


# BMJ Open Online survey exploring researcher experiences of research funding processes in the UK: the effort and burden of applying for funding and fulfilling reporting requirements

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## ABSTRACT

**Objective** To explore researchers' experiences of funding processes, the effort and burden involved in applying for funding, obtaining funding and/or fulfilling reporting requirements with a UK health and social care research funder.

**Design/Setting** A cross-sectional online survey study with open (free-text) and closed questions (August to November 2021).

**Participants** Researchers with experience of applying for/obtaining funding and/or experience of fulfilling reporting requirements for UK health and social care research funded between January 2018 and June 2021.

**Results** The survey was completed by 182 researchers, of which 176 had experience with applying for/obtaining funding, and 143 had experience with fulfilling reporting requirements during the timeframe. The majority of the 176 respondents (58%) completed between 7 and 13 key processes in order to submit an application and 69% felt that it was critically important to undertake these key processes. Respondents (n=143) reported submitting an average of 17 reports as part of research monitoring to a range of organisations (eg, funders, Higher Education Institutions). However, only 33% of respondents felt it was critically important to provide the requested reporting information to the different organisations. Thematic analysis of free-text questions on application and reporting identified themes relating to process inefficiencies including streamlining and alignment of systems, lack of understanding of processes including a need for improved communication and feedback from organisations with clear explanations about what information is needed, when and why, the support required by respondents and the time, effort and impact on workload and well-being.

**Conclusions** Through this study, we were able to identify funding processes that are considered by some to be effortful, but necessary, as well as those that were perceived as unnecessary, complex and repetitive, and may waste some researchers time and effort and impact on well-being. Possible solutions to increase efficiency and enhance value in these processes were identified.

## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ The mixed methods approach converges the quantitative and qualitative survey data to allow for deeper insights into the effort and burden experienced by researchers across the whole research lifecycle.
- ⇒ The sampling strategy used did result in broad representation of different types of funding organisations and Higher Education Institutions, although response rate was lower than expected.
- ⇒ Despite efforts to recruit early career researchers, the number of early career researchers that completed the survey were not equal to that of mid to senior researchers.

## INTRODUCTION

In the current fast-paced, dynamic and demanding UK health research environment, researchers often find they must balance their research, faculty and clinical commitments with preparing and submitting funding applications and (if funded) reporting on research progress, outputs and impact.<sup>1 2</sup> Application processes, for example, generally involves some form of staged approach (eg, stage 1 submission, followed by stage 2) with elements of external peer review, and funding panel or committee recommendations which in turn require a rebuttal to reviewer comments and a revised proposal from applicants.<sup>3</sup> These processes can be complex, vary considerably between funding organisations and in many cases includes additional pre-submission processes that are required by Higher Education Institutions (HEIs), such as internally competing for submission quotas or internal and external peer reviews.<sup>3</sup> Furthermore, throughout the delivery of the funded research and following completion, researchers are also often required to



complete reporting requirements in the form of reports on the progress, outcomes and impact of their research to funding organisations (eg, via progress reports directly to the funding organisations or via external reporting platforms such as Researchfish: <https://researchfish.com/>), HEIs (eg, finance reports) and other organisations involved in the research or reporting (eg, Clinical Trials Units (CTUs), National Institute for Health and Care Research (NIHR) Clinical Research Network (CRN)). Completing these processes takes considerable time and effort, and sometimes, duplication of effort that may not always be visible to funding organisations, HEIs or other organisations but nevertheless negatively affects researchers' workloads and well-being.<sup>1-7</sup> For example, a recent survey found that research ethics and governance processes were unclear, repetitive, inconsistent and disproportionate which in turn had unintentional consequences to research delivery and led to researcher stress and demoralisation.<sup>7</sup> Moreover, when asked about application processes and peer review, researchers reported feeling frustrated by the lack of consistency and clarity in the processes that are required to be undertaken and the amount of time the application process takes overall from submission to funding decision.<sup>3,8</sup>

There are also many positive benefits to undertaking preparing and submitting applications and reporting on research. For example, without funding many research studies simply would not take place. Furthermore, Ayoubi *et al*<sup>9</sup> found that applicants (regardless of funding decision) who submitted a research proposal to the Swiss National Science Foundation SINERGIA programme had increased number of publications, average impact factor of the journal and better networks than those who did not apply. In addition, Corsini and Pezzoni<sup>10</sup> found that publications supported by the French funding organisation l'Agence Nationale de la Recherche received more citations than research published without competitive funding. However, Dresler *et al*<sup>6</sup> argue that the overall time and effort afforded by applicants out-weighs the benefits of the funding and that many funding practices have unintended negative consequences to the wider research system.

The Department of Health and Social Care, the Department for Business, Energy and Industrial Strategy (now within the Department for Science, Innovation and Technology) and the Department for Education have raised similar concerns around the growth of unnecessary complexity and bureaucracy in research, and in turn the degree to which these administrative activities are efficient, appropriate and proportionate and add value to funding and research delivery.<sup>11,12</sup> It has been questioned whether some of these activities constrain research, create unnecessary burden for researchers and ultimately distract from the core purpose of research; scientific discovery and impact.<sup>7,11-18</sup> As yet there is limited understanding of all the processes that researchers are required to complete across the end-to-end research funding lifecycle, with even less evidence identifying those processes that may

be regarded as unnecessary, wasteful, burdensome or have limited value. To address this, our study aimed to explore and build understanding on researchers' experiences of funding processes, in particular what researchers perceive as requiring unnecessary time and effort when applying for and obtaining funding and/or fulfilling reporting requirements for any UK health and social care research funding between January 2018 and June 2021, and finally, the potential negative consequences of the perceived unnecessary bureaucracy on research time and researchers' well-being.

