ORIGINAL RESEARCH

Motivators, enablers, and barriers to building allied health research capacity

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Purpose: A sound, scientific base of high quality research is needed to inform service planning and decision making and enable improved policy and practice. However, some areas of health practice, particularly many of the allied health areas, are generally considered to have a low evidence base. In order to successfully build research capacity in allied health, a clearer understanding is required of what assists and encourages research as well as the barriers and challenges.

Participants and methods: This study used written surveys to collect data relating to motivators, enablers, and barriers to research capacity building. Respondents were asked to answer questions relating to them as individuals and other questions relating to their team. Allied health professionals were recruited from multidisciplinary primary health care teams in Queensland Health. Eighty-five participants from ten healthcare teams completed a written version of the research capacity and culture survey.

Results: The results of this study indicate that individual allied health professionals are more likely to report being motivated to do research by intrinsic factors such as a strong interest in research. Barriers they identified to research are more likely to be extrinsic factors such as workload and lack of time. Allied health professionals identified some additional factors that impact on their research capacity than those reported in the literature, such as a desire to keep at the "cutting edge" and a lack of exposure to research. Some of the factors influencing individuals to do research were different to those influencing teams. These results are discussed with reference to organizational behavior and theories of motivation.

Conclusion: Supporting already motivated allied health professional individuals and teams to conduct research by increased skills training, infrastructure, and quarantined time is likely to produce better outcomes for research capacity building investment.

Keywords: research capacity building, allied health professionals, motivation theory

Introduction

Some areas of health practice, particularly many of the allied health areas, are often referred to as "research emergent." They lack a solid tradition of research and hence the infrastructure to provide the evidence for evidence-based practice.[1–4] This lack of evidence often results from underfunding and research that is less likely to be considered for publication.[5] A sound, scientific base of high quality research is needed to inform service planning and decision making and improve policy and practice.[6,7]

Building the capacity to undertake research in health systems is a priority,[8–10] however, there are considerable difficulties to overcome. The health service sector has

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the potential to be an excellent context for carrying out high quality research where professionals with research skills connect closely with patients; however, difficulties include a lack of a clear set of research competencies, pressure of clinical caseloads, the complex multidisciplinary nature of health interventions, and lack of access to research training.[6]

Research capacity is a multilevel concept that exists at individual, team, and institution or organization levels. It is also multifactorial and includes elements such as researchers, research culture, environment and infrastructure, funding, and partnerships.[11–13] Research capacity building (RCB) aims "to augment the ability to carry out research or achieve objectives in the field of research over the long term, with aspects of social change as an ultimate outcome."[14] The literature describes several generalized approaches to building research capacity that employ extrinsic rewards as enablers and include programs based on single or multiple strategies of organizational learning,[15,16] partnerships,[17,18] mentoring,[9,19] and bursaries.[20]

Allied health is a diverse group of health professionals that share particular challenges with research. Shared difficulties include the paucity and patchiness of large-scale studies, polarity of opinions about qualitative and quantitative methodologies, the lack of quality and generalizability of evidence, and practical problems such as lack of time, skills, and resources.[6] Similarly, allied health also share common needs for RCB.

Policy initiatives have been introduced in the United Kingdom since 1995 to build research capacity in allied health through a national coordinated approach rather than ad hoc initiatives.[6,21,22] This need to build research capacity in allied health has also been recognized in Australia,[23,24] with increasing support for a whole systems approach and, in particular, a need to focus on research conducted through allied health, with allied health, and by allied health.[6]

The outcomes of RCB initiatives reported in the literature use a variety of traditional research output measures such as grants received and papers published,[9,24] as well as nontraditional measures such as network relationships[25] and professional contribution.[26] The literature has been criticized for focusing on the challenges of developing capacity, presenting generalized or ad hoc solutions, and telling us little about how the RCB process varies geographically and between different settings and professional groups.[18,27] Previous studies have explored barriers to research in academic settings,[2,12] in individual professional groups,[18,28–30] or in a particular field of health,[11,31–33] but not in large multidisciplinary groups of allied health in health care settings.

In order to build research capacity in allied health, a clearer understanding is required of the motivators and enablers to research as well as the barriers. Theories of motivation are described in the organizational behavior literature and used to explain the behavior of people in the workplace. These include needs-based theories such as Maslow's hierarchy of needs,[34] represented as a pyramid with fundamental physiological needs at the bottom and esteem and self-actualization needs at the top, and cognitive theories such as Herzberg's two-factor theory,[35] which identifies certain factors in the workplace that cause job satisfaction and a separate set of factors that act independently and cause job dissatisfaction. Theories of motivation are also useful for predicting attitudes and responses to major change in work settings and as such may provide useful insights when applied to RCB.

The aim of this research was to develop a better understanding of how motivators, enablers, and barriers impact on research for allied health in health care settings. In addition, the study aimed to increase understanding of the factors influencing individual allied health professionals (AHPs) to do research and factors influencing allied health teams to do research.

Methods

This study reports on cross-sectional data collected between December 2008 and June 2009 relating to motivators, enablers, and barriers to RCB. The data was taken from baseline surveys collected as part of a broader RCB study. The parent study evaluates an intervention to build research capacity amongst teams of AHPs working in primary health care. Other papers arising from the parent study describe the development and validation of the survey tool,[36] the role of the organization in RCB (unpublished), and an evaluation of the RCB intervention (unpublished).

Participants

For this study, all 85 participants were included from the ten intervention and control teams in the parent study. Multidisciplinary primary health care teams were recruited from within a district of Queensland Health state government services. Team leaders were initially approached with an email through a Queensland Health contact and then meetings arranged with each team to provide more information about the project. Interested teams were eligible to participate if they were predominantly AHPs, had a primary health care focus, between five and 50 staff, an idea for a research project, and at least one person with

some research experience. Written consent was obtained from participants using an informed consent package and surveys were distributed in paper format. Ethical approval was obtained from relevant Queensland Health and Griffith University ethics committees.

Data collection

Each participant completed a written version of the research capacity and culture (RCC) survey[36] which included questions about motivators, enablers, and barriers to research. These questions were not validated components of the RCC survey, but provided useful additional information to inform RCB strategy development. At the individual level, participants were asked to select from a list of 16 motivators/enablers and 17 barriers, choosing all that applied to them personally. This list was developed from a review of the research literature as well as consultation with experts in the field of health research. Participants were invited to add other items not included in the list. In addition, participants were asked to identify factors they believed would influence their team's ability to conduct research. Team level questions were open-ended as little research has been done in this area.

Data analysis

The individual level data was analyzed quantitatively. The number of times participants selected each individual level motivator, enabler, and barrier was reported descriptively. The team level written responses were analyzed qualitatively. Team level motivators, enablers, and barriers described by participants were coded by two members of the research team and key themes were reported.

Results

Study sample

Eighty-five AHP participants from ten healthcare teams completed the survey. Table 1 describes the proportion of these from different professional groups, their highest level of qualification, and whether research is in their role description. Physiotherapists and occupational therapists comprised over a third of the study sample. The types of professions in the sample and the proportion of respondents from each profession were adequately representative of the allied health workforce in health care with a slight overrepresentation of nutritionists, occupational therapists, and speech pathologists and a slight underrepresentation of physiotherapists.[37] Although only one person had a Doctor of Philosophy, 43.9% of all participants had postgraduate qualifications.

Table 1 Allied health sample by profession, highest qualification, and research in role description

	Total sample (n = 84; missing = 1)
Profession	
Allied health assistants	4
Nutritionists	13
Occupational therapists	17
Physiotherapists	14
Speech pathologists and audiologists	14
Social workers	7
Psychologists	3
Other: nurses, doctors, health promotion officers	10
Highest qualification	
Certificate	1
Undergraduate	43
Postgraduate	36
Doctor of Philosophy	1
Nil	1
	Total sample (n = 74; missing = 11)
Research in role description	
Yes	37
No	37

All participants were practicing clinicians and approximately half of them were required to do research as part of their role description.

What motivates and enables AHPs to do research?

When asked what would motivate them personally to do research, participants most commonly reported a desire to develop skills, increase job satisfaction, and address identified problems (Table 2). Other factors reported by more than half of the participants included a desire to keep their brain stimulated or advance their career, as well as enablers such as links to universities and the availability of mentors. A small proportion (less than 15% of respondents) identified the availability of study or research scholarships and having research written into their role description as enablers of research. Participants identified a number of other factors that were not listed in the question and these included motivators such as gathering evidence that is relevant to practice, increasing knowledge, keeping at the cutting edge of research in their area, and supporting a new health initiative. Each individual AHP reported an average of 6.14 motivators and enablers (interquartile range = 4–8).

Participants were also asked to describe factors they believed would motivate or enable their team to do research. Common themes were ensuring best practice in

Table 2 Motivators, enablers, and barriers for allied health research at an individual level

Question 3.5 What are the barriers to research for you personally? Tick as many as apply		Question 3.6 What are the motivators to do research for you personally? Tick as many as apply	
Barriers	**Frequency (n = 81)**	**Motivators and enablers**	**Frequency (n = 81)**
Other work roles take priority	70 (86%)	To develop skills	66 (81%)
Lack of time for research	66 (81%)	Increased job satisfaction	55 (68%)
Desire for work/life balance	46 (57%)	Problem identified that needs changing	43 (53%)
Lack of funds for research	45 (55%)	To keep the brain stimulated	38 (47%)
Lack of skills for research	44 (54%)	Career advancement	36 (44%)
Lack of suitable backfill	42 (52%)	Research encouraged by managers	36 (44%)
Lack of administrative support	40 (49%)	Links to universities	34 (42%)
Lack of software for research	33 (41%)	Mentors available to supervise	33 (41%)
Lack of a coordinated approach to research	29 (36%)	Opportunities to participate at own level	29 (36%)
Other personal commitments	28 (34%)	Desire to prove a theory or hunch	28 (34%)
Lack access to equipment for research	22 (27%)	Dedicated time for research	27 (33%)
Intimidated by research language	20 (25%)	Colleagues doing research	27 (33%)
Intimidated by fear of getting it wrong	18 (22%)	Grant funds	20 (25%)
Lack of support from management	15 (18%)	Forms part of postgraduate study	20 (25%)
Not interested in research	11 (14%)	Research written into role description	12 (15%)
Isolation	10 (12%)	Study or research scholarships	11 (14%)
Lack of library/Internet access	9 (11%)		
Other (eg, limited exposure to research, lack of access to expertise, statistical analysis, lack of knowledge)	7 (9%)	Other (eg, to gather evidence that is relevant to practice, to increase knowledge, to keep at the cutting edge, support a new health initiative)	7 (9%)

service delivery and the best outcomes for clients. AHPs also described their teams being motivated by a desire to increase their skills and knowledge, build the evidence base, and publish or present their results. Opportunity to research together as a team, led by a supportive team manager, was also an important enabler as well as the provision of practical resources such as library access and funding. Other minor themes were about a desire to do research for career advancement, recognition, and job satisfaction.

What are the barriers for AHPs to do research?

When asked what barriers to research influenced them personally, lack of time for research and other work roles taking priority were the most frequently reported barriers, as reported by more than two thirds of participants. The following barriers were also reported by more than half of the participants: a desire for work/life balance, lack of skills for research, lack of suitable backfill, and lack of funds for research. The least frequently reported barriers for individual AHPs, reported by less than 15% of respondents, were having no interest in research, isolation, and a lack of library or internet access. Other barriers identified by participants that were not on the list included lack of knowledge, limited exposure to research, and lack of

access to expertise and statistical analysis. Each individual AHP participant reported an average of 6.44 barriers (interquartile range = 4–9).

Participants were also asked to describe barriers to research for their team. Responses were grouped into four key themes:

1. Time: lack of time for research, other work roles taking priority, low staffing levels, and high staff turnover.
2. Resources and infrastructure: lack of resources especially money, administrative support, research software, and library access.
3. Skills and knowledge: lack of research skills and knowledge and access to experts and training.
4. Coordination: lack of a coordinated approach with little support from managers, colleagues, and partners causing feelings of isolation.

Discussion

This study found that a number of factors, both intrinsic and extrinsic are important motivators, enablers, and barriers to AHP individuals and teams undertaking research. Furthermore, there is variation in these factors between the individual and team levels. AHPs in this study also identified some additional factors that impact on their research capacity other than those reported in the previous literature, such as a

desire to keep at the "cutting edge" of research in their area and a lack of exposure to research.

From an individual perspective, intrinsic factors or factors that are inherent to the individual are more likely to motivate AHPs. For example, AHPs are predominantly motivated to do research because of their strong interest in research. They report that research provides them with an opportunity to develop their skills, feel more satisfied with their job, and attempt to address aspects of their work that they perceive to be problematic. This is consistent with theories of motivation that suggest research satisfies the higher order needs for self-actualization described by Maslow.[34] The challenging job of research fulfils a desire to make maximum use of skills and abilities. Results are also consistent with cognitive theories of motivation. For example, Ajzen's theory of planned behavior suggests that people's intention to do research can be explained by a positive attitude towards research, a perception of social pressure to do research, and a belief that they have the means and opportunities to do research.[38] The present findings suggest that providing AHPs with opportunities to do research is an important source of job satisfaction as well as a driver of service improvement and change. Other studies have reported similar potential gains for AHPs from research such as professional fulfillment and vitality, better practice, and acceptance of new knowledge and research that is both useful and useable.[7,30,39]

When asked to describe what motivates their team to do research, respondents identified a different set of motivators more focused around a desire to deliver the best service possible and achieve the best outcomes for their patients. The theory of planned behavior also helps to explain this difference at a team level by suggesting that social pressure or normative considerations predominate at this level.[38] This is borne out by team level reports of AHPs being motivated by other members who are interested in research and teams that have a strong culture of research.[35] Other studies of RCB have also reported on the motivating effects of teams and partnerships including a sense of trust and shared identification, opportunity to spread the load, and team-building effects such as increased support and mentoring.[6,16,25]

Barriers for individual AHPs undertaking research are more likely to be extrinsic or operating externally in their work environment, in particular a lack of time and heavy clinical workloads. A lack of time was also a key barrier to research identified at a team level and is consistent with the literature, where lack of funds and time are often reported together due to the conclusion that money buys time.[18,30,31]

Time issues are likely to be compounded by other reported workforce barriers such as large numbers of part-time staff and high levels of staff turnover and vacancy. Public health sector workload and workforce issues will continue to be significant barriers to RCB in the current environment of fiscal restraint.

In combination with being time poor, respondents also commonly reported prioritizing clinical service delivery roles and a need to balance work and other parts of their life over their desire to do research. This perception of research as an extra task in an already busy life is not surprising given events at the time of the study, which included an award restructure. AHPs were likely to have experienced reduced levels of job satisfaction as a result of several external factors including industrial disputes, workforce shortages, and widespread health reform. Herzberg's two-factor theory suggests that improving these extrinsic hygiene factors will reduce worker dissatisfaction; however, motivators related to advancement, recognition, and achievement will still be required to provide any increase in job satisfaction.[35,40]

Individual AHPs often reported that they lacked the skills to do research and this lack of confidence in research skills has also been reported in a number of other studies.[30,31] This is despite almost half of the AHP participants having acquired some form of postgraduate qualification. Other allied health studies have noted an upward drift in qualifications over the last two decades[18,21] and a positive relationship between participating in research and having advanced education.[29] Undergraduate and postgraduate courses may not always provide the necessary focus on research skills to enable AHPs to be research competent, hence there is still a need for research skills to be specifically included in continuing learning and development options for practicing clinicians. Other emerging issues reported in the literature that are likely to be significant barriers for teams of allied health, though not evident in the results of this study, are managing the role of consumers in research and the challenges of mixed methods, multidisciplinary approaches, and multinational research studies.[3,41]

The results of this study identify differences in the motivators, enablers, and barriers that operate for the individuals and teams within an organization. This suggests that a generalized or ad hoc RCB strategy is unlikely to be the most effective. An assessment of the particular set of motivators, enablers, and barriers operating within a particular setting would allow the strategy to be tailored to specific needs. This includes an understanding of the differences between the individual and team levels in the workplace and current

environmental factors that may influence the research culture. A range of strategies are required that include motivators and enablers and also measures to reduce the barriers to research. Several studies in the literature have reported success with RCB strategies that use multistrategy, multilevel coordinated approaches.[13,21,42] Results of this study add to this literature by suggesting that strategies that target those AHPs who express an intention to do research may be more efficient and effective than strategies that target the entire workforce.

This study's strength lies in its focus on allied health professions and the exploration of motivators, enablers, and barriers at both individual and team levels. It is difficult however to generalize the findings from this study to other settings given that the sample is taken from only one organization. A further limitation of this study and the prevailing literature is a lack of definition around the terms barriers and enablers. Often these terms are used interchangeably with other terms such as motivators, drivers, and challenges. The RCC tool used in this study variously uses the terms barriers, supports, and motivators. The organizational behavior literature would suggest that a distinction needs to be made between intrinsic and extrinsic factors and an understanding that factors may be a perceived rather than actual barrier, that this may change over time, and not everyone prefers highly complex and challenging jobs.[35]

This study provides insights into the key motivators, enablers, and barriers to research for AHPs in health care settings and indicates differences at individual and team levels. AHPs are more likely to be intrinsically motivated to do research and may be assisted by RCB strategies that ensure both motivators and enablers as well as barriers to research are addressed. These findings contribute to the literature by providing more detailed information specifically related to allied health to inform policy and practices that support research in health organizations. The challenge to deliver efficient and effective RCB strategies becomes increasingly important as demand for public health services continues to increase and significant economic and fiscal constraints prevail. Further research of this nature is required to better understand the complex interactions between intrinsic and extrinsic factors.

Conclusion

There are three key messages that emerge from this research. Firstly, AHPs are more likely to report being motivated to do research by intrinsic factors and the barriers they identify to research are more likely to be extrinsic factors. The factors reported by AHPs can be explained by a variety of theories

of motivation in the organizational behavior literature. Secondly, the identified motivators, enablers, and barriers are largely consistent with those reported in the literature; however, some additional factors were identified and suggest that unique sets of motivators, enablers, and barriers exist in different settings. The results also point to differences between individual and team levels within the organization. The third key message is that an efficient and effective RCB strategy would be to support already motivated AHP individuals and teams to conduct research by increased skills training, infrastructure, and quarantined time rather than the more generalized approaches taken to date.

Disclosure

The authors report no conflicts of interest in this work.

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