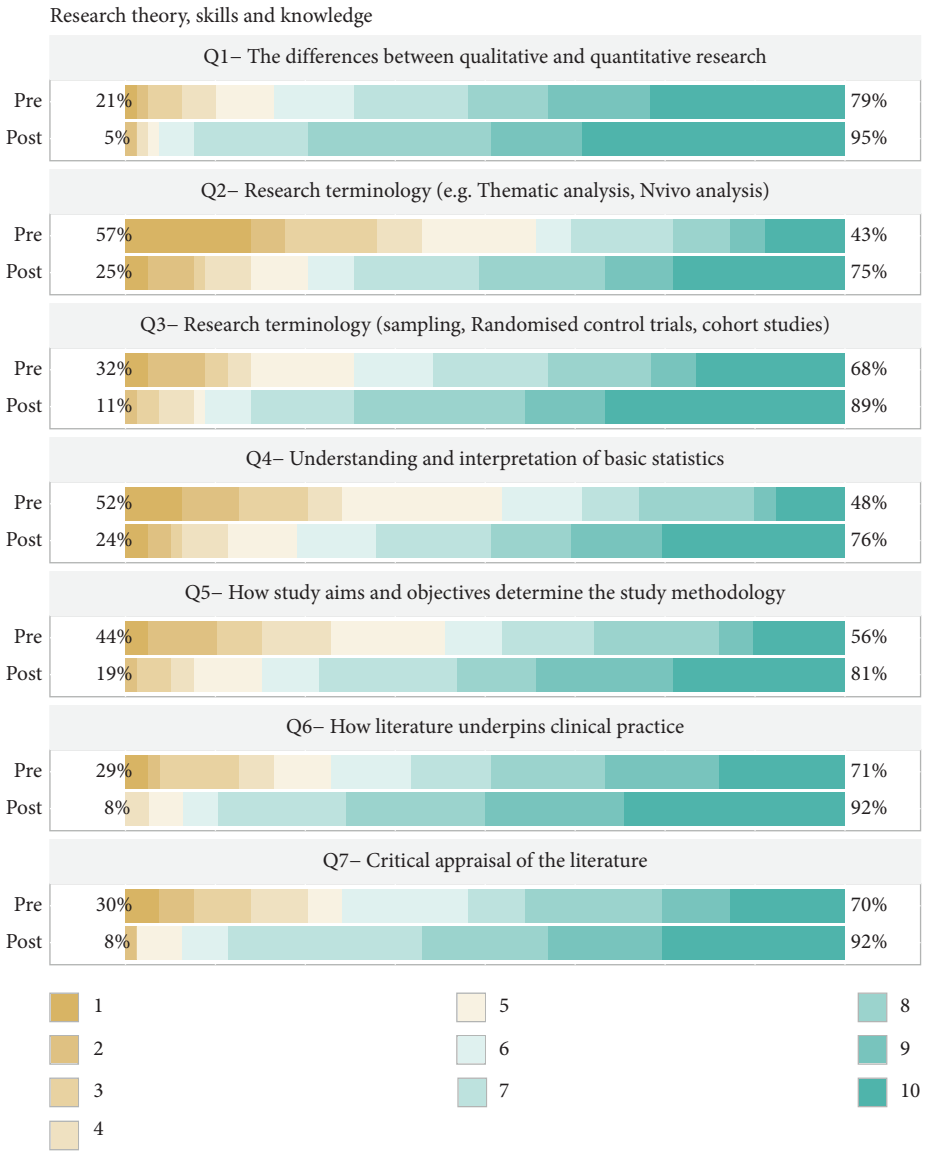

FIGURE 3: Pre- and postmasterclass research theory, skills and knowledge.

factors such as participant burden (completing both the pre- and postworkshops questionnaires may have contributed to lack of time, especially if participants were also engaging with the workshop content), timing and follow-up (we did not send any follow-up reminders), voluntary participation (questionnaires were completed voluntarily without any incentive) can limit the generalisability of the findings, as the responses may not fully represent the broader group of participants who attended the masterclass. It is possible that those who were more engaged or motivated to complete the questionnaires may have had different experiences or levels of awareness compared to those who did not respond. Sadly, we are unable to do secondary analysis because these questionnaires were complete anonymously. May be future

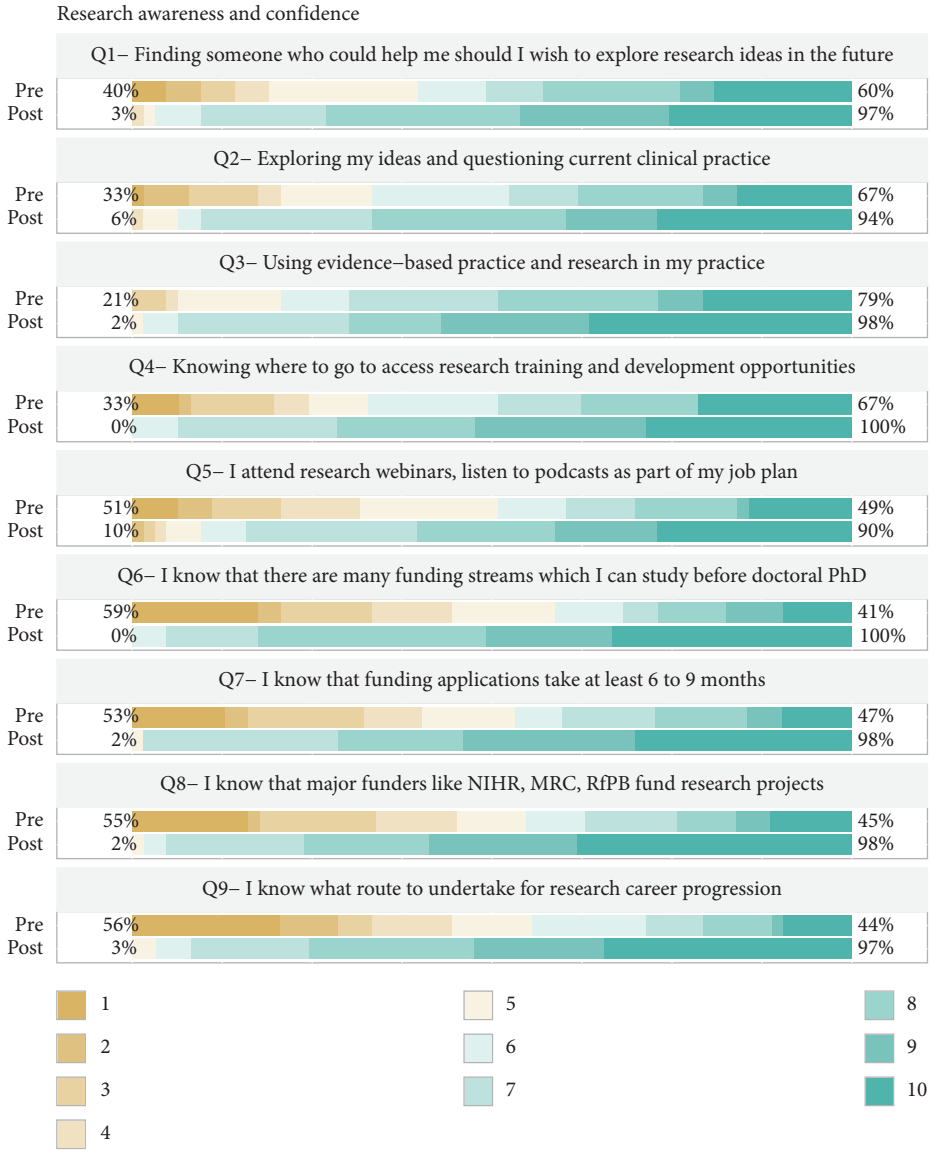

FIGURE 4: Pre- and postmasterclass research and evidence-based awareness and confidence.

studies may benefit from strategies such as offering incentives, sending reminders, or using more targeted follow-up methods to increase the response rates and enhance the generalisability of the results.

7. Conclusion

Historically, NAHPs have been predominantly involved in clinical research delivery, including participants recruitment, collecting data, carrying out routine patient follow-ups and obtain informed consent from research patients. However, the trends are changing, and many NAHPs are increasingly becoming aware of an opportunity to lead research as a principal and chief investigator or develop and lead their own research. Our experience and study findings suggest that raising awareness about research careers, local/national funding opportunities and research masterclasses can improve NAHPs awareness of opportunities to gain skills and confidence in leading their own research to answer pertinent clinical and care questions related to their practice and ultimately improve patient care.

Data Availability Statement

We are happy to share the data upon request. All the data are stored with the sponsor of this study and coded data available with the Medical Statistician. Please contact the corresponding author Prof. Bhuvaneswari Krishnamoorthy.

Ethics Statement

It was obtained via the University of Salford's Research Ethics Committee ID: 10,441.

Consent

The authors have nothing to declare.

Conflicts of Interest

The authors declare no conflicts of interest.

Author Contributions

Bhuvaneswari Krishnamoorthy and Lyndsey Rosson Both have contributed equally to this work.

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