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Work and health research funding review (2015–2020)

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Preface

This report sets out the findings of a study funded by the Department of Health and Social Care to map the landscape of funding for research in work and health in the UK. The report sets out the methods used for the study and presents the results of the data in detail. This report is likely of interest to research funders, researchers and policymakers as well as those working in research or healthcare provision related to work and health.

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Table of contents

Preface iii
List of figures and tables v
Abbreviations vi
Infographics vii
1. Introduction 1
1.1. Context and aims 1
1.2. Approach 3
1.3. Key strengths and limitations 3
2. Findings 5
2.1. Researchers and funders 5
2.2. Research characteristics 10
2.3. Policy application 22
3. Summary conclusions and final reflections 29
References 31
Annex A. Methodology 35
A.1. Funding analysis 35
A.2. Contextualisation of research funding 46

List of figures and tables

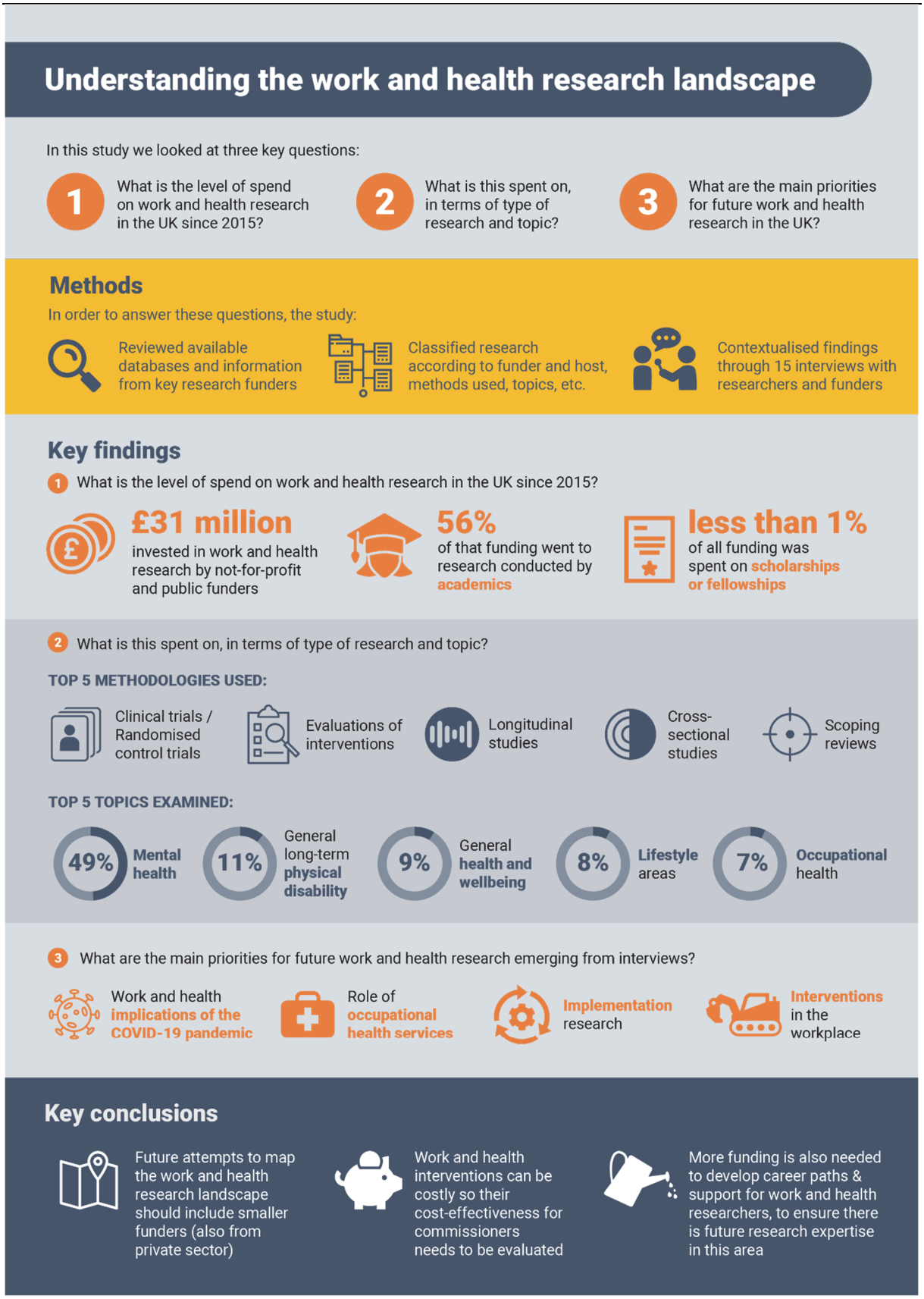
Figure 2.1: Distribution of funding by value of grants (in million GBP) 6
Figure 2.2: Comparison of amount of funding received by host institution 8
Figure 2.3: Top five methodologies used in the research on work and health by funding value 16
Figure 2.4: Top five methodologies used in the research on work and health by funding value and funder type 17
Figure 2.5: Spectrum of outcomes of interest in work and health research 21
Figure 2.6: Main outcomes of interest in the research on work and health (in million GBP) 22
Figure 2.7: Main policy themes covered in the research on work and health by funding value 24
Figure 2.8: Main policy themes covered in the research on work and health by funding value and by funding source 25
Figure 2.9: Main relevance to policy of the research on work and health by funding value 27

Table 2.1: Types of funders 5
Table 2.2: Institutions receiving funding for work and health research 7
Table 2.3: Types of awards granted for research in work and health 9
Table 2.4: Research specialism 11
Table 2.5: Research specialism (top five disciplines) by funder's sector 12
Table 2.6: Methodologies used in the research on work and health 15
Table 2.7: Methodologies (top five) by funder's sector 17
Table 2.8: Data collection vehicles used in the research on work and health 18
Table 2.9: Health topics covered in the research on work and health 19
Table 2.10: Main health topics (top six) by funder's sector 20
Table 2.11: Main policy themes covered in the research on work and health 24
Table 2.12: Policy themes (top three) by funder's sector 25
Table 2.13: Main relevance to policy of the research on work and health 26
Table 2.14: Policy relevance (top two categories) by funder's sector 27

Abbreviations

CARECOACH	Adapting and testing an intervention for carers of people with dementia
DARE	Discover Autism Research and Employment
DHSC	Department of Health and Social Care
DWP	Department for Work and Pensions
EMPOWER	Enabling and Motivating People (with a Personality Disorder)
ESRC	Economic and Social Research Council
HF	Health Foundation
HLT	Health Led Trials
HMRC	Her Majesty's Revenue and Customs
IAPT	Improving Access to Psychological Therapies
IOSH	Institution of Occupational Safety and Health
IPS	Individual Placement and Support
IPS-AD	Individual Placement and Support for Alcohol and drug dependence
NHS	National Health Service
NIHR	National Institute of Health Research
ONS	Office for National Statistics
SOM	Society of Occupational Medicine
RCT	Randomised Controlled Trial
ROWTATE	Multicentre Research Programme to Enhance Return to Work after Trauma
UKRI	UK Research and Innovation
WHU	Work and Health Unit
WWW	What Works Wellbeing Centre

Infographics



1. Introduction

1.1. Context and aims

The negative impacts of worklessness or poor work on health, and the positive impacts that good work[1] can have on health and wellbeing have been well evidenced.[2] Policymakers today face challenges driven by two parallel trends: the ageing population and the evolving world of work. People are living and working longer but many of those extra years are spent in poor health,[3] demanding adjustments or interventions at the workplace. Still today, too many disabled people and those with long-term mental health conditions are without work.[4] Digitalisation and globalisation transform the world of work, with COVID-19 accelerating these changes and affecting work-life balance, productivity, health and safety, mental health and wellbeing. Avenues for action include: health-led employment support; wider employment support (e.g. upskilling); workplace wellbeing interventions (involving employers); and occupational health, which is a particular area of concern in the UK due to decline in the academic base, as identified by Dame Carol Black.[5]

In order to address these challenges, policymakers and other decisionmakers (such as employers, commissioners of health services) need robust evidence available at the right time to inform their decisions. Already in 2008 Dame Carol Black's Independent Review *Working for a healthier tomorrow* highlighted the need for an extensive programme of research on health and work in Britain.[6] Yet, despite a fair amount of research being available, policymakers can still struggle to find the specific kind of evidence they need for specific purposes. The government consultation *Health is Everyone's Business* also pointed to the need for taking multidisciplinary approaches to work and health research, in order to improve the service provision and outcomes for individuals.[7] The consultation document also pointed to research coordination and

[1] According to the Taylor et al.'s review, good work 'is shaped by working practices that benefit employees through good reward schemes and terms and conditions, having a secure position, better training and development, good communication and ways of working that support task discretion and involve employees in securing business improvements.' See Taylor et al. (2017).

[2] Black (2008); Black & Frost (2011); DWP & DH (2017); Marmot (2010); Stevenson & Farmer (2017); Taylor et al. (2017); Waddell & Burton (2006).

[3] ONS (2019).

[4] ONS (2021).

[5] Black (2008).

[6] Black (2008).

[7] HM Government (2019).

partnering as a key area for action.[8] The government emphasised its commitment to working collaboratively to strengthen the research infrastructure that supports occupational health.[9]

Many stakeholders commission and conduct research into work and health. The most notable examples include UK Research and Innovation (UKRI) funders.[10] There are also other public institutions, professional bodies and charities such as the Society of Occupational Medicine (SOM)[11] or the Health Foundation (HF),[12] as well as universities that sponsor research in this area. Involvement of multiple funders offers a diversity in research opportunities but carries a risk of duplication of efforts or gaps in evidence. Greater, more strategic coordination of research activities, including current and future priorities for work and health research, could not only help use resources more efficiently, but also identify and address evidence gaps more easily, more systematically and in a more timely manner. The proposals to reform occupational health services outlined by the Government in 2019 invited views on improving the prioritisation, co-ordination and dissemination of work and health research, with an ultimate aim of ensuring research findings are used by all audiences (including employers and employees, occupational health providers, other healthcare professionals, policymakers etc.) to improve service provision.[13]

This study builds on the issues identified in the *Health is Everyone's Business* consultation and helps all stakeholders better understand the existing work and health research funding landscape by responding to the following key questions:

1) What is the level of spend on work and health research in the UK since 2015?
2) What is this spent on, in terms of type of research and topic?
3) What are the main priorities for future work and health research in the UK?

This report consists of the findings of a wide-ranging review of research on health and work funded since 2015 (including studies underway) in the UK. It includes details on the involved research institutions and funders, topics addressed, types and methods of research, and policy relevance.

The report provides the Government and other stakeholders with a comprehensive and robust picture of possible partners and collaborators, and their funding and research activities. This report allows the Government and stakeholders to consider strategic collaboration opportunities and ways of prioritising future research funding. RAND Europe has been commissioned by Department of Health and Social Care (DHSC) and worked with the joint Work and Health Unit (WHU) to conduct the review. Below, we outline our approach, key strengths and limitations of the study.

[8] HM Government (2019).

[9] HM Government (2019).

[10] UKRI (2021a).

[11] SOM (2021).

[12] HF (2021).

[13] HM Government (2019).

1.2. Approach

We define work and health research as any research where the outcome of the study is to help the working age population be healthier and in work. This interpretation is deliberately broad and not restricted to specific methodology or discipline which we consider as the most useful approach from the policymaking perspective.

Our research methodology consisted of two stages:

- Analysis of the funding landscape by identifying and reviewing publicly available databases and information requested from key funders. This involved screening the identified research to remove funding awards not related to work and health, and to classify remaining relevant research based on its funder, host institution, research methodologies and data collection methods used, topics and policy themes addressed. We looked at funding awarded with a start date between 2015 and 2020, giving us a sample of six years of UK public and charitable research funding. We excluded expenditure that related solely to the delivery of work and health interventions where there was no associated research outputs, or where research was funded separately. In total, we identified 115 research awards, representing a range of funders, topics, and research disciplines.
- Contextualisation of research funding through 15 semi-structured interviews with nine work and health researchers and six funders.

More information about the methodology is presented in Annex A. Throughout the report, unless otherwise stated, all of the funding information quoted is based on primary data collected by the study team.

1.3. Key strengths and limitations

We accessed project level information for key funders of research in the UK, rather than reviewed relevant research publications. This approach ensured that we captured all research funded, whether it led to publication or not. Doing so provided a more current picture of ongoing research given the time lag from funding to publication. It relied, however, on the efficacy of the search engines on the database websites and on the thoroughness of records kept by the funders or website administrators.

We prioritised key research funders, including the three largest public research funders (UKRI, National Institute of Health Research [NIHR] and Wellcome), as well as a number of charitable funders.[14] We also included research supported by the What Works Wellbeing Centre (WWW) (where we relied on information available on their website) and the WHU (which supplied us with information about studies they had funded directly). This was a pragmatic choice to capture the majority of ongoing research in the relevant field and to have relatively comprehensive coverage. There are, however, other funders who support research on work and health and they are not captured in this review. Including these would require manual

[14] The full list of funders or databases includes: UKRI's Gateway to Research, NIHR Open Data Portfolio, 360Giving GrantNav, Wellcome grant funding, UK Health Research Analysis, WHU, WWW and World RePORT. The results obtained do not include research funding offered for example by the Colt Foundation (occupational and environmental health) or the Institution of Occupational Safety and Health (IOSH).

trawling of website content, which was not feasible given the timescales and resources envisaged for this study.

We excluded delivery costs from the analysis, even though they often account for a large proportion of the overall funding. The decision to exclude delivery costs was made for two main reasons: (i) because the delivery of an intervention does not produce research outputs; and (ii) because delivery costs related to researched interventions were not always in the public domain.[15] The exclusion of delivery costs makes the different award types more comparable and stops a small number of awards skewing the results of the analysis. Despite excluding these costs, we note that seven of the highest grossing projects (including the Health Led Trials (HLT) funded by the WHU, four studies funