Impact of research activity on performance of general practices: a qualitative study.

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Abstract

Background

There is evidence that engaging in research is directly associated with better performance. If this relationship is to be strengthened, it is necessary to understand the mechanisms which might underlie that relationship.

Aim

To explore the perspectives of staff and wider stakeholders about mechanisms by which research activity might impact on the performance of general practices.

Design & Setting

Qualitative study using semi-structured interviews with general practice professionals and wider stakeholders in England.

Method

Individual interviews with 41 purposively sampled staff in ‘research ready’ or ‘research active’ general practices and with 21 other stakeholders. Interviews were independently coded by three researchers using a Framework approach.

Results

Participants described potential ‘direct’ and ‘indirect’ impacts on their work. ‘Direct’ impacts included research changing practice work (e.g. additional records searches for particular conditions), bringing in additional resources (e.g. access to investigations or staff) and improving relationships with patients. ‘Indirect’ impacts included job satisfaction (e.g. perception of practice as a centre of excellence and innovation, and the variety afforded by research activity reducing burnout) and staff recruitment (increasing the attractiveness of the practice as a place to work). Respondents identified few negative impacts.

Conclusions

Staff and stakeholders identified a range of potential impacts of research activity on practice performance, with impacts on their working lives most salient. Negative impacts were not generally raised. Nevertheless, respondents generally discussed potential impacts rather than providing specific examples of those impacts. This may reflect the type of research activity conducted in general practice, often led by external collaborators.

Introduction

Although the benefits of research are traditionally thought to occur through its implementation into practice,[1] there is increasing evidence that engaging in research activity itself is directly associated with better performance.[2-7] For example, hospitals with high levels of cancer research show better outcomes among their wider patient populations with cancer and not participating in research.[3] Most of the evidence of these impacts is from secondary care, but there is a developing literature from general practice also suggesting associations between research activity in a practice and improved performance by that practice on a range of measures.[8-12]

If such a relationship exists, an important question concerns the mechanisms which might underlie that relationship, as an understanding of mechanisms is necessary if the relationship is to be strengthened and supported.[13]

A published review identified five potential mechanisms linking research activity and outcomes.[9] Mechanisms included 'absorptive capacity', where research activity leads to changes in the ability of organisations to use information effectively, and specific 'improvements in care processes' through research (such as greater monitoring of research patients). Other potential pathways included using research to identify problems in organisational processes, or changes arising through greater links between organisations through the research process (such as between practice and academic teams or research network staff). The review also distinguished 'intentional' impacts of research activity from those which reflected an indirect 'spillover'[14] or 'ripple' effect.[15] Additionally, there are impacts which were specific to particular research studies (i.e. a trial in a single clinical condition raising quality of care in that condition) to impacts which are not restricted to that research area.

This initial categorisation of mechanisms drew on a literature dominated by hospital studies and reflected a range of international health care systems. The authors highlighted the need 'to build understanding of mechanisms, and to explore potentially negative impacts of research engagement alongside benefits'. Such exploration is particularly needed in general practice, where there is a limited literature available.[16] General practices are smaller organisations, serving local, diverse patient populations, with potentially different activity outcomes compared with hospitals. Research activity in general practice is varied in scope, ranging from large trials to qualitative studies. It includes interventional and observational research, primary and secondary data (i.e. research databases such as the Clinical Practice Research Datalink); and publicly funded and commercial research. Research activity also varies by amount (e.g. numbers of studies and patients), duration and complexity; the scale of clinician, practice team and patient involvement, and the level of support from industry, academic and research network partners. Finally, research might be more or less focussed on questions related to

routine general practice clinical work, as only a minority of studies may derive directly from the experiences and needs of general practice staff and their patients.

In this study, conducted in collaboration with a large and cross-England Patient and Public Involvement (PPI) group, we aim to explore the views of general practice staff and wider stakeholders on the mechanisms by which engaging in research might impact on practice performance.

