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Allied Health Professions in Research: The Forgotten Workforce

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Abstract

Purpose: To understand the experience, involvement, and perceived importance of research among allied health professions and identify how robust research culture might be established in secondary care. **Method:** Analyses were carried out on quantitative and qualitative data using an online questionnaire disseminated to allied health professionals working in a national health service trust in the north of England. Logistic regression was used to ascertain whether Agenda for Change banding and profession significantly influenced research qualifications, experience, and interest. Qualitative data was analysed within a theoretical framework that focused on, career development, job satisfaction and clinical practice. **Results:** Educational attainment, research experience and interest were significantly greater among allied health professionals in higher Agenda for Change bands. **Conclusions:** Involvement in research provides allied health professionals opportunities for career development, job satisfaction and meaningful clinical impact. National Health Service Trusts should provide infrastructure to support research activity in recognition of their skills and potential to increase research capacity for the benefit of patients.

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Allied Health Professions in Research: The Forgotten Workforce

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ABSTRACT
Purpose: To understand the experience, involvement, and perceived importance of research among allied health professions and identify how robust research culture might be established in secondary care. **Method:** Analyses were carried out on quantitative and qualitative data using an online questionnaire disseminated to allied health professionals working in a national health service trust in the north of England. Logistic regression was used to ascertain whether Agenda for Change banding and profession significantly influenced research qualifications, experience, and interest. Qualitative data was analysed within a theoretical framework that focused on, career development, job satisfaction and clinical practice. **Results:** Educational attainment, research experience and interest were significantly greater among allied health professionals in higher Agenda for Change bands. **Conclusions:** Involvement in research provides allied health professionals opportunities for career development, job satisfaction and meaningful clinical impact. National Health Service Trusts should provide infrastructure to support research activity in recognition of their skills and potential to increase research capacity for the benefit of patients.

Keywords: allied health occupations, health, research, health workforce

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INTRODUCTION

Research is essential in fostering an education and learning environment within healthcare organisations and is fundamental in our understanding of best practice and the development of service improvement initiatives.[1,2] Furthermore, a positive association has been found between hospital research activity, patient outcomes, and patients' confidence in the care they receive.[2,3,4,5]

Background

Research in Secondary Care

The National Health Service (NHS) in the UK is divided into primary, secondary, and tertiary care. Secondary care includes elective (planned) or emergency care provided by community providers or acute hospitals. Research can provide assurance that current models of care in secondary care are evidence-based.[6] Likewise, practice can identify where evidence is lacking and pave the way for future research. However, only a small proportion of research studies are translated into clinical guidelines and Balas and Boren report that only 14% of primary research becomes embedded in practice for the benefit of patients. They suggest that to remedy this, clinicians need to be more involved in developing programmes of research and actively contribute to the evidence base.[7]

Allied Health Professions (AHPs) Involvement in Research

The term Allied Health Professions describes 14 professions who along with other scientific, therapeutic, and technical staff constitute approximately one third (155,158) of all UK professionally qualified non-medical clinical staff (508,626).[8] AHPs have much to offer when it comes to research, particularly considering the wide range of conditions they serve in the context of secondary care. AHPs each have a unique role to play in terms of patient care and as such, unique perspectives on healthcare intervention and innovation.[9]

AHPs are governed by the Health and Care Professions Council (HCPC) and in order to maintain their registration, AHPs must demonstrate how they incorporate evidence-based practice when delivering patient care.[10] Pre-registration curricula for AHPs must also include the development of research skills.[11] Once qualified, individuals are expected to continue to develop their research knowledge and skills as part of their continuous professional development.[12] AfC (Agenda for change) is a system used to determine compensation (pay) using a Knowledge and Skills Framework (KSF) that considers the knowledge, skills, and level of experience required of any NHS role other than medical and dental staff. This framework underpins the NHS pay spine that includes stepwise payment points that are grouped according to a lower and upper value. These groups are commonly referred to as AfC bands. AfC (Agenda for change) banding and consequently salary, is positively associated with qualifications, skills, and level of experience across 4-pillars of practice; clinical, education, leadership, and research.[13]. AHP involvement in research is encouraged within and across professions and is evident in the development and promotion of national campaigns. For example, 'AHPs into Action', a campaign that sought to emphasise the value of AHPs and ways in which AHPs could contribute to patient care. The campaign encouraged organisations and individuals to think differently as to how AHP skills could be better utilised.[14] Likewise, the National Institute of Health Research (NIHR) funded the development of a framework for AHP research 'Shaping Better Practice through Research: A Practitioner Framework' to provide further guidance around AHP involvement in research.[15]

Barriers and Enablers to AHP Involvement in Research

Despite there being a drive towards AHP involvement in research, the extent to which this is realised is largely dependent on the opportunities afforded to AHPs in their place of work. Historically, AHPs have been underrepresented when it comes to research despite their potential to contribute to the evidence base. Organisations have been encouraged to create capacity for AHP research involvement as well as addressing other barriers to AHP involvement in research such as: perceived lack of skills, lack of resources and funding.[16,17]

Several intrinsic and extrinsic motivational factors have been identified as influential in terms of AHP's involvement in research endeavours including funding, education and training opportunities, supportive management, protected time for research, job satisfaction, career advancement and knowledge acquisition in support of clinical practice.[18]

To establish a positive research culture across organisations, it is important to first understand the current position. In doing so, this will provide an opportunity to identify a 'realistic' approach to facilitating greater AHP involvement in research.

Aim of this Study

The aim of this study is to understand the level of expertise, interest, and research potential within the AHP workforce across our NHS Trust.

Objectives

1. To establish the level of research experience within the AHP workforce across our NHS Trust
2. To quantify the level of research interest within the AHP workforce across our NHS Trust

3. To ascertain whether involvement in research is considered important among the AHP workforce across our NHS Trust with regards to, career development, job satisfaction and clinical practice

METHODS

All AHP staff including Assistant Practitioners employed by an NHS Trust in the North of England were invited to take part in a newly developed online questionnaire using Survey Monkey (http://www.surveymonkey.com) to understand the level of expertise, interest and research potential within the AHP workforce.[8] A pilot questionnaire was carried out with a small group of AHP staff to check the accuracy and efficiency of the questionnaire. The final questionnaire included 12 questions that captured both quantitative and qualitative data relating to key influential factors previously identified in the research literature.

Statistical Analyses

IBM SPSS Statistics for Windows, Version 28.0 was used to generate descriptive statistics.[19] These were reported according to AfC band and profession for postgraduate qualifications (PGDip, MSc/MBA, MPhil, PhD) and the following research credentials based on commonly held research positions and standard measures of research activity in healthcare organisations:[20]

- Held a research role (Informal role, Research Assistant, Research Fellow, Senior Research Fellow, Primary Investigator, Director of Research).
- Research experience (published a journal article, presented a research poster, applied for research grant/funding)

Descriptive statistics for the numbers interested in research and the perceived impact on career development, job satisfaction and clinical practice are also reported.

Logistic regression was performed to compare the effect of banding and profession (independent variables) on postgraduate qualifications, having held a research role, research experience and research interest (dependent variables). This method helps identify whether different components of the independent variables have a significant impact on the dependent variables.

Qualitative analyses

Qualitative data obtained via the questionnaire was manually analysed thematically, an analytical approach consistent with an interpretive description methodology.[21] The aim of the qualitative analysis was to generate theory (inductive) in relation to participants' responses to open questions surrounding research in three key areas: Career development, Job satisfaction and Clinical practice.[22] Researchers (SB and LB) coded the open responses to questions included in the questionnaire line-by-line; this was an iterative process whereby the coding framework was continually revised and redeveloped.

RESULTS

Quantitative data is presented to address the following research objectives:

- To establish the level of research experience within the AHP workforce across our NHS Trust
- To quantify the level of research interest within the AHP workforce across our NHS Trust

Both quantitative and qualitative data is presented to address the following research objective:

- To ascertain whether involvement in research is considered important among the AHP workforce across our NHS Trust with regards to career development, job satisfaction, and clinical practice

Several key themes emerged from the qualitative analyses: role enrichment, educational attainment, positive challenge, finding meaning, impact, advancing practice, lack of encouragement, current role constraints and confidence.

Participants

Using convenience sampling based on staff availability and willingness to take part, 178 staff responded to the AHP Research Questionnaire representing approximately 1/3 of the overall Trust AHP workforce. The participant profile and logistic regression analyses to assess the effect of AfC banding and profession on the likelihood of having postgraduate qualifications, having held a research role, having had research experience, and interest in research for career development, job satisfaction and clinical practice are illustrated in tables 1 and 2 respectively[13].

Table 1: Effect of banding and profession on research credentials

		Postgraduate qualifications				Held a research role				Research experience			
Banding	***N*** **(%)**	**No (%)**	**Yes (%)**	**OR (95% C.I)**	**p-value**	**No (%)**	**Yes (%)**	**OR (95% C.I)**	**p-value**	**No (%)**	**Yes (%)**	**OR (95% C.I)**	**p-value**
Non-registered#	16 (9)	14 (87.5)	2 (12.5)	1.00		14 (87.5)	2 (12.5)	1.00		14 (87.5)	2 (12.5)	1.00	
5	30 (16.9)	17 (56.7)	13 (43.3)	5.35 (1.03-27.82)	.046	20 (66.7)	10 (33.3)	3.50 (0.66-18.50)	.140	17 (56.7)	13 (43.3)	5.35 (1.03-27.82)	.046
6	86 (48.3)	51 (59.3)	35 (40.7)	4.80 (1.03-22.47)	.046	68 (79.1)	18 (20.9)	1.85 (0.39-8.91)	.441	58 (67.4)	28 (32.6)	3.38 (0.72-15.9)	.123
7	36 (20.2)	24 (66.7)	12 (33.3)	3.50 (0.68-19.97)	.133	30 (83.3)	6 (16.7)	1.40 (0.25-7.83)	.702	22 (61.1)	14 (38.9)	4.46 (0.88-22.65)	.072
8 and above	10 (5.6)	1 (10)	9 (90)	63.00 (4.96-800.68)	.001	4 (40)	6 (60)	10.50 (1.50-73.67)	.018	2 (20)	8 (80)	28.00 (3.28-238.90)	.002
Totals	178 (100)	107 (60.1)	71 (39.9)			136 (76.4)	42 (23.6)			113 (63.5)	65 (36.5)		
		X^2(4, N=178) = 17.8, p = .001, R = .128				X^2(4, N=178) = 10.1, p = .038, R = .083				X^2(4, N=178) = 13.9, p = .008, R = .103			
Profession	***N*** **(%)**												
Assistant Practitioner#	14 (7.9)	12 (85.7)	2 (14.3)	1.00		13 (92.9)	1 (7.1)	1.00		13 (92.9)	1 (7.1)	1.00	
Dietitian	25 (14)	14 (56)	11 (44)	4.71 (0.87-25.61)	.073	19 (76)	6 (24)	4.11 (0.44-38.23)	.215	14 (56)	11 (44)	10.21 (1.15-90.53)	.037
Occupational Therapist	32 (18)	22 (68.8)	10 (31.3)	2.73 (0.51-14.53)	.240	24 (75)	8 (25)	4.33 (0.49-38.55)	.189	26 (81.3)	6 (18.8)	3.00 (0.33-27.60)	.332
Physiotherapist	67 (37.6)	38 (56.7)	29 (43.3)	4.58 (0.95-22.08)	.058	51 (76.1)	16 (23.9)	4.08 (0.49-33.64)	.192	39 (58.2)	28 (41.8)	9.33 (1.15-75.54)	.036
Radiographer	9 (5.1)	3 (33.3)	6 (66.7)	12.00 (1.56-92.08)	.017	9 (100)	0 (0)	0.00 (0.00-0.00)	.999	5 (55.6)	4 (44.4)	10.40 (0.92-117.18)	.058
Speech & Language Therapist	13 (7.3)	9 (69.2)	4 (30.8)	2.67 (0.40-17.91)	.313	7 (53.8)	6 (46.2)	11.14 (1.11-112.01)	.041	7 (53.8)	6 (46.2)	11.14 (1.11-112.01)	.041
Other†	16 (9)	8 (50)	8 (50)	6.00 (1.00-35.91)	.050	11 (68.8)	5 (31.3)	5.91 (0.60-58.48)	.129	7 (43.8)	9 (56.3)	16.71 (1.74-160.35)	.015
Missing	2 (1.1)	1 (50)	1 (50)	6.00 (0.26-140.05)	.265	2 (100)	0 (0)	0.00 (0.00-0.00)	.999	2 (100)	0 (0)	0.00 (0.00-0.00)	.999
Totals	178 (100)	107 (60.1)	71 (39.9)			136 (76.4)	42 (23.6)			113 (63.5)	65 (36.5)		
		X^2(7, N=178) = 9.8, p = .202, R = .072				X^2(7, N=178) = 12.3, p = .092, R = .100				X^2(7, N=178) = 17.7, p = .012, R = .131			

Comparator group, † Other includes Operating Department Practitioners (n = 8), Ophthalmologists (n = 1), Biomedical Scientists (n = 7)

Table 2: Effect of banding and profession on research interest

		Interested in research for career development				Research involvement would improve job satisfaction				Considers research involvement critical to practice			
Banding	***N* (%)**	**No (%)**	**Yes (%)**	**OR (95% C.I)**	**p-value**	**No (%)**	**Yes (%)**	**OR (95% C.I)**	**p-value**	**No (%)**	**Yes (%)**	**OR (95% C.I)**	**p-value**
Non-registered#	16 (9)	12 (75)	4 (25)	1.00		8 (50)	8 (50)	1.00		6 (37.5)	10 (62.5)	1.00	
5	30 (16.9)	11 (36.7)	19 (63.3)	5.18 (1.34-20.06)	.017	13 (43.3)	17 (56.7)	1.31 (0.39-4.42)	.666	11 (36.7)	19 (63.3)	1.04 (0.30-3.64)	.956
6	86 (48.3)	25 (29.1)	61 (70.9)	7.32 (2.15-24.88)	.001	24 (27.9)	62 (72.1)	2.58 (0.87-7.66)	.087	40 (46.5)	46 (53.5)	0.69 (0.23-2.07)	.507
7	36 (20.2)	8 (22.2)	28 (77.8)	10.50 (2.65-41.64)	<.001	12 (33.3)	24 (66.7)	2.00 (0.60-6.64)	.258	10 (27.8)	26 (72.2)	1.56 (0.45-5.43)	.485
8 and above	10 (5.6)	1 (10)	9 (90)	27.00 (2.56-284.70)	.006	1 (10)	9 (90)	9.00 (0.91-88.58)	.060	1 (10)	9 (90)	5.40 (0.54-53.89)	.151
Totals	178 (100)	57 (32)	121 (68)			58 (32.6)	120 (67.4)			68 (38.2)	110 (61.8)		
		$X^2(4, N=178) = 17.5, p = .002, R = .131$				$X^2(4, N=178) = 7.3, p = .121, R = .056$				$X^2(4, N=178) = 8.3, p = .081, R = .062$			
Profession	***N* (%)**												
Assistant Practitioner#	14 (7.9)	11 (78.6)	3 (21.4)	1.00		7 (50)	7 (50)	1.00		5 (35.7)	9 (64.3)	1.00	
Dietitian	25 (14)	6 (24)	19 (76)	11.61 (2.41-55.94)	.002	7 (28)	18 (72)	2.57 (0.66-10.06)	.175	8 (32)	17 (68)	1.18 (0.30-4.69)	.813
Occupational Therapist	32 (18)	10 (31.3)	22 (68.8)	8.07 (1.84-35.41)	.006	10 (31.3)	22 (68.8)	2.20 (0.61-7.97)	.230	12 (37.5)	20 (62.5)	0.93 (0.25-3.42)	.908
Physiotherapist	67 (37.6)	19 (28.4)	48 (71.6)	9.26 (2.32-36.92)	.002	24 (35.8)	43 (64.2)	1.79 (0.56-5.72)	.325	30 (44.8)	37 (55.2)	0.69 (0.21-2.26)	.535
Radiographer	9 (5.1)	2 (22.2)	7 (77.8)	12.83 (1.70-97.19)	.013	2 (22.2)	7 (77.8)	3.50 (0.53-23.14)	.194	5 (55.6)	4 (44.4)	0.44 (0.08-2.46)	.353
Speech & Language Therapist	13 (7.3)	3 (23.1)	10 (76.9)	12.22 (1.99-75.06)	.007	3 (23.1)	10 (76.9)	3.33 (0.63-17.57)	.156	2 (15.4)	11 (84.6)	3.06 (0.48-19.66)	.240
Other†	16 (9)	4 (25)	12 (75)	11.00 (2.00-60.57)	.006	4 (25)	12 (75)	3.00 (0.64-14.02)	.163	4 (25)	12 (75)	1.67 (0.35-8.04)	.525
Missing	2 (1.1)	2 (100)	0 (0)	0.00 (0.0-0.0)	.999	1 (50	1 (50)	1.00 (0.05-19.36)	1.00	2 (100)	0 (0)	0.00 (0.0-0.0)	.999
Totals	178 (100)	57 (32)	121 (68)			58 (32.6)	120 (67.4)			68 (38.2)	110 (61.8)		
		$X^2(7, N=178) = 19.9, p = .006, R = .148$				$X^2(7, N=178) = 4.13, p = .764, R = .032$				$X^2(7, N=178) = 11.2, p = .132, R = .083$			

Comparator group, † Other includes Operating Department Practitioners (n = 8), Ophthalmologists (n = 1), Biomedical Scientists (n = 7)

Research Experience

There was a significant difference in whether individuals had postgraduate qualifications according to banding, $X^2(4, N=178) = 17.8$, p = .001, the model explained 12.8% of the variation in qualifications (Nagelkerke R^2) and correctly predicted 64.6% of cases. The odds of having postgraduate qualifications were 5.35 times greater at band 5 (C.I: 1.03-27.82, p = .046), 4.80 times greater at band 6 (C.I: 1.03-22.47, p = .046), and 63 times greater at band 8 and above (C.I: 4.96-900.68, p = .001) when compared to non-registered staff, the difference at band 7 was insignificant (p = .133). No significant difference was found according to profession, $X^2(7, N=178) = 9.8$, p = .202.

Whether or not individuals had held a research role was found to differ significantly according to banding, $X^2(4, N=178) = 10.1$, p = .038, the model explained 8.3% of the variation (Nagelkerke R^2) and correctly predicted 77.5% of cases. The odds of having held a research role was only found to be statistically significant at band 8 and above with those staff 10.5 times more likely to have held a research role in comparison to non-registered staff. No significant difference was found according to profession, $X^2(7, N=178) = 12.3$, p = .092.

A significant difference was found in terms of research experience according to banding, $X^2(4, N=178) = 13.9$, p = .008, the model explained 10.3% of the variation in experience (Nagelkerke R^2) and correctly predicted 66.9% of cases. The odds of having research experience were 5.35 times greater at band 5 (C.I: 1.03-27.82, p = .46), and 28.00 times greater at band 8 and above (C.I: 3.28-238.90, p = .002) when compared to non-registered staff. The difference at band 6 (p = .123) and band 7 (p = .072) was insignificant. Differences according to profession were also found to be significant, $X^2(7, N=178) = 17.7$, p = .012, the model explained 13.1% of the variation in experience (Nagelkerke R^2) and correctly predicted 64.6% of cases. The odds of having research experience was 10.21 greater among Dietitians (C.I: 1.15-90.53, p = .037), 9.33 times greater among Physiotherapists (C.I: 1.15-75.54, p = .036), 11.14 times greater among Speech and Language Therapists (C.I: 1.11-112.01, p = .0.41), and 16.71 times greater among other HCPC registered staff combined (Operating Department Practitioners, Ophthalmologists, Biomedical Scientists) (C.I: 1.74-160.35, p = .015) when compared to Assistant Practitioners. The difference in comparison to Occupational Therapists (p = .332) and Radiographers (p = .058) was insignificant.

Research Interest and Career Development

Respondents were interested in supporting, facilitating, and finding out more about research with most (68%) interested in research for career development purposes.

There was a significant difference in whether individuals viewed research as important for career progression according to banding, X2(4, N=178) = 17.5, p = .002, the model explained 13.1% of the variation in perception (Nagelkerke R^2) and correctly predicted 72.5% of cases. The odds of believing research to be important for career progression was 5.18 greater at band 5 (C.I: 1.34-20.06, p = .017), 7.32 times greater at band 6 (C.I: 2.15-24.88, p = .001), 10.5 times greater at band 7 (C.I: 2.65-41.64, p = <.001), and 27.0 times greater at band 8 and above (C.I: 2.56-284.70, p = .006) when compared to non-registered staff. Similarly, there was a significant difference in whether individuals felt research was important to their career according to profession, $X^2(7, N=178) = 19.9$, p = .006, the model explained 14.8% of the variation in perception (Nagelkerke R^2) and correctly predicted 73.6% of cases. The odds of believing research to important for career progression was 11.61 times more likely among Dietitians (C.I: 2.14-55.94, p = .002), 8.07 times more likely among Occupational Therapists (C.I: 1.84-35.41, p = .006), 9.26 times more likely among Physiotherapists (C.I: 2.32-36.92, p = .002), 12.83 times more likely among Radiographers (C.I: 1.70-97.19, p = .013), 12.22 times more likely among Speech and Language Therapists (C.I: 1.99-75.06, p = .007), and 11.00 times more likely among other HCPC registered staff combined (Operating Department Practitioners, Ophthalmologists, Biomedical Scientists) (C.I: 2.00-60.57, p = .006) when compared to Assistant Practitioners.

Complementary qualitative data from the questionnaire further explained how AHPs viewed research in relation to career development. Themes that emerged from the qualitative data relating to career development included role enrichment, educational attainment, and lack of encouragement.

Role Enrichment

AHP staff recognised the wider benefits of research with regards to service delivery, staff retention and satisfaction. Each of which undoubtedly indirectly impact on their own ability to carry out research.

> *"It is important for service development, staff retention and job satisfaction"* (Band 7 Speech and Language Therapist)

Research provided an opportunity for staff to be intellectually curious and this increased their sense of gratification not otherwise felt.

> *"Research helps me be more excited about my job"* (Band 6 Dietitian)

> *"Research provides enrichment to a clinical role…"* (Band 6 Dietitian)

Educational Attainment

Research was seen as an avenue with which to gain further qualifications and as a route for those considering a clinical academic career.

> *"I would like it as an MSc"* (Band 5 Physiotherapist)

> *"I am interested in in an academic/clinical career and the possibility of teaching or lecturing"* (Band 8 Occupational Therapist)

However, there was an underlying perception that research and clinical practice could not run concurrently. Likewise, even staff who expressed an interest in an academic career described teaching and research as separate entities.

> *"Plan to become involved in research as my career progresses. Previously considered a PhD but wanted to gain further clinical experience first"* (Band 6 Physiotherapist)

> *"I would like to pursue a career in research or teaching…"* (Band 6 Dietitian)

Lack of Encouragement

Approval from senior managers was often described as prohibitive to research involvement.

> *"Would love to start a PhD but limited by my line managers approval and staff shortages"* (Band 5 Biomedical Scientist)

Similarly, lack of positive reinforcement from senior managers with regards to research endeavours and perceived lack of ability meant staff felt ill-equipped to pursue their research aspirations.

> *"I would love research to be part of my future career development/progression, I just don't feel I have the skills, resources or direction"* (Band 6 Physiotherapist)

> *"Really interested and keen but just don't have the confidence to get going with something"* (Band 7 Occupational Therapist)

There appeared to be a level of naivety when it came to research and how involvement in research might influence individuals' career trajectory.

> *"Not sure there was an option for research to be part of my future career development/progression"* (Band 5 Occupational Therapist)

Research Interest and Job Satisfaction

Most staff (67%) felt that involvement in research would improve their overall job satisfaction.

There was no significant difference in whether individuals viewed research important for job satisfaction according to banding, $X^2(4, N=178) = 7.3$, $p = .121$, or profession, $X^2(7, N=178) = 4.13$, $p = .764$.

Qualitative data from the questionnaire provided supporting information on AHPs' perceptions of research and job satisfaction. Themes emerging from the qualitative data concerning job satisfaction included positive challenge, finding meaning, impact and current role constraints.

Positive Challenge

Research provided staff variety in their everyday roles and challenged them to keep abreast of new developments in their area of practice. This was particularly important in terms of maintaining currency of clinical practice for professional registration purposes and to be able to provide support for others.

> *"I enjoy new challenges and tasks to keep everything fresh"* (Band 5 Operating Department Practitioner)

> *"I have been qualified a long time, I need to keep current, do CPD and do a supervision role"* (Band 6 Occupational Therapist)

Finding Meaning

AHP staff described involvement in meaningful research as an avenue with which to increase variety, interest, and overall enjoyment in their role.

> *"It would be an opportunity to do something different to the day to day"* (Band 7 Dietitian)

> *"…it [research] can make things more interesting"* (Band 3 Assistant Practitioner)

Staff described how research had the potential to further add to their sense of purpose and an opportunity to develop themselves.

> *"It would give more meaning, working towards something"* (Band 2 Assistant Practitioner)

> *"I feel this would provide variety in my role and I would gain more skills"* (Band 6 Dietitian)

Impact

Service development and the opportunities afforded by research was highlighted by staff. Recognition as to the benefit of research for the purposes of improving patient care was evident.

> *"Research can lead to service improvement, development or the start of new services that have patient benefit"* (Band 6 Dietitian)

> *"Being part of evidencing what we do to continue to strive to improve patient outcomes"* (Band 7 Physiotherapist)

> *"I feel research can make a real difference in improving patient experience"* (Band 6 Occupational Therapist)

Current Role Constraints

Several staff described how research did not appear to be embedded as part of everyday practice and was considered divergent from their operational or clinical role.

> *"Historically it hasn't been encouraged in an operational role"* (Band 7 Physiotherapist)

> *"Possibly…I need to concentrate on patient related work as I feel overwhelmed with all I have to do as it is"* (Band 6 Speech and Language Therapist)

Despite staff acknowledging the links between research and practice, there was a perception that AHP staff had fewer opportunities to be actively involved in research activity. Furthermore, having dedicated time for research was identified as problematic.

> *"Enormously, I feel that [We] have been pushed at the back of the queue for research opportunities, however our whole practice is based on the latest evidence"* (Band 5 Biomedical Scientist)

> *"Only if it had very protected time and other elements of my role were passed on…"* (Band 7 Speech and Language Therapist)

Research and Clinical Practice

62% of Participants acknowledged that research formed a critical component of their clinical practice.

There was no significant difference in whether individuals viewed research important for clinical practice according to banding, $X^2(4, N=178) = 8.3$, p = .081, R = .062, or profession $X^2(7, N=178) = 11.2$, p = .132, R = .083.

Corresponding qualitative data from the questionnaire highlighted advancing practice and confidence as two aspects related to clinical practice that AHPs associated with research activity.

Advancing Practice

There was considerable enthusiasm with regards to the value of research in enhancing practice. In addition, there was a sense of tenacity in relation to AHPs involvement in research with a view to broadening the research viewpoint from that of only medical and nursing staff.

> *"Without research, clinical advancements are not possible…."* (Band 6 Physiotherapist)

"We need to critically appraise new research in order to apply evidence-based practice" (Band 6 Physiotherapist)

"…I think it is crucial that [we] are involved within research as [our] perspective is often different to the medical teams" (Band 7 Operating Department Practitioner)

Confidence

Research confidence was a factor as to whether staff pursued research opportunities, despite understanding the crucial nature of healthcare research. Educational attainment and research confidence appeared to be intertwined and this led to some individuals feeling they would lack the capability to carry out research.

"I feel it is critical but generally don't have the time or know how of how to conduct research" (Band 6 Dietitian)

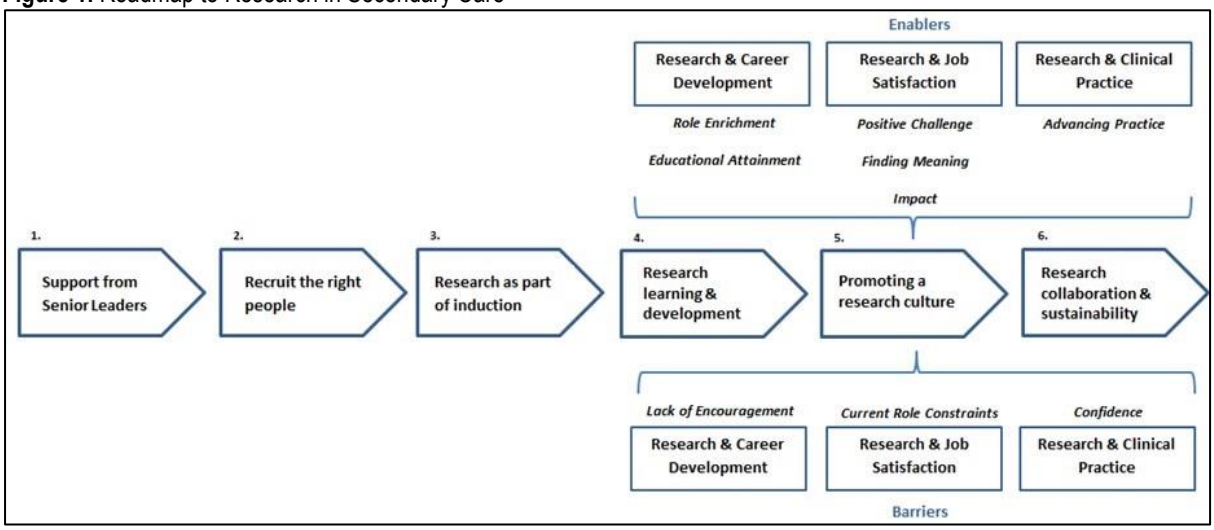
"I feel like further education in general is critical to my practice, more so than research…I haven't completed any study since an undergraduate course, research feels like a step too far" (Band 6 Dietitian)

DISCUSSION

We sought to understand the level of expertise, interest, and research potential within the AHP workforce. We were able to establish that a significant proportion (40%) of AHP staff had postgraduate qualifications and that approximately one-third (37%) had some research experience with significant variation ($p<0.05$) across professions and according to band with those in more senior positions having more research experience. Similarly, we were able to quantify a high level (80%) of interest in research among AHPs with those at higher bands showing greater levels of interest than junior colleagues. Research was considered important by the majority in terms of career development (68%) with role enrichment and educational attainment emerging as themes positively associated with research and lack of encouragement as a barrier to research. More than two-thirds of respondents (67%) felt research improved their job satisfaction and other than role constraints, themes that emerged were positively associated with research including positive challenge, finding meaning and impact. Most staff (62%) acknowledged the value of research, particularly in relation to advancing practice but emphasised a lack of confidence in their research abilities.

Our findings highlight that AHPs are underrepresented in terms of their involvement in research activity across our Trust with a relatively modest proportion (24%) having held a research role. This, despite AHPs having the necessary education, skills, and desire to be involved in research activity and the likelihood that respondents had a vested interest in research. We identified that in order to embed AHP research across our NHS Trust, there were a number of factors that warranted further consideration. We created an 'AHP Roadmap to Research in Secondary Care' (See figure 1) that outlines key steps for strategic decision makers that will enable them to develop a robust culture of research in secondary care based on our research findings and the Allied Health Professions' Research and Innovation Strategy for England.[16]

Figure 1. Roadmap to Research in Secondary Care



The following section provides an overview of the key components illustrated in the "AHP Roadmap to Research in Secondary Care." Overall, each of these aspects highlight the importance of raising awareness as to the importance of research in secondary care as well as providing examples of how AHPs can contribute to organisational research endeavours.

Support From Senior Leaders
Our study identified apprehension among staff when it came to gaining the necessary approval to pursue educational qualifications and, or involvement in research. Senior leaders need to be fully apprised of the benefits of research for patients and staff alike. Gaining the support of senior leaders is imperative since it is they who can influence and effectuate the necessary infrastructure required to support research activity, evidence suggests that for organisational change to be successful it requires "collective leadership".[23]

Recruit the Right People
Ensuring that research skills are sought after and valued in potential candidates is necessary in order to increase the number of research aware and research active AHPs in organisations. The Health and Care Professions Council (HCPC) states that all registrants must meet the "standards of proficiency… relevant to their scope of practice". Research is recognised within the standards and registrants need to provide evidence of having critically evaluated the research literature, drawn on their clinical reasoning and problem-solving skills, and adapted their practice accordingly.[10]

Therefore, including research requirements commensurate to role in job adverts, job descriptions, person specifications and shortlisting criteria is warranted.

Research as Part of Induction
Setting out organisational priorities and expectations as part of the induction process should include research as one of the 4 Pillars of Practice: Clinical, Leadership, Education, Research.[24] Early establishment of a research development pathway to include Good Clinical Practice and Consent training is likely to encourage involvement in quality research.[25] Furthermore, induction has been identified as a key opportunity to engage staff in understanding organisational culture and aspirations whilst simultaneously setting expectations in relation to staff behaviour.[26]

Research Learning and Development Opportunities
Ensuring staff have equal opportunity to develop their research skills and knowledge is critical to increasing research capacity.[27] In addition to the professional registration requirements for AHPs, our findings suggest that individuals themselves recognise the importance of research in terms of their career trajectory, job satisfaction and clinical practice. Several staff expressed a desire to pursue a career in clinical education. Therefore, joint clinical academic appointments alongside in-house research opportunities and involvement in research provides an opportunity with which to tackle the challenges associated with recruitment and retention of the AHP workforce.[28]

Promoting a Research Culture
Staff working in clinical environments often report facing a dilemma when looking to get involved in research since this is seen as somewhat of a luxury/indulgence or less important than spending time on face-to-face patient contact.[29] Acknowledging and promoting research as an essential component of patient care with emphasis on the positive impact for both staff and patients alike is necessary for it to become embedded in everyday practice.[30] Formalising time in job plans in order to create time and space for staff is important so that research is not considered to be something in addition to everyday working practices. Indeed, research should be considered as something that is intertwined with everyday practice.

Research Collaboration and Sustainability
Research cannot be done in isolation and creating opportunities for multidisciplinary groups to come together to explore potential research collaborations is valuable to benefit from a broad research perspective, range of experience and expertise.[1] Furthermore, collaborative working provides a platform for the development of multi-professional research competencies, talent management and succession planning in relation to research activity.[31]

Limitations
There are several limitations associated with this study, the first concerns our method of sampling. Non-probability convenience sampling is prone to volunteer bias and those who chose to take part may not be representative of all AHPs. The second limitation relates to the overall sample size and reliance on a single study site. Thirdly, using an online questionnaire may have precluded some participants and others may have misinterpreted, skipped, or provided dishonest answers to questions. Future studies should consider multiple convenience samples across different locations to allow data to be pooled providing a more representative sample.[32] In addition, alternative methods of data collection could be used in order to triangulate the research findings to increase reliability and credibility.[33] Notwithstanding these limitations, convenience sampling and the use of an online questionnaire provided a straightforward, cost-effective method of recruiting sufficient participants generating data relevant to local decision makers.

CONCLUSION
We have demonstrated that AHPs *can* and *should* be involved in research and furthermore, that AHPs themselves *want* to be research active. Having a robust culture of research in NHS organisations necessitates having an infrastructure that is

supported by senior leaders, includes research as part of recruitment and induction, encourages research development and learning, actively promotes a research culture, and seeks research collaborations. Equally important is recognising the positive impact of research on career development, job satisfaction and clinical practice. Facilitating research involvement among AHPs and addressing barriers prohibiting research involvement has the potential to increase recruitment and retention whilst simultaneously improving patient care.

Declaration of interest statement
The authors report there are no competing interests to declare.
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