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Survey to identify research priorities for primary care in Scotland during and following the COVID-19 pandemic

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Strengths and limitations of this study

⇒ A transparent and systematic Delphi approach was used to identify research priorities.
⇒ The methods used provide a shared understanding of research priorities for primary care among nurses, pharmacists, allied health professionals and medical professionals, and patient and public involvement group members.
⇒ We do not know how many healthcare professionals received the survey which means that we are unable to report a response rate; however, this study included 54 key partner organisations representing the range of primary care professions.
⇒ We did not conduct a literature search to assess gaps in evidence relating to the research priorities.

ABSTRACT

Objectives To identify research priorities for primary care in Scotland following the COVID-19 pandemic.

Design Modified James Lind Alliance methodology; respondents completed an online survey to make research suggestions and rank research themes in order of priority.

Setting Scotland primary care.

Participants Healthcare professionals in primary care in Scotland and members of primary care patient and public involvement groups. 512 respondents provided research suggestions; 8% (n=40) did not work in health or social care; of those who did work, 68.8% worked in primary care, 16.3% community care, 11.7% secondary care, 4.5% third sector, 4.2% university (respondents could select multiple options). Of those respondents who identified as healthcare professionals, 33% were in nursing and midwifery professions, 25% were in allied health professions (of whom 45% were occupational therapists and 35% were physiotherapists), 20% were in the medical profession and 10% were in the pharmacy profession.

Main outcomes Suggestions for research for primary care made by respondents were categorised into themes and subthemes by researchers and ranked in order of priority by respondents.

Results There were 1274 research suggestions which were categorised under 12 themes and 30 subthemes. The following five themes received the most suggestions for research: disease and illness (n=461 suggestions), access (n=202), workforce (n=164), multidisciplinary team (MDT; n=143) and integration (n=108). One hundred and three (20%) respondents to the survey participated in ranking the list of 12 themes in order of research priority. The five most highly ranked research priorities were disease and illness, health inequalities, access, workforce and MDTs. The disease and illness theme had the greatest number of suggestions for research and was scored the most highly in the ranking exercise. The subtheme ranked as the most important research priority in the disease and illness theme was 'mental health'.

Conclusions The themes and subthemes identified in this study should inform research funders so that the direction of primary healthcare is informed by evidence.

INTRODUCTION

The COVID-19 pandemic has had a significant impact on primary care,[1–3] and so it is timely to set research priorities in order to support recovery. Primary care is the foundation of equitable and affordable healthcare,[4] especially in countries with universal coverage and a National Health Service (NHS) as in the UK.[5] Scotland, as a devolved nation, is responsible for the funding and planning of its healthcare system with high-quality primary care at the heart of its vision.[6] High-quality primary care needs to be underpinned by high-quality research and evaluation.[7] Primary care is usually a person's first point of contact with the NHS[8] and it is where most patient contacts occur.[6] In this study, we adopted the following definition of primary care that has been agreed by a range of professional organisations in Scotland:

> Primary care is provided by generalist health professionals, working together in multidisciplinary and multiagency networks across sectors, with access to the expertise of specialist colleagues. All primary care professionals work flexibly

using local knowledge, clinical expertise and a continuously supportive and enabling relationship with the person to make shared decisions about their care and help them to manage their own health and wellbeing.[9]

Vertical (ie, disease-specific) approaches to healthcare have been effective at reducing morbidity and mortality from specific conditions but have been criticised for detrimentally affecting the resources available to and capacity of local primary care.[10] Research priorities set from a generalist and multiprofessional perspective are also important and of value to patients and carers.[11–14] The high and increasing prevalence of multimorbidity associated with population ageing means that there is an increasing need for care which focuses on supporting people with multiple conditions.[15] Hence, there is a need to set both vertical (disease) and horizontal (generalist primary care) research priorities in order to guide research investment and direct resource allocation that will ultimately provide a robust evidence base to underpin the development and delivery of primary care.

A number of previously published studies have identified primary care research priorities and the reach of these studies has varied with research priorities variously being developed internationally,[16] in low and middle-income countries,[17] in the European Union[18] or in single countries.[19] An argument for setting research priorities in one country, or a cluster of similar countries is because the challenges faced by primary care in different countries vary due to factors such as population characteristics (eg, an ageing population), diverse social cultures and norms and different healthcare systems (eg, public and private healthcare systems).[18] Research priorities identified in several previous research prioritisation exercises include how primary care should be financed, organised and staffed,[16–20] the importance of implementation and translation of knowledge and evidence into primary care,[16 19] addressing multimorbidity,[16 19 20] promoting health equity,[16 19] promoting healthy behaviours in the population,[16 19] universal health coverage and health access,[16 17] digital delivery of primary care[16 19] and the involvement of patients in the design and delivery of primary care.[16 19]

The aim of this study was to identify primary care research priorities in Scotland and set a research direction that will be relevant for patients, carers and generalist healthcare professionals in the aftermath of the coronavirus pandemic. This is the first comprehensive, generalist health professional project of primary care research priorities since the 2020 onset of the coronavirus pandemic. It is designed to strengthen future evidence for primary care to improve health outcomes.

METHODS
This study adapted the James Lind Alliance (JLA) methodology.[21] The steering group for the project was the Scottish School of Primary Care Executive (http://www.sspc.ac.uk), which included an individual from a primary care patient and public involvement (PPI) group, clinical academics and primary care researchers from Scottish universities. The following steps were taken to deliver the project.

Steps 1 and 2: identifying key partners and raising awareness of the study
'Key partner' organisations were identified through a process of peer knowledge and consultation, and through the steering group members' networks. Fifty-four key partner organisations agreed to participate by advertising the project and circulating the link to the survey to their members (online supplemental file 1: Key partners).

Step 3: identifying research priorities
The steering group administered an online survey via the key partner organisations for respondents to identify an initial set of research priorities (online supplemental file 2: Research priorities survey). Healthcare professionals in primary care in Scotland were eligible to participate in the identification and prioritisation of research for primary care. Members of primary care PPI groups were also invited, including members of the National Research Scotland Primary Care PPI group. A period of 3 months was given to complete the survey (4 December 2020 to 1 March 2021). Responses were solicited with the following open-ended query that was used in a previous international JLA primary care research priorities project: 'Please suggest up to three important primary care research questions'.[16] Responses were anonymous (no names were requested during the survey). Respondents were asked to provide an email if they were willing to participate in subsequent steps of the project, but these emails were stored separately from the submitted priorities. Results were downloaded from online survey to an Excel spreadsheet for the purposes of analysis in step 4.

Step 4: analysis and identifying research themes and subthemes
The submissions of all respondents were analysed collectively. Suggestions for research by respondents were grouped into themes and subthemes by two members of the steering group (GH, FG), with the theoretical framework developed iteratively over several meetings including involvement of a third member of the group (SWM) to resolve disagreements. Suggestions for research were allowed to be categorised under more than one theme. If a group of suggestions on the same topic totalled <1% (ie, ≤12 suggestions) of the total number of research suggestions then a theme was not created. Subthemes were identified within a theme when approximately ≥10% of suggestions were on a similar topic. Theme and subtheme names were chosen from current policy and literature, for example, subthemes for the theme 'access' were drawn from a published definition of 'access' which included provision and availability of primary care services, equity

of access, people's use of services and barriers to getting access as well as the dimension of effectiveness of using the service.[22]

The submissions of the subgroup who were not health and social care professionals (n=40) were included in the above exercise and also analysed separately to determine if there were any themes that were unique to this group.

Step 5: ranking themes and research prioritisation

The aim of the final stage of the priority setting process was to rank the primary care research themes in order of priority. The respondents in step 3 who wished to participate in this step were invited by email to rank the list of the summary research themes and subthemes in order of priority. This exercise was done using an online survey, which was open for 1 month. Respondents were asked to rank 12 research themes that had been identified in step 4 in order of priority, and to rank all subthemes.