## METHODS

### Design

This cross-sectional study used a survey design to gather quantitative and qualitative information about funding applications and reporting requirements, and the perceived effort and burden experienced by researchers when completing these processes. This survey study is reported according to the Checklist for Reporting Results of Internet E-Surveys.<sup>19</sup>

### Patient and public involvement

No patients were directly involved in this study. However, the views of members of the public were sought as part of this study in the form of a project advisory group. The advisory group comprised six representatives from the NIHR centres, NIHR CRN and Research Design Service (RDS) and two public contributors with experience of funding committees and reviewing funding applications. Five members also had experience of being researchers/applicants. The members of the advisory group were identified via networks within NIHR with an interest in research on research (under which this project fell) and spanned the breadth of the NIHR. Members of the advisory group reviewed and discussed the project aims and draft survey questions.

### Survey development

Due to the COVID-19 pandemic and possible changes in funding and reporting processes during this time, two separate surveys were developed to capture researchers experiences pre-COVID-19 (survey A: January 2018 and March 2020) and during COVID-19 (survey B: March 2020 and June 2021). Both surveys were delivered online using iSurvey software maintained by the University of Southampton (<https://isurvey.soton.ac.uk/>). The survey questions were iteratively developed based on known processes for funding applications and reporting requirements, evidence from previous research<sup>3,8,20</sup> and discussions with members of the research team and advisory group members. The survey was piloted and revised accordingly, to ensure the questions and response options were relevant for the intended users. The final surveys consisted of the 26-questions that were the same for each survey. For each survey, respondents were asked to report and reflect on their experiences of contributing to *any*

funding applications and/or their experience of fulfilling reporting requirements for any UK health and/or social care research funding between January 2018 and March 2020 (survey A) or March 2020 and June 2021 (survey B). Survey A also included an additional eight questions (optional) that asked researchers to compare their experiences of application and reporting requirements before and during COVID-19 (see online supplemental appendix 1 for survey). Respondents were required to answer all relevant questions and complete the survey in one session (they could review and change their answers through a back button).

### Eligibility and consent

Due to the varied experiences of researchers across career stages, funder requirements and our specified time frame, we anticipated that some researchers would have experience contributing to funding applications but would not have experience of fulfilling reporting requirements, and vice versa, and that some researchers would have experience of both during our time frame. Therefore, to be eligible for the survey, respondents were required to either have experience of (i) contributing towards preparing and submitting a funding application for a UK research funding organisation between January 2018 and June 2021 OR (ii) fulfilling research requirements for funded health/social care research from a UK research funding organisation between January 2018 and June 2021 OR (iii) experience in both the previous options. If they did not have experience in preparing and submitting a funding application or fulfilling reporting requirements during the time frame, they were not able to enter the main survey questions. Before entering the main survey questions, respondents were asked to complete the online consent and confirm their experience.

### Distribution of survey

Purposeful and opportunistic sampling was used to target a range of researchers at various stages of their academic career, with experiences of applying for/obtaining funding and/or fulfilling reporting requirements for several UK funding organisations. No other researcher characteristics (eg, ethnicity, gender) were used to stratify sampling, as this data was not available to us. Recruitment strategies targeted researchers who had applied to UK health research funding organisations with the largest annual research expenditure based on the UK Health Research Analysis 2018 (UK Health Research Analysis 2018—HRCS Online) (see online supplemental appendix 2). A list of researchers, in particular the lead applicants were identified and collated through online searches for research projects funded between 2018 and 2021 on the identified UK funding organisation websites. Contact details of the lead applicants were identified via HEI, NHS, industry and government affiliations listed on the funding information. To account for survey response rates, which are typically expected to be approximately 20%,<sup>21 22</sup> 50% of the listed researchers were randomly

selected (using <https://www.random.org/>) from each year and funding organisation/grants programmes to take part in the study. The exception to this was that all the lead applicants that were awarded a studentship were invited to participate in order to try to capture the experiences of early career researchers. The lead applicants were sent an invitation email, study information and access link to the relevant survey based on the year of the funded project (ie, successful after March 2020 were sent survey B link). In addition to this, the surveys were promoted across social media platforms such as Twitter, providing a direct link to the online survey. The surveys launched on 17 August 2021 and stayed open for 14 weeks, closing on 27 November 2021. Two reminder emails were sent four to 6 weeks after the initial email invitation. No incentives were offered to the respondents.

### Data analysis

All survey data was downloaded to Microsoft Excel 2016 and stored in a dedicated research folder on the University of Southampton's internal secure server. Prior to analysis, data was screened by two members of the team. Responses were included if respondents had fully consented and completed at least the application or reporting requirement sections. Descriptive statistics (frequency and percentages) were calculated for the closed question responses in Microsoft Excel 2016. Free-text responses were uploaded into Nvivo 12 and subject to thematic analysis.<sup>23</sup>

Initially two authors (KF, KM) coded the free-text responses from the two surveys separately. Both authors familiarised themselves with the datasets for both surveys, and independently generated preliminary codes and themes. The two authors met to discuss the preliminary quantitative findings and codes/themes for each survey in detail. The authors concluded that the preliminary quantitative findings and codes/themes for each survey were similar and there were no notable differences between them. The experiences captured in the themes were a reflected in both survey datasets and as such the decision was made to combine the datasets for the final analysis. Initial codes and potential themes were discussed by the two authors, and these were refined through an iterative process of review and discussion, and data was re-coded by the two authors until consensus was met for the final themes and underlying codes. The final themes were then reviewed and agreed by all team members. No changes were made to the final themes.

## RESULTS

### Respondent characteristics

A total of 2300 email invitations were sent to targeted researchers, 20% (460) were undeliverable or not active, and from the remaining, 185 responses were received (response rate of 10%). Three respondents did not complete the sections and their responses were excluded from the analysis, leaving 182 completed responses.

**Table 1** Respondent characteristics and distribution of the number of applications submitted and funded projects requiring reports between January 2018 and June 2021

Characteristics	n*	%
Gender identity		
Female	111	61
Male	62	34
Non-binary	2	2
Prefer not say	7	4
Career stage		
Senior-career researcher	98	54
Mid-career researcher	48	26
Early-career researcher	30	16
Not on an academic pathway	6	3
Affiliation		
HEI	143	79
NHS	10	5
Dual-affiliated (HEI/NHS)	19	11
Prefer not to say	10	5
Location of affiliated HEIs		
London	30	21
East Midlands	9	6
East of England	8	6
North East England	2	1
North West England	13	9
South East England	21	15
South West England	16	11
West Midlands	2	1
Yorkshire and the Humber	10	7
Scotland	22	21
Wales	3	2
Northern Ireland	2	1
Outside UK	1	1
No. of submitted funding applications		
0	6	3
1	23	13
2	31	17
3	22	12
4	19	10
5	27	15
6	12	7
7	5	3
8	13	7
9	1	1
10+	23	12
No. of projects requiring reports		
0	24	13

Continued

**Table 1** Continued

Characteristics	n*	%
1	57	31
2	38	21
3	24	13
4	16	9
5	13	7
6	3	2
7	2	1
8	1	1
9	0	0
10+	4	2

\*n=182.  
HEI, Higher Education Institution; NHS, National Health Service.

**Table 1** shows the respondents characteristics. Of the 182 respondents, 61% identified as female, 34% as male, 2% as non-binary and 4% prefer not to say. Over 80% of respondents identified as white British, Irish or another white background (157/182), while the remaining 13% identified as either multiracial or from Indian, Pakistani or Asian backgrounds (15/182, 8%), or preferred not to say (10/182, 5%). Most respondents were senior-career researchers (98/182, 54%), affiliated with HEIs across the UK (143/182, 79%).

Over 65% of respondents reported submitting between 1 and 5 funding applications (122/182) and fulfilling reporting requirements for 1–3 funded research projects (118/182) between January 2018 and June 2021 (**table 1**). Out of the 182 respondents, 176 respondents (97%) had applied for research funding between £151 000 to £1 million (117/176, 66%) and £1.1 million to £5 million (94/176, 53%) from a range of funding organisations, including the NIHR (128/176, 70%), Medical Research Council (70/176, 38%) and Wellcome (49/176, 27%) (see online supplemental appendix 3). In terms of success, 22% of respondents (39/176) reported that all applications were successful, 72% (126/176) reported that some were successful, 4% (7/176) reported all were unsuccessful and 2% (4/176) did not know the outcome.

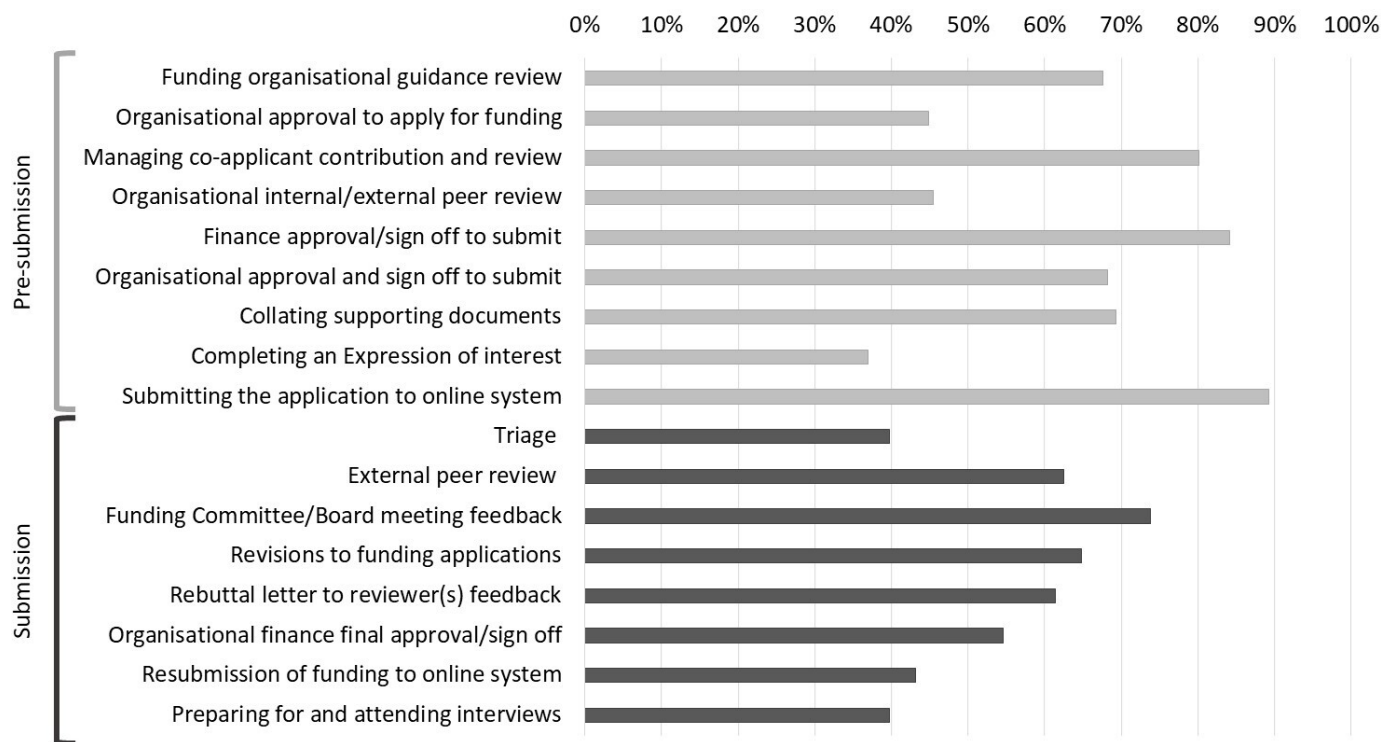
### Descriptive statistics of responses to closed questions about application processes and reporting requirements

#### Application processes

**Figure 1** shows the list of processes and the percentage of respondents that considered these processes key to complete during pre-submission and submission period. All respondents completed at least two of the processes, with most (102/176, 58%) completing between 7 and 13 processes.

Most respondents identified the pre-submission processes as important to complete with ‘Submitting the application online’ (157/176, 89%), ‘Organisation finance departments approval/sign off to submit’





**Figure 1** The processes and frequencies (%) in which respondents considered these processes key to complete to prepare and submit an application. Light grey indicates the processes to prepare and submit a funding application (pre-submission); dark grey indicates the processes for during the funding review and decision period (submission).

(148/176, 84%) and ‘Managing coapplicant contribution and review’ (141/176, 80%) most often reported as key to complete. For the submission period, ‘Funding Committee/Board meeting feedback’ (130/176, 74%) and ‘Revisions to funding application’ (114/176, 65%) were most often reported as important to complete (figure 1). When asked whether they thought it was important to undertake all the processes selected in application process, 69% of respondents (122/176) felt that it was critically important to undertake all of them, 27% (48/176) felt it was important but not critical, while only 2% (3/176) felt that it was not important. When asked whether they sought any information or support for completing these processes, 85% (150/176) reported seeking support and information, which they accessed through a range of organisations and colleagues, including funders (117/150, 78%), HEI research management support (102/176, 68%) and HEI colleagues and peer support (92/176, 61%) (see online supplemental appendix 4).

### Reporting requirements

143 respondents (79%) confirmed experience of fulfilling reporting requirements for funded research between January 2018 and June 2021 (24 (13%) did not have experience and 15 (8%) did not complete the section). All 143 respondents reported submitting a minimum of one report for funded research during January 2018 and June 2021, with an average of 17 reports (range: 1–73 reports) submitted across the different organisations

(eg, funders, HEIs, CRN). Respondents reported submitting a variety of reports, most commonly on progress, dissemination, budget and impact. Although respondents were required to submit reports to a number of organisations, the type of information required by each of the organisations varied (see table 2). Overall, funding organisations required the most reports, with an average of seven reports submitted directly to the funding organisations between January 2018 and June 2021, compared with 1–3 reports submitted to other organisations. When asked how often organisations ask for the information in a funding period, responses ranged from monthly, quarterly, biannually, annually to once during funding period.

Over half of respondents (80/143; 56%) felt that it was important but not critical to provide all the reporting information to the different organisations. Only 33% (47/143) felt it was critically important to provide all the information. In terms of information and support, 65% of respondents (91/143) felt that organisations provided sufficient information on the importance of fulfilling reporting requirements. Less than half (61/143, 43%) sought information or support to help complete reporting requirements. For those that did, they mostly accessed information and support through their HEIs (43/61, 70%), funding organisations (42/61, 69%) and CRN (20/61, 33%) (see online supplemental appendix 4).

**Table 2** The frequency and percentages of respondents submitting the different types of reports to organisations and reporting platforms

	Funder(s) n (%)	Researchfish* n (%)	Sponsor† n (%)	Ethics committee n (%)	CRN n (%)	CTU n (%)	HEI n (%)
Progress updates	<b>126 (89)</b>	56 (39)	18 (13)	38 (27)	<b>11 (8)</b>	8 (6)	21 (15)
Final report	<b>107 (75)</b>	29 (20)	17 (12)	29 (20)	5 (4)	10 (7)	21 (15)
Dissemination	91 (64)	<b>84 (59)</b>	8 (6)	7 (5)	4 (3)	5 (4)	38 (27)
Budget	88 (62)	5 (4)	12 (8)	2 (1)	3 (2)	5 (4)	<b>59 (42)</b>
Impact	76 (54)	<b>80 (56)</b>	11 (8)	4 (3)	4 (3)	5 (4)	<b>47 (33)</b>
Engagement	73 (51)	64 (45)	6 (4)	5 (4)	3 (2)	4 (3)	23 (16)
PPI	69 (49)	25 (18)	8 (6)	14 (10)	2 (1)	5 (4)	15 (11)
Recruitment updates	66 (46)	12 (8)	13 (9)	18 (13)	<b>33 (23)</b>	11 (8)	16 (11)
Ethics approvals	59 (42)	5 (4)	<b>31 (22)</b>	<b>65 (46)</b>	8 (6)	<b>12 (8)</b>	41 (29)
Protocol changes	57 (40)	2 (1)	<b>31 (22)</b>	<b>59 (42)</b>	8 (6)	<b>15 (11)</b>	18 (13)
Personnel changes	57 (40)	6 (4)	15 (11)	9 (6)	5 (4)	8 (6)	32 (23)
Awards	46 (32)	61 (43)	9 (6)	1 (1)	2 (1)	3 (2)	45 (32)
Collaboration	43 (30)	60 (42)	7 (5)	2 (1)	3 (2)	4 (3)	34 (24)
Interim analysis	28 (20)	4 (3)	8 (6)	5 (4)	3 (2)	8 (6)	3 (2)
Average number of reports completed per respondent	7 (SD: 4)	3 (SD: 3)	1 (SD: 3)	2 (SD: 2)	1 (SD: 1)	1 (SD: 2)	3 (SD: 3)

n=143; bold indicates top 2 submitted documents for each organisation based on percentages.

\*Researchfish is an external reporting platform used by funding organisations to collect data on funded projects.

†Reported only if not HEI.

CRN, Clinical Research Network; CTU, Clinical Trials Unit; HEI, Higher Education Institution; PPI, patient and public involvement.

### Qualitative themes describing researchers' experiences with application processes and reporting requirements

From responses to the free-text questions (11), themes were developed relating to process inefficiencies, lack of understanding, the support required by respondents to complete application and reporting requirements and the time, effort and impact on workload and well-being (figure 2). A summary of themes and associated quotes are reported in the supporting information (see online supplemental appendix 5). The following sections describe these themes in more detail.

#### Understanding and clarity of application assessment processes and the need for reporting requirements

This theme reflects the need to understand and have clarity on the processes associated with application assessments and reporting requirements. For applications, respondents suggested that funding organisations and HEIs need to include a clear outline of the processes involved in submitting an application.

Clear description of process within HEI, followed up by clear lines of responsibility and responsiveness from HEI internal admin functions. (P82)

In terms of reporting requirements, there was a clear desire to increase clarity on reasons for reporting and how the data is used. While some respondents felt that they understood how some of the data was used (eg, governance and accountability, to track and monitor progress,

and measure performance), most were unsure or had 'no idea' on how the information submitted is used, when it is used or who accesses it. Furthermore, some respondents were sceptical and doubted that the information is used or read at all as they never receive feedback.

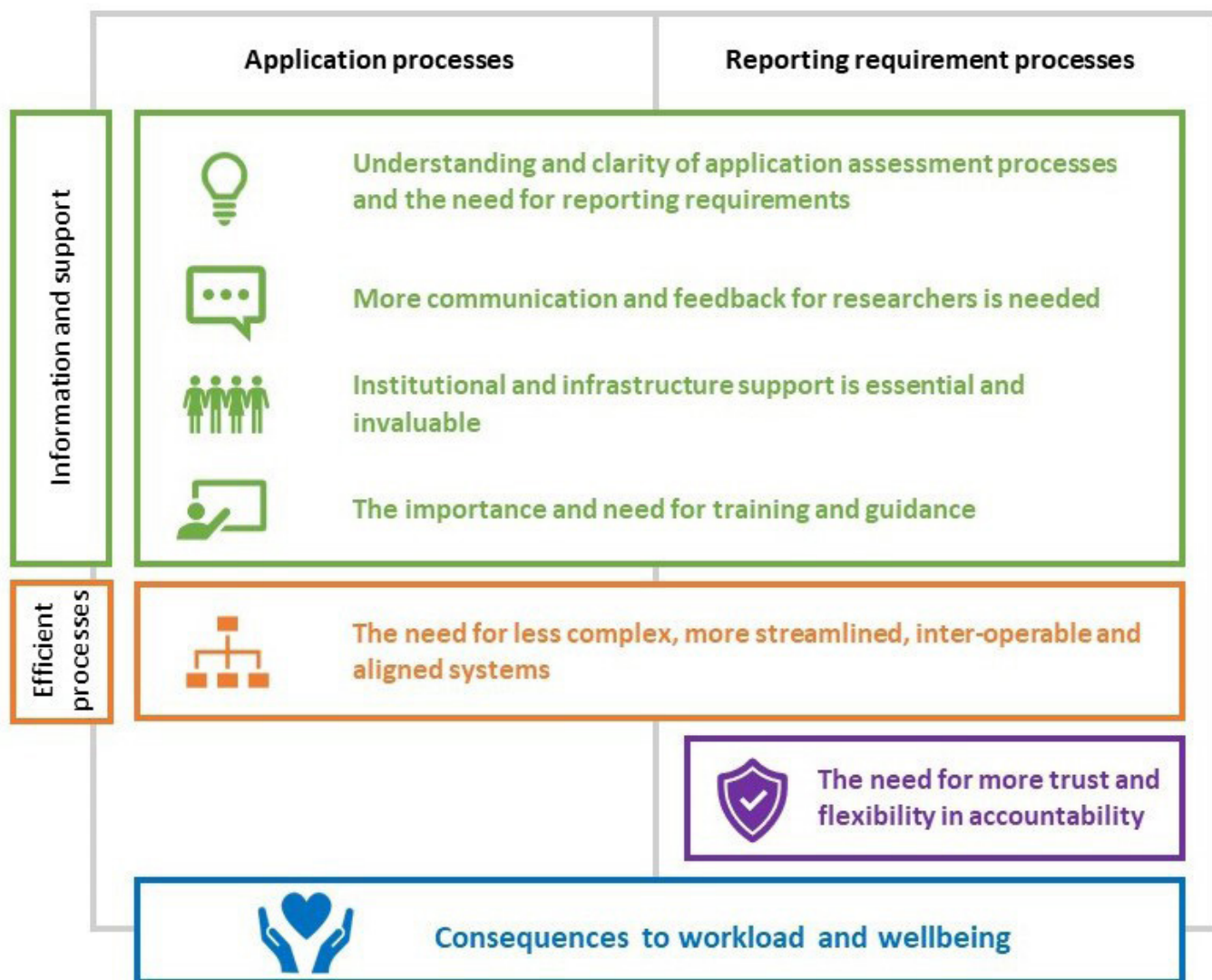
We have no real idea [how the data is used]. We just have to do a lot of stuff over and over again. Much of it makes little to no sense, especially Researchfish. (P142)

#### More communication and feedback for researchers is needed

Respondents wanted explicit and clear information on what was required in the application forms, what types of research are within remit for funding, who will review the application and the selection criteria for funding recommendations. During the application process, it was felt that being able to contact the funder via email or phone and receive support and advice on completing an application was essential and respondents valued being able to do this.

IT support more readily available for online issues that crop up. (P105)

In line with this, respondents also wanted organisations to communicate the purpose and importance of reporting requirements (eg, how the data is used, by whom and how it influences future funding or funding organisation processes and structures) and provide explicit guidance



**Figure 2** Visual representation of the themes for researcher experiences of the processes, effort and burden involved in preparing and applying for funding and fulfilling reporting requirements.

from the project outset. It was also felt that researchers should be informed about reporting requirements during the application process.

It would be helpful if researchers were provided with a checklist of reporting requirements from the funder at the outset of their award with relevant contact details. (P42)

Being provided with feedback for both application and reporting requirements was considered important and essential to support researchers and improve understanding of funding recommendations/decisions. For applications, it was felt that funding organisations should provide detailed and constructive feedback on successful *and* unsuccessful applications. Respondents wished to have more feedback on why an application was unsuccessful so that they, the applicants, can learn for future proposals and avoid wasted effort.

A lot of time spent—and sometimes feedback about reasons [the application is] unsuccessful are vague. (P178)

For reporting requirements, respondents stated the need for ‘some feedback on what we send’ (P100) so that they know that the information submitted is what is expected and that they are not spending time providing information that is not needed or part of the organisation requirements.

A one-way flow of information isn’t as useful as a two-way dialogue on how things can be improved or risks avoided/mitigated. (P112)

In contrast, while reminders to complete report requirements were considered important to help keep track of when they are due, respondents felt that there were often too many reminders for the same reports.

### Institutional and infrastructure support is essential and invaluable

Essential for completing funding applications and reporting requirements was having support from HEIs, colleagues, funding organisations and research infrastructure (eg, CRN, RDS, CTUs). For both applications and reporting, there was a clear sense that HEI support was not always readily available and could be improved; especially, more consistent research management, finance and administrative support.

Organisational finance approval and sign off [is] very burdensome especially for stage 1 applications. (P53)

For reporting requirements in particular, respondents thought that dedicated finance and ‘administrative support should be offered by the institution for all of the compulsory reporting’ (P11). Furthermore, it was believed that funding organisations should provide funds for ‘proper admin support as part of research applications’ (P87). Respondents also thought that having a named contact within the funder to answer queries or any issues was invaluable, and that the guidance for reports should be consistent.

We were continuously asked to use the new guidelines despite it being agreed previously we could adhere to the guidelines which had been in place at the time of submission. (P106)

Support, advice and critical review from peers, co-applicants and senior colleagues was considered invaluable and helped to reduce workload. This was especially apparent for application processes, in which access to others’ experiences of applying to the same funder and previously submitted applications to the same or similar schemes/programmes were considered helpful when writing an application. It was also suggested that having repositories for successful applications would be beneficial, although, it was not clear whose responsibility it should be to provide this.

RDS support was considered as an excellent and timely source of support, when needed. Similarly, it was felt that CTU support could be helpful. However, accessing CTU support was not always easy as it could be expensive to access and CTUs could not always accommodate projects that only required small amounts of support. For many respondents, however, the availability of support was not the problem but instead part of the wider issue around ‘a flawed system’ (P168).

I’m not really worried about support, there’s plenty. What would be nice would be for funders to reduce the complexity of their processes, thus reducing the need for so much support. (P109)

### Importance and need for training and guidance

Following on from communication to researchers, training and guidance were highlighted as a mechanism to improve understanding of the reasons behind processes for applications and reporting requirements.

Training sessions for writing funding applications, especially for early career researchers, were considered essential and helpful to develop an application and gain understanding of the processes involved. However, while some felt that the guidance was clear and comprehensive, others felt that it was vague and often had conflicting information across multiple documents which made it difficult to know what information to use.

But there is often a lot of guidance and finding a way to reduce this to focus on clear, simple processes might be useful. (P163)

For reporting requirements, respondents expressed a desire to have access to training, webinars or written guidance on what is required for reporting, how to complete the forms and use the systems. Respondents felt that templates and examples would be helpful. However, it should be noted that respondents did not want to be overwhelmed with too much information as it would take time and effort that they do not have to go through the information.

[for Researchfish] some examples of impacts in different domains would be good. (P24)

### Need for less complex, more streamlined, inter-operable and aligned systems

For applications, there was a clear desire for funding organisations and HEIs to use less complex and more streamlined processes. It was considered ‘a massive job to develop a trial and apply for funding’ (P90), increased by the numerous unnecessary obstacles for HEI approvals, peer review and the funding organisation processes. In particular, the formalisation of internal reviews by HEIs, while valued by some, was in general considered an unnecessary, unhelpful and time-consuming step as ‘applications are already reviewed by colleagues at time of writing’ (P52). In fact, respondents felt that formalising reviews had increased burden (additional time is needed to complete the reviews for each other) and potentially added an additional level of competition which could result in being prevented from submitting their applications.

Furthermore, it was felt that funding organisations could make the processes simpler, reduce the amount of information required (eg, supporting documents) and the time from submission to decision. Specifically, whether ‘the review process [could] be accelerated’ (P153), and the number of external peer reviews be proportionate to size/type of project, leaving time for rebuttals. For funding organisations that use staged approaches (eg, stage 1 submission, followed by stage 2), some felt that ‘a light touch expression of interest’ (P34) at stage 1 should be considered to reduce burden on applicants, while others believed that stage 1 application could be dropped all together. Some suggested that alternative application processes should be considered, such as randomisation, longer-term funding or more



discipline-relevant application forms (ie, not just focused on clinical trials).

The processes should be streamlined and made less onerous to reduce the amount of time researchers need to spend on these predominantly administrative activities so they can spend more time doing research! (P147)

For reporting requirements, issues with duplication, repetition, effort and time and a need for more aligned efficient systems were raised throughout. In particular, completing bespoke reports for each organisation asking for the same or similar information was considered repetitive, time-consuming and required unnecessary effort. The frequency and volume of reporting were also seen as ‘onerous, taking up precious research time’ (P28). Respondents again proposed that processes could be simplified and more proportionate to the size of study and overall streamlined by having a single report that goes to all organisations, with automated sharing across systems (such as automatically importing publications from ORCID) or one system where researchers submit reports.

Avoiding needing to repeat information—e.g. if the funder has Researchfish that could be used for publications etc and replace info in reports. (P31)

Furthermore, the forms, websites and systems currently used for submitting applications and reporting were criticised for being inefficient, over complicated and time-consuming, whereby ‘hours can be wasted in these inefficient systems’ (P11). As such respondents wished that the systems for both application submission and reporting were more user friendly, intuitive, and allowed for information to be copied and pasted into the form.

#### Need for more trust and flexibility in accountability

The need for trust and flexibility in accountability was raised by some respondents. Projects protocols, plans, teams and budgets can change throughout the funded timeframe and respondents felt that reporting that sticks to original plans is wasted and that there should be flexibility around this. Although respondents recognised the need to report major changes, they did feel that continuous monitoring and reporting of every change was needless and burdensome, and ultimately reflected a lack of trust in the researchers to complete the project. They wanted funders to trust them to do the research and to make small changes, without having to complete a form to report every change that is made.

The monitoring [...] however is totally over the top and very burdensome—it leaves no trust in us as researchers, and seems to be just wanted to close us down. (P53)

#### Consequences to workload and well-being

Respondents recognised that there were processes that took time but were necessary or unavoidable (eg, people management, output and engagement activities, supporting colleagues). However, it was also felt that many processes were perceived as an unnecessary burden in the research system. Respondents felt that increased workload resulting from application and reporting processes can have consequences on their work-life balance as they are ‘over committed to research activity’ (P45). These additional administrative tasks (eg, internal peer review, completing reporting requirements) often go beyond the funding allocation, meaning that applicants are worse off both with respect to personal time and financially.

To be successful in research you have to sacrifice a substantial part of what would otherwise be free time for unpaid work. (P31)

Long hours associated with research, academic and clinical commitments and constant pressure to apply for funding were felt to impact on family and leisure activities; and both physical and mental well-being.

the extra hours for these extra tasks have to come from somewhere and it is not normally the working day which takes away from time that you can spend with your family or winding down. (P141)

Respondents felt that being unable to step away from work led to reduced research productivity and as such career progression being adversely affected. Likewise, respondents reflected that writing applications meant that they were less productive as it ‘takes away the time that would otherwise be spent on core research activities’ (P8). Frustration, stress and anxiety were all reported as negative impacts on well-being.

It just brings so many unnecessary stress and working late into the night (P96)

Concerns were raised that the increased workload associated with application writing and reporting would be higher for some than others. For example, early career researchers who ‘also step up and do this, going far beyond working hours at times’ (P100) and those with caring responsibilities who may not be able to devote as much time and energy to writing applications. It was felt that the HEIs and funding organisations need to make ‘the process more streamlined and accessible for people in these groups’ (P1) and to have more realistic expectations of what can be achieved within realistic timeframes that does not impact on working hours or family commitments.

While some respondents saw this as part of the job, others felt that this was unsustainable and reflected that current research culture of long hours and expectations for successful applications have made some researchers consider leaving research.



I am burned out [...] and doubt that I will sustain a career in grant-funded academic research given the bureaucracy and wasteful processes involved. (P166)

### Changes in processes as a result of the COVID-19 pandemic

70 respondents had applied for funding or fulfilled reporting requirements during the COVID-19 pandemic. Of these, 60% and 89% of respondents stated that there were no differences in any of the application processes (42/70) or reporting requirements (62/70) during the pandemic, respectively. Of those that did feel there were differences, the majority were reported for application processes. Respondents reported that the application process was simpler and shorter with less requirements for additional documentation and that funding committees were held online. Although this was in general seen positively, there were concerns that decisions were being based on less information because less detail was being provided, interviews for some grants/personal awards were not taking place, and there was no opportunity for feedback or rebuttal. For a few, the changes resulted in having reduced funding and decisions being deferred. For reporting requirements, there was an increase in workload during the pandemic, with more frequent requests for reports (eg, assessing the level of risks to fulfilling the research) and further justifications for funding or time-frame. Overall, all respondents felt that the processes for applications and reporting were not transparent.

### DISCUSSION

This is the first survey study to specifically ask researchers about their experiences of funding processes, the perceived effort and burden associated with completing them, and how this affects their work-life balance and well-being. Our survey results highlighted the considerable effort and burden experienced by researchers during the application and reporting requirement processes, independent of which organisation required the information. It was recognised that some processes are important and necessary to successfully obtain funding, and to fulfil reporting requirements for transparency and accountability of public funding. These processes were seen as worth the time and effort put in. However, other processes were seen as requiring unnecessary time and effort.

In many cases, the application and reporting requirement processes were perceived by respondents in our survey to be overly complex, involving a number of organisational reviews, approvals and platforms, often taking up disproportionate time that can sometimes place pressure on researchers to work out-of-office hours to get everything completed. This study found that the majority of respondents felt that pre-submission processes were critically important to complete. This is perhaps unsurprising given the incentive of potential funding. However, while some respondents accepted that these processes need to be completed and were valued, they were often

considered difficult to manage and complete on top of high-demanding workloads and competing time constraints. This has made it hard for some researchers to maintain a good work-life balance. Similar difficulties were described for completing reporting requirements, however in this case, respondents struggled to understand the value in completing the reports. Many respondents were unclear on the purpose and rationale for the information requests; why were they being asked to provide the information, what is needed, and whether the information is suitable and if not, why not. The majority of respondents did not equate the same level of importance to completing the reports as they did for completing funding applications.

Respondents also raised the need for clear expectations and criteria for funding applications (ie, what funding committees wanted and how the applications would be assessed, both in terms of content and research topic). Our findings indicated that communication and training was key to improving understanding of the purpose and expectations for applications and reporting, and that feedback could help further improve understanding of requirements for these. As a result, this feedback could potentially reduce the scepticism and doubt that the information is not actually used, increase the value placed on the reporting and help to tailor the applications and reduce wasted effort. Aligned with this, Tickell's independent review<sup>18</sup> also recommended that transparency and communication were key to improving understanding and ensuring clear expectations between the organisations and the researchers. Funders and sector partners are working together to address the recommendations highlighted by Tickell's independent review.<sup>18</sup>

Trust and communication have been highlighted as important for improving research culture and reducing stress and anxiety.<sup>2</sup> Our findings suggest that some researchers feel that the continuous monitoring and reporting was a reflection of the lack of trust to complete the research on target and within budget. Some of our respondents felt that they should be trusted to be responsible for the research and funding, and not have to report every small change as this was needlessly adding to workload and burden. Lack of trust and communication between researchers and workplaces can lead to researchers feeling unsupported and under-valued.<sup>2</sup> Increasing communication and providing feedback may have the added benefit of potentially building trust between researchers and the organisations involved in reporting, and making researchers feel that the time and effort used is valued by the organisations involved. As well as a lack of trust, some of our respondents reported being overwhelmed and stressed, working into the evenings and weekends trying to manage all of their commitments. Worryingly, while research was seen as a vocation, there was a growing feeling of despondency and motivation to continue in this manner long term, with some researchers considering leaving academia. This current research culture, whereby there is an expectation

that researchers can maintain long hours, produce high-quality research and publications, teach and undertake clinical commitments while completing these additional application and reporting processes, is considered unsustainable long-term.<sup>2</sup> A recent report<sup>24</sup> identified the need for complete 'end-to-end' funding of research activities to improve these long-standing inefficiencies associated with our current ways of working. This need was clearly evident in our findings, with some respondents calling for more dedicated administration and financial support from HEIs and funding to cover this.

A range of support was available for some of the processes and in general respondents appreciated the support being offered by the organisations, and their colleagues/co-applicants. However, some respondents were frustrated that the complexity of the processes required a reliance on support. For example, many expressed frustrations at the number of different online systems, most of which were not user-friendly and required similar information being submitted (also evident in the quantitative findings). A recent scoping review<sup>25</sup> highlighted that most organisations used in-house digital systems for reporting purposes and that in some cases more than one system was used to collect research reporting information from applicants/researchers. Indeed, in this case, it is not the support that was the issue but the wider research system and the expectations that fall on lead applicants and researchers. Overall, similar to previous research,<sup>6 7 18 20 24 25</sup> it was felt that processes could be streamlined, more proportionate, more efficient, and there could be more alignment between systems for both application and reporting processes.

### Strengths and weaknesses of the study

We used information provided on funding organisations websites for funded projects to identify researchers to take part in the study. This meant that we had a large pool of researchers who had applied for research funding in the specified time. However, despite emailing 2300 researchers, 460 emails were either undeliverable or not active and the overall response rate was lower than expected, with only a 10% return (182 respondents). Researchers often move between institutions or leave jobs and as such the old emails were no longer usable or active. Furthermore, the timing of the study could have influenced the response rate. The survey launched in August 2021 during the summer holiday period when many researchers may be away from work. However, recently Snooks *et al*<sup>7</sup> reported a survey with a similar population that had a similar response rate and so the low response rates may be a consequence of researchers high workloads and limited spare time.

In addition, although researchers from HEIs around the UK completed the survey, the majority were senior-career or mid-career researchers, women and white British researchers which may reflect a bias in our findings. With respect to career stage, some of the issues raised may not reflect the experiences of early-career researchers.

Although not explored directly, responses throughout the survey, and from respondents across different career stages, indicated that experience did reduce the burden and time needed to complete certain processes and that early career researchers may have different struggles that should be recognised by the HEIs and funding organisations. Future studies may consider focussing on early career researchers or explicitly comparing views across career stage to better understand how experience may affect effort and burden associated with application and reporting requirement processes.

The disparity in our sample could be a result of our sampling strategy. We did not know any details about the researchers, only which funding stream/fellowship they had applied to, and so focused on targeting a range of researchers at different stages of academic career. We focused on lead applicants for each funded project, and while all the researchers that were awarded studentships were invited to the study, it was not clear from the information on funded projects whether the listed lead applicant was the student or the supervisor. Having said this, the proportion of mid to senior researchers and white British researchers in our sample is aligned with other studies.<sup>1 26</sup> Furthermore, in 2021, Wellcome Trust reported that there was a decline in early career fellowships award rates from 18% to 7% over previous 5 years.<sup>27</sup> It is therefore possible that this sample reflects characteristics of researchers who are generally funded for health research in the UK or this sample may simply reflect those who have time, capacity and/or interest. Future studies should also consider recruitment strategies to get a more representative sample or focus on targeting under-represented researchers to determine whether certain characteristics bear a role in the effort and burden associated with application and reporting requirement processes. This is important to address as not only will it allow identification of solutions that are tailored to specific researcher groups, but it may shed some additional light on whether and why there are disparities in who applies for and receives health research funding in the UK.

A strength of the study was that using a combination of open and closed-text questions meant that we were able to gain understanding of the type of processes researchers were required to complete, the organisations that request information and the time and burden associated with this. Although the majority of respondents did provide responses to the open-text questions, some were only short sentences, and we could not gain in-depth understanding of the issues raised. Therefore, a follow-up study should be conducted interviewing researchers to gain a more in-depth understanding of some of the key issues highlighted here and what in the short term may help to reduce the burden experienced by researchers.

### CONCLUSION

In conclusion, respondents recognised the need to complete processes for funding applications and



reporting, when they valued the processes or when they felt the information was valued by the organisations. A number of issues were raised throughout the survey, including the need to increase transparency, provide training and build on communications with researchers to improve understanding of the rationale for application and reporting processes. It was, however, felt by some researchers that some of the current application and reporting requirements are based on an unbalanced effort to reward ratio, which contributes to high time and effort workloads. This can, for some researchers, impact on well-being, not only in terms of the burden but also the resilience needed to continue to work in this research culture. Finally, this study highlights the processes which may require review and how processes can potentially be made more streamlined, aligned and proportionate.

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