Methods

Sampling

Twenty general practices were sampled for variation based on publicly available data on their size, location, patient demographics and quality of care, combined with data on research activity and outcomes from the NIHR Clinical Research Network and contextual information gathered through liaison with local Clinical Research Network staff. Based on discussions with PPI contributors, we included practices that had recently been through a process of becoming 'research active' through their Local Clinical Research Network (LCRN) and those which were considered highly 'research active'. To become 'research active', practices go through a process of registering with the LCRN and completing the Good Clinical Practice (GCP) training prior to starting any research activity. 'Non research active' practices had not engaged with their LCRN or expressed interest in becoming research active. We found year-on-year research activity very variable, with some practices increasing activity and some decreasing at the time of interview.

Recruitment

An information sheet was distributed through local networks and direct mailings to practices. Clinical and non-clinical staff in the practice who had a role or held an interest in research were informed about the study. We also recruited stakeholders from agencies involved with research in general practice, such as research networks and local primary care organisations, based on recommendations from practice staff. For ethical approval, we set a limit of 100 participants, although this was designed to be flexible in case some interviews were done with multiple participants. NHS ethics approval was granted by South Central - Oxford B Research Ethics Committee (Ref: 21/SC/0251) on 13/08/21.

Data collection

Data were collected via semi-structured interviews either in person or remotely (Teams/Zoom), lasting between 30-60 minutes, between 02/12/2021 and 28/09/2022 by three local researchers CK (F) (University of Manchester), JJones (F) (University College London) and JJamison (M) (University of Cambridge). All interviews were conducted individually. Written or verbal consent was sought at interview. We recorded age, sex, ethnicity, as well as current employment, role, and job satisfaction and each participant was given an identification code.

Interview schedules were broad, including experiences of research, characteristics of an 'effective' research practice, and the management of overlap between clinical and research activity, although the analysis presented here is focussed on staff perceptions of mechanisms linking research activity and outcomes.

Interviews were audio-recorded, transcribed professionally, and imported into NVivo 12 for analysis. Field notes were also collected to better understand practice organisation, culture and their wider context.

Analysis

Framework analysis[17] was used with the support of NVivo v.12, (QRS International) . All researchers went through a process of familiarisation with the first four interviews. Each transcript was carefully read, and a code applied to describe or interpret passages, this stage of open coding was completed independently by the three researchers. A coding frame was then developed by consensus. The working analytical framework was then applied by coding subsequent transcripts independently by the researchers on the interviews they conducted. Framework matrices were generated through NVivo. The research team met regularly in 'data clinics' to discuss emerging findings and update the interview schedules. Once coding was complete the separate NVivo files in London and Cambridge were sent to Manchester for further analysis and the development of themes across the dataset. Two PPI events were held to explore their views on the emergent themes and incorporate their feedback.

Results

In total 62 interviews were completed (tables 1 and 2). Around two thirds of practice staff participants were female, ages ranged between 22-56 years of age, 40% worked fulltime at the practice and the majority reported high levels of job satisfaction.

Mechanisms linking research activity and general practice performance

We extracted the themes relating to mechanisms, which we divided into 'direct' mechanisms (where there was a clear link between the mechanism and general practice performance) and 'indirect' mechanisms (where the link was mediated through broader changes). The core themes are presented in Figure 1 and then further expanded in the text.

[Figure 1]

Direct effects on care - additional resources

One of the main benefits of research activity was the access to extra resources, including extra income that could be reinvested into the practice:

And then secondly we also try to use research as a way to boost our revenue a little bit, so we do try to have a nice mix between commercial studies and ones that benefit the patients, obviously the ones that can help generate some revenue for us is always good, particularly ones where we can afford to fund more staff to get involved with the research projects. Because we want to keep growing and I think the way we see doing that is by creating a big enough revenue stream that we can almost have a research team embedded in the practice" (M03S04- Practice Manager)

Some studies were seen as beneficial because they provided access to equipment such as scanners, centrifuges, freezers or home monitoring devices. Not all of the benefits described were clinical. Staff and stakeholders described the value of time for patients, with increased appointment times for recruitment and access to staff (such as research nurses) giving patients someone else with time to attend to them, again relieving pressure on practices.