PPI and engagement

Several meetings between GH and the National Research Scotland Primary Care PPI group were held so that patients could contribute towards developing the protocol for this study. This group was also a key partner.

RESULTS
Respondent characteristics

There were 512 respondents. Eight per cent (n=40) of respondents did not work in health or social care and therefore for the purposes of this study were regarded as patients, carers and members of the general public. Of those who did work, 68.8% worked in primary care, 16.3% community care, 11.7% secondary care, 4.5% third sector, 4.2% university (respondents could select multiple options for place of work). Table 1 shows the health and social care professions of respondents (n=472).

Of those respondents who were healthcare professionals, 33% were in nursing and midwifery professions regulated by the Nursing and Midwifery Council, 25%

Table 1 Health and social care professions of respondents

Profession	n=472 (%)
Allied health profession regulated by Health and Care Professions Council	120 (25.4)
Dentistry regulated by General Dental Council	5 (11)
Medicine regulated by General Medical Council	95 (20.1)
Nursing or midwifery regulated by Nursing and Midwifery Council	157 (33.3)
Pharmacy regulated by General Pharmaceutical Council	49 (10.4)
Social work regulated by Scottish Social Services Council	2 (0.4)
Other	44 (9.3)

in allied health professions regulated by the Health and Care Professions Council (of whom, 45% were occupational therapists and 35% were physiotherapists), 20% were in the medical profession regulated by the General Medical Council and 10% were in the pharmacy profession regulated by the General Pharmaceutical Council.

Research themes and subthemes

The total number of research suggestions was 1274. Research suggestions were categorised under 12 themes and 30 subthemes (table 2). The 12 themes and their associated subthemes are positioned in order of the quantity of suggestions for research. Five themes had over 100 suggestions for research; these were 'disease and illness', 'access', 'workforce', 'multidisciplinary teams' (MDT) and 'integration'. Hence, based on the number of suggestions for research, these are the top five priorities for research.

The theme with the most suggestions for research was 'disease and illness'; the associated subthemes indicate multiple long-term conditions. The subtheme with the most suggestions for research under this theme was 'mental health'. The theme with the second most suggestions for research was 'access' and included suggestions about the availability of primary care services, utilisation of these services and barriers to access, the relevance and effectiveness of these services and equity of access. 'Workforce' was the theme that had the third most suggestions for research and included suggestions about recruitment and retention of primary care staff, training and development, workload, staff mental health and General Medical Council (GMS) contract. 'Multidisciplinary teams' was the theme that contained the fourth most suggestions for research. Twenty-eight per cent of suggestions about MDTs did not specifically refer to a particular profession, 23% referred to nurses, 17% occupational therapists, 13% allied health professions, 8% pharmacists, 4% physiotherapists and 3% psychologists. Forty-five per cent of pharmacists (n=22) provided a suggestion categorised under the theme MDT, followed by 42% (n=51) of Allied Health Professionals (AHPs), 23% (n=22) of medical professionals, 22% (n=35) of nurses and 20% (n=1) of dentists. 'Integration' was the theme that had the fifth most suggestions for research; associated subthemes were multiagency working and collaboration, social prescribing and continuity of care. Examples of research suggestions for each theme can be found in online supplemental file 3.

Figure 1 shows the themes of respondents who were not a health and social care professional (n=40). It shows that most research suggestions of this subgroup were categorised under the themes 'disease and illness' and 'access'. These were the themes with the highest number of research suggestions in the total group of respondents. The theme 'integration' had the third highest number of research suggestions and the theme 'self-care' had the fourth highest number of suggestions for research in this

Table 2   Themes and associated subthemes in order of the quantity of research suggestions that were categorised under each theme and subtheme (n=512 respondents)

Theme	n*	Subthemes	n*
Disease and illness	461	Mental health	168
		COVID-19	58
		Long-term conditions	42
		Obesity	27
		Diabetes	18
		Dementia	16
		Frailty	14
		Addiction	14
Access	202	Availability and presence of services	72
		Utilisation of services and barriers	61
		Relevance and effectiveness of services	43
		Equity	26
Workforce	164	Recruitment and retention	58
		Training and development	54
		Workload	31
		Mental health	22
		General Medical Council (GMS) contract	11
Multidisciplinary teams (MDT)	143	–	–
Integration	108	Multiagency working and collaboration	74
		Social prescribing	20
		Continuity of care	14
Digital healthcare	96	Remote consultations	56
		Remote care	23
		IT systems	12
		Telephone triage	5
Self-care	84	Lifestyle	44
Primary/secondary care interface	62	Communication	9
		Continuity of care	
Medications	55	–	–
Health inequalities	30	Deprivation	15
Carers	19	–	–
Patient involvement	13	Research	7
		Care	6

*Number of research suggestions categorised under a theme and subtheme. Not all suggestions made by respondents were categorised under a theme or subtheme.
IT, information technology.

subgroup whereas these themes were fifth and seventh in the total group of respondents.

Ranking of research themes and subthemes

One hundred and three (20%) respondents to the survey participated in ranking the list of 12 themes in order of research priority (table 3). The five most highly ranked themes were as follows: 19.4% of respondents chose 'disease and illness', 17.4% chose 'health inequalities', 14.5% chose 'access', 12.6% chose 'workforce' and 12.6% chose 'multidisciplinary team' as their number one top research priority. Hence, based on this ranking exercise, these are the top five priorities for research.

Within the most highly ranked theme 'disease and illness', eight subthemes were ranked. 'Mental health' was selected as the top priority by 37.9% of respondents, followed by 23% of respondents choosing 'long-term conditions' as their top research priority under this theme. Four subthemes were ranked in order of
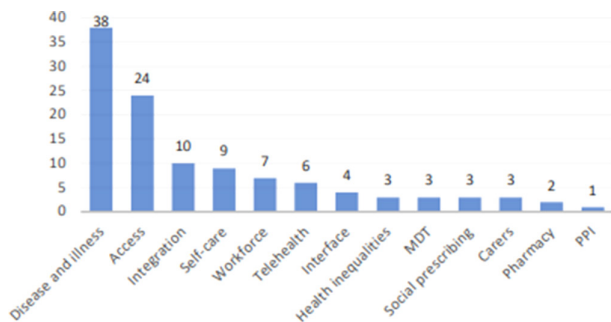
Figure 1 Themes of respondents who were not health and social care professionals (n=40 respondents). MDT, multidisciplinary theme; PPI, patient and public involvement.

priority under the 'access' theme. Thirty-seven per cent of respondents chose 'availability and presence of primary care services' as their top priority for research under this theme, followed by 25% of respondents selecting 'relevance and effectiveness'. Four subthemes were also ranked in order of priority within the 'workforce' theme. Twenty-nine per cent of respondents chose 'recruitment and retention' as their top priority for research under this theme, followed by 23% of respondents selecting 'workload'. There was only one subtheme identified during the survey for the main theme 'health inequalities' and no subthemes for 'multidisciplinary teams' and so we did not ask respondents to conduct any further ranking under these themes. No subgroup analysis was conducted because we did not know which respondents (eg, if they worked in health and social care) from the survey participated in the ranking exercise.

DISCUSSION

The study illustrates the quantity and breadth of research topics suggested primarily by primary care

Table 3 Themes ranked as the number 1 top research priority (n=103 respondents)

Theme	Respondents ranking as top research priority (n)
Disease and illness	20
Health inequalities	18
Access	15
Workforce	13
Multidisciplinary teams	13
Integration	6
Primary/secondary care interface	5
Digital healthcare	4
Self-care	4
Patient involvement	4
Medications	1
Care	0

healthcare professionals. The study highlights that there are some differences between the themes with the greatest number of suggestions for research (table 2) and the themes scored highly in the ranking exercise (table 3); we therefore present both as a basis for research prioritisation. The ranking of research themes in order of research priority identified the following top five priorities: 'disease and illness', 'access', 'workforce', 'multidisciplinary teams' and 'health inequalities'. The theme 'integration' attracted many suggestions for research by respondents although only 6% of respondents ranked it as their number one priority for research in the ranking exercise. The theme 'health inequalities' was highly ranked although this theme attracted relatively few suggestions for research compared with other themes that made it into the top five priorities for research. Why the theme 'health inequalities' attracted relatively few suggestions for research could be a consequence of having a much smaller number of respondents participating in the ranking exercise compared with the number of respondents involved in providing suggestions for research (103 vs 512) or it could be that people think and choose differently when given a prespecified list of themes to rank in order of research priority.

The study shows that the top two priorities for research—'disease and illness' and 'access'—for the total group of respondents were also the top two priorities for research when the subgroup of respondents who did not work in health and social care were analysed separately. However, there were some differences in the number of research suggestions for other themes, which highlights that research priorities may vary depending on which groups of the population are involved in the prioritisation exercise.

The study shows that priorities for research may vary by profession. We show, for instance, that a higher proportion of respondents in the pharmacy profession and AHPs made suggestions for research about MDTs compared with medical professionals and nurses. However, a strength of this study is that it presents priorities for research identified across a wide range of professions.

The most highly ranked theme was 'disease and illness' and its subthemes include the most common conditions treated in primary care, most of which are long-term conditions. For all the conditions listed, including mental health problems, it is more common for people to have multimorbidity (two or more conditions) than the single condition alone.[15] What the suggestions for research categorised under this theme represent is recognition that the effective management in primary care of long-term conditions, either as a single chronic condition or multimorbidity, is going to be crucial for the nation's health. This focus on long-term conditions represents a shift in focus in research priorities for primary care. In a study conducted just over 20 years ago in Scotland, a key research priority for primary care was acute illness.[23]

Not surprisingly, COVID-19 was one of the conditions recommended by respondents for research because the study took place during the pandemic. Whether 'Long COVID' becomes classified as a new long-term condition is yet to be seen but research about the prevalence, persistence, management and long-term consequences of COVID-19 in primary care will be important to policy and practice in the foreseeable future. It is perhaps surprising that COVID-19 vaccination development, or at least its delivery in primary care, did not feature as a prominent suggestion for research since the first vaccine was given on 8 December 2020 in the UK and this survey was open between 4 December 2020 and 1 March 2021. A qualitative study exploring respondents' rationales for their suggestions for research would provide a much richer understanding of prioritisation for research including reasons why certain topics are not prioritised.

Mental health is one of the top 10 most common conditions for seeking a general practitioner (GP) or practice nurse consultation in primary care in Scotland[8] and was the topic that received the most suggestions for research. Again, mental health came to the fore during the global pandemic but was also a key public health concern and was identified as a research priority beforehand in countries such a Scotland[23] and Australia.[19] During the COVID-19 pandemic a specific mental health concern has been highlighted, which is primary care staff stress and burnout and its potential effects on recruitment and retention.[24] The Health and Care (Staffing) (Scotland) Act 2019[25] provides a statutory basis for the provision of staffing, and highlights a duty by government to ensure that there are sufficient numbers of appropriate staffing for the provision of safe and high-quality healthcare, appropriate training and the well-being of staff. The number of suggestions for research about the primary care workforce that were provided in this study implies that there may be perceived challenges in fulfilling this statutory duty. Staffing levels and work intensity also featured in a study identifying primary care patient safety research priorities in the UK that was published in 2019,[20] which suggests that workforce concerns are not just pertinent to the pandemic, although the pandemic may have exacerbated workforce challenges.

The previous research prioritisation study in Scotland identified 'organisation of care' as a key theme and gave reducing inequalities in access to healthcare and reducing inequalities in health as examples under this theme. Twenty years on, access to primary care and health inequalities remain important research priorities. Health inequalities and access to services are two themes that have been identified as priorities in previous primary care research prioritisation exercises conducted in other countries, which implies that these are persistent concerns of global interest that merit further investigation.[16 17 19] Communication and coordination between care providers, for instance, was

a top 10 research priority for primary care patient safety in the UK.[20] The study found that specific aspects of organisation of care were important research priorities, namely 'multidisciplinary teams' and 'integration'. The 'Health and Social Care integration: progress review'[26] published in 2019 stated that the main reason for integration was so that care 'feels seamless' for patients. The vision for primary care in Scotland is for an enhanced and expanded multidisciplinary community,[27] including GPs, alongside other health professionals such as nurses, dentists, pharmacists and allied health professionals.[28] Vaccination services, pharmacotherapy services, community treatment and care services, urgent care services and additional professional services including acute musculoskeletal physiotherapy services, community mental health services and community link worker services were shifted from GP contractors to the responsibility of other professions, although with GPs maintaining a professional role in these services in their capacity as expert medical generalists. Respondents' suggestions for research and the ranking exercise reflect these policy shifts with recommendations for future research to include a focus on MDTs and integration. Health and social care organisations' response within the first 6 months of the COVID-19 pandemic required multidisciplinary effort across organisational boundaries in Scotland.[29] Hence, future pandemics, as well as remobilisation and recovery phases of the current pandemic, may benefit from research to inform a multidisciplinary approach to care.

Strengths and limitations

The main strengths of this study are that we used an established transparent and systematic approach to identifying research priorities and it involved a large number of healthcare professionals in Scotland. There were 512 respondents, of which 472 were health and social care professionals; this is the largest number of healthcare professionals engaging in a research prioritisation exercise about primary care research in Scotland and in other countries.[17 19 20] There are, however, a number of limitations. The study was reliant on the key partners advertising the survey and we do not know how many healthcare professionals received the survey, which means that we are unable to report a response rate. We did not explore respondents' reasons for proposing research suggestions or ranking themes. We were not able to describe which respondents (eg, if they worked in health and social care and their profession) from the survey participated in the ranking exercise. We did not conduct a systematic literature review to assess gaps in evidence, which is often used in research prioritisation exercises to inform the final selection of top research priorities. Conducting robust literature reviews in relation to the five prioritised themes in future research would be valuable. The study was conducted during the second wave (September 2020 to April 2021)[30]

of the pandemic when staff were already stretched to their limit by having to make major changes to their patterns of work. The research priorities highlighted by respondents must therefore be interpreted in this Scottish context. It is possible that a different set of priorities will emerge in the future as the impact of COVID-19 evolves.

CONCLUSION

There is a need to set research priorities in order to guide research investment and direct resource allocation that will ultimately provide a robust evidence base to underpin the development and delivery of relevant quality services for patients in primary care. The findings of this research prioritisation exercise can inform the future direction of research for primary care in Scotland. The themes identified in this study may be used by a broad range of stakeholder groups, including research funders, professional organisations, policy makers, charities and PPI groups, to facilitate the setting of the course of research for primary care.

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Contributors GH is the author acting as guarantor. GH, LMP, SC, MM, MB, BG and SWM conceived and designed the study. FG administered the survey. GH, FG and SWM conducted the analysis and interpreted the data. GH, LMP, SC, MM, BG, SWM, FG and MB drafted the manuscript and revised it critically for important intellectual content, and gave final approval of the version of the manuscript to be published. GH, LMP, SC, MM, BG, SWM, FG and MB agree to be accountable for all aspects of the work.

Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not required.

Ethics approval Independent advice was sought from NHS Grampian Research Ethics Committee and University of Highlands and Islands Research Ethics Committee, who both advised that the project did not require research ethics review because the study was identifying research priorities and not conducting the research.

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