"a lot of our patients, they enjoy…we don't have the time restraints that you would have with general practice. So, we can see a patient for up to an hour, whereas in general practice, maybe you are limited to

a sort of seven-minute time slot, or a ten-minute time slot. And they also get, almost like a backdoor into the surgery." (CS407- Clinical Trials Manager)

Direct effects on care - Improved knowledge and skills

Taking part in research was seen by some practitioners as a way of keeping up to date with innovations in health and care, including awareness of new treatments. Trials were seen as a way of potentially 'upskilling' the practice team by providing extra learning about new procedures. For those that were involved in the set-up of studies, reading study protocols could provide an update on current evidence for particular conditions.

"So one is the training. So because the training we do for the studies, our knowledge has improved, we have a heightened awareness. And then because we discuss those in our clinical meetings, our colleagues then have heightened awareness of it." (CS203- Advanced Clinical Practitioner)

Direct effects on care - Improved systems

General practice staff are often involved in the identification of potentially eligible research participants. Respondents noted that the processes of running searches and identifying eligible patients gave them the opportunity to maximise accuracy and consistency of coding, helping to improve care through maintenance of systems for identification and follow-up of patients. This had the further potential for improving assessment of practice performance in the Quality and Outcomes pay for performance scheme, and the external ratings of practices by the independent regulator the Care Quality Commission:

"And sometimes it can be, from our point of view, being able to flag up and pick up patients a lot better after sometimes the research team have done searches on the practice numbers and recognise that actually there are these patients that haven't been coded, for example." (MSH05- GP partner and Research Lead for PCN)

Direct effects on care - Better care for patients

Some practitioners thought that taking part in research could give them access to more modern and evidenced-based services, such as increased access to specialist services (e.g. mental health) or 'extra' tests for their patients, facilitating access for patients and helping relieve burden on practice resources.

"So usually one of the first things we look at is benefit for the patients, so we look at opportunities that patients might not have access to elsewhere. We're from quite a deprived area and there's obviously quite a lot of disparity in healthcare of quite poor outcomes, so we tend to look for studies that have good outcomes for patients first of all (M03S04- Practice Manager)

Another raised impact on patient care was that screening patients for study participation might lead to reviews of specific patient groups and picking up on clinical issues that may have otherwise been investigated or detected later. Whilst this potentially could lead to increased workload for practitioners, practices perceived this as a potential benefit for patients. For example, studies around Chronic Kidney Disease (CKD) where patients were told that they have CKD following a search of practice records, reportedly generated additional work in terms of patient queries and appointments to explain the diagnosis to patients who were not aware they had it. However, this 'extra' work was recognised as being in line with best practice:

"I think although in that case it was a little bit more work, actually it highlighted something that we should have been doing anyway. He should have known that he had kidney disease and someone should have had that conversation. I expect there will be a few more bits like that that will probably bring us in to line with best practice as well. So it might be a little bit more work but I think it is all in the right direction. It has not deviated from what we are doing in terms of patient care on a day to day basis and it fits in with managing his CKD." (M04S07- GP, salaried)

Direct effects on care - Improved relationships with patients

In research-active practices, some staff reported that patients may view staff as more knowledgeable, taking more notice of advice they give. Some practitioners reported that engaging a patient in research gave them the opportunity to build their relationship and increase trust. Other members of practice staff also saw these benefits, reporting more positive feedback from patients involved in research:

“I think like a lot of other practices, we struggle with some negative feedback at times with how hard it is to meet demand and everyone wanting appointments and everything the same day or exactly when they want, so you can sometimes get in a bit of a negative environment with that, but this as a separate arm, the patients have all been fantastic when they’ve been on these studies. So I think those ones that have been involved so far have seen a massive positive benefit and we’ve noticed the positive feedback which is something we don’t always get.” (M03S04- Practice Manager)

Indirect effects on performance – Improved practice image

Although respondents reported that improved relationships with patients could result from their active participation in research, others spoke of the wider impact where being known for taking part in research had a positive effect on the practice reputation, with these practices being thought of as more ‘progressive’ and ‘innovative’ compared to others. Stakeholders involved in research outside the specific practices also suggested that research activity was indicative of a well-run practice that must be doing the everyday clinical work effectively to be able to take on additional tasks.

Indirect effects on performance – Job satisfaction

One of the most significant benefits reported by staff active in research was the positive impact on their job satisfaction. In a system under pressure, the variety offered by research to their daily routine was seen as essential in helping maintain a good working environment. Particularly, GPs reported that research activity complemented their clinical roles, offered variety, revitalised them during their clinics and therefore potentially reduced burnout.

“Other reasons, so from a selfish point of view, it just varies the week for me. I think when you do slightly different things it keeps you fresh mentally, does keep you going. And if you do…I think if…if you do the same thing again, and again, especially in GP, you can burn out quite quickly.” (M03S05- GP partner)

Other factors raised included improved self-esteem, taking pride in research work and making a contribution to national and global health. A further theme from some of the practice staff interviews was

improved team working due to delivering research, in particular across practices when research involved activity across a wider primary care network:

I think so, and I think the other thing about general practice often in this job is, you work in silo, so when you're doing research studies it actually…it's an opportunity to work in very small groups with other people and deliver something where you're all working on the same project as others. So, it's nice having these little mini projects to work on, gives a focus for the group, and actually helps engagement within teams as well. (L01S01- GP partner)

Indirect effects on performance – Staff recruitment

Research activity of general practices was not always explicit to all of those respondents in the practice, and indeed not always visible outside of the practice. However, some interviewees did report that it could influence recruitment and that they thought this would increasingly become a 'selling point' in the future.

"Yes, I think it's something that's advertised, you know, when we're recruiting for staff. It's something that interested me in coming back to the practice so I've spoken to other people who have been thinking about applying for jobs here and it is something that people are interested in, so yes. …I don't know about the wider staff in general. For me, it makes me more inclined to stay here because, you know, it's something that not a lot of GP practices do. But yes, I don't know about everybody else." (CS311- GP, salaried)

There were also comments on the positive effects being a research active practice might have on the type of staff attracted to posts. For example, people identified as 'forward thinking staff' and those who are progressive or keen to learn by offering expanded roles or portfolio careers.

Discussion

Summary

Among a range of staff in practices demonstrating a range of research activity, multiple potential impacts of research activity on practice performance were identified. Of those discussed, the impacts on their working lives were most salient.

Strengths and limitations

Our recruitment procedures ensured a reasonable level of geographical diversity and we were able to use a range of data to sample according to levels of research activity. Nevertheless, although we achieved good variation in some characteristics, it is likely that volunteers for the study would have represented more research active practices (by design) and those likely to have had a more positive experience of research activity, and who may have been more willing to entertain the idea that such research improved practice performance.

This research was conducted end of 2021 to mid-2022, after most COVID restrictions had been lifted, although the impacts were still evident. Many of the practices still limited waiting in patient areas, were using remote consultations and reported reduced capacity for 'extras' such as research activity, or a focus on COVID-specific research.[18]

Comparison with existing literature

As noted previously, the categorisation of mechanisms developed by a previous review[9] was developed from a broader literature. We mapped our data to those categories and found some similarities, including some evidence of increases in 'absorptive capacity' and 'improvements in care processes'. The former saw impacts such as additional resources as a result of research, reinvestment of research income, training, and updated knowledge of treatment options. Improvements in care processes included access to care, such as a treatment patients would not usually be able to access, which is a fairly common finding in patients,[19] increased monitoring through trial follow-up visits and extended appointments. There was less reporting of the other mechanisms. Some respondents reported impacts related to the mechanism 'organisational mechanisms within health care system', such as research processes identifying issues (such as poor coding). However, this was relatively uncommon. Formal collaborative linkages driven by research were also uncommon (beyond the support function of research network staff), although some practices reported starting to look at sharing research resources and participation across practices as part of the primary care network,[20 21] rather than as individual organisations. This could provide a platform for wider impact if benefits were more widely shared.

Formal ‘action and participatory research’ is less common in primary care and thus it is unsurprising that this was rarely reported. More generally, much of the research reported here represented general practice teams supporting ‘external’ research activity through recruitment and consenting of patients, rather than research initiated by practice teams, or reflecting a closer collaboration and partnership between research and practitioner communities.[22] It is possible that these closer collaborations and participation are a much more impactful platform for change compared to the more traditional research which dominated most of the activity reported here.

The core mechanism we did identify was research activity affecting the job satisfaction of those members of staff who participate, where the break from routine activity, change of pace and sense of achievement seemed to be salient for many staff. This is an interesting counterpoint to concerns that research activity is blocked by system pressures.[23] It is not known whether this reflects the particular pressures on the general practice workforce,[24] although such impacts have been identified in other professional groups outside medicine.[25] It is also not clear if these impacts are specific to research or could be replicated by any alternative activity, such as teaching or quality improvement work.[26]

Implications for research/practice

The conclusion of a comprehensive review looking at the link between research activity and outcomes highlighted the need ‘to build understanding of mechanisms, and to explore potentially negative impacts of research engagement alongside benefits’.[9] Our work suggests that a variety of mechanisms are plausible, although the effects of research activity on job satisfaction and practitioner well-being were most salient among our respondents. We sought evidence of negative impacts, but respondents reported few in principle and none in practice. Future research could usefully explore the differential impacts of different types of research, and whether the benefits reported here could be maximised through particular models of research activity or additional facilitation and support.

Declarations

Ethical approval

NHS ethics approval was granted by South Central - Oxford B Research Ethics Committee (Ref: 21/SC/0251) on 13/08/21.

Informed, written consent was sought from all participants in accordance with ethical requirements.

Consent for publication

Not applicable

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare no competing interests.

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Authors' contributions

CK, JJamison, and JJones were involved in the development of the materials, data collection and qualitative analysis. SP, JUS and PB contributed to interpreting the qualitative data and revising. The manuscript was drafted by CK and PB. PB, JUS, SP, AB, PL and CM were responsible for the conception and design of the study and advised throughout on revisions to the manuscript. All authors have read and approved the final manuscript for submission.

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Tables

Table 1- Interview participants by role

Practice staff	**41**
GP	17
GP Trainee	3
Nurse	8
Practice manager	5
Trials Co-ordinator	3
Administrator	3
Pharmacist	2
Stakeholders	**21**
Primary care network	4
Clinical Commissioning Group*	4
NIHR Clinical Research Network	8
Other	5

*Now Integrated Care Systems

Table 2 General practice staff characteristics:

Variable	**Staff (n=41)**
Female (%)	28 (68%)
Age years, n (%)	
21-30	4 (10)
31-40	17 (41)
41-50	12 (29)
51-60	7 (17)
White British (%)	27 (66%)
Years in role, n (%)	
<5	18 (44)
6-15	12 (29)
15+	9 (22)
Full Time, n (%)	17 (41)
Job satisfaction score (1-7 scale), n (%)	
High satisfaction (5-7)	34 (85)
Low satisfaction (1-4)	6 (15)

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Figures

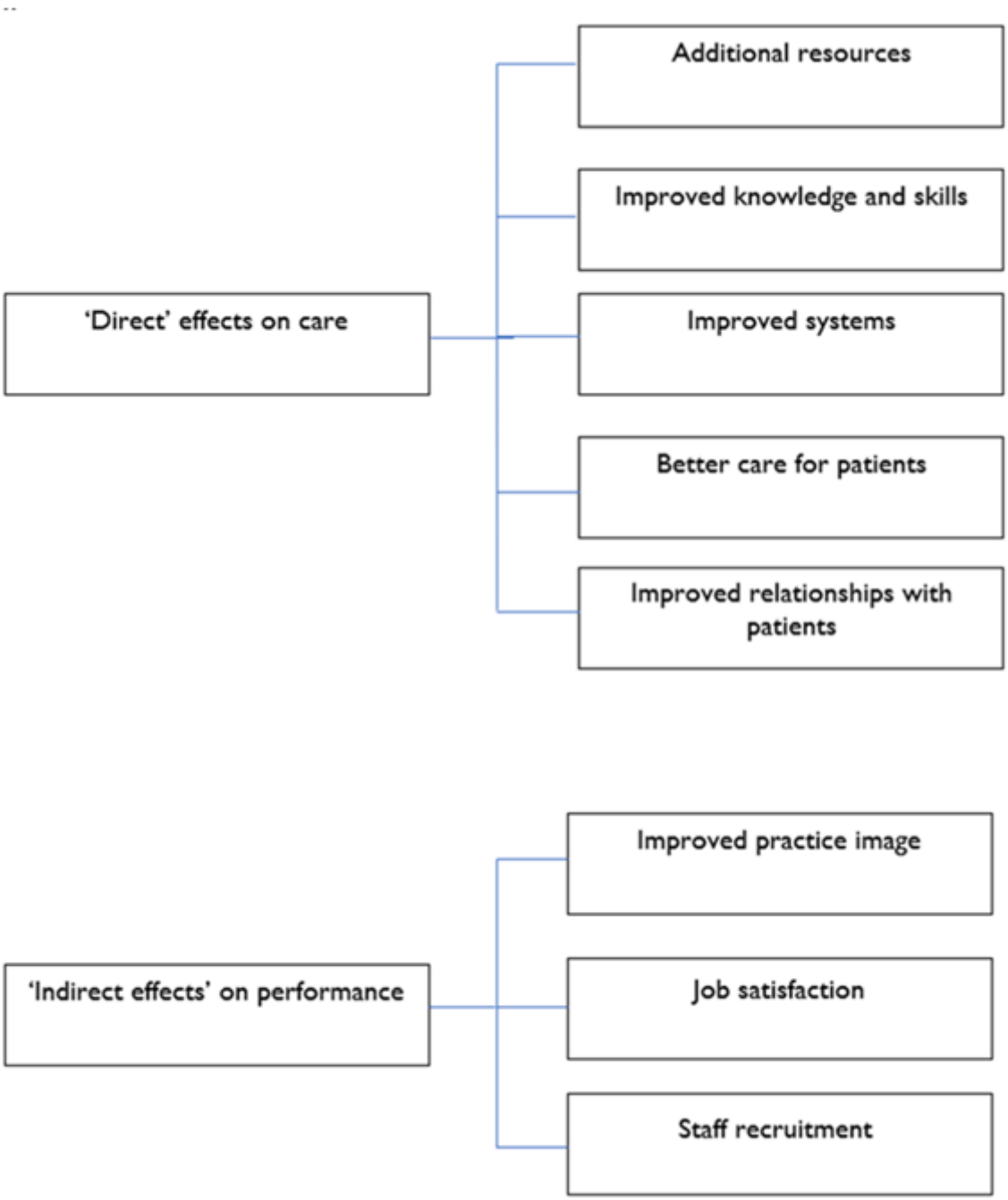

Figure 1

Mechanisms linking research activity and general practice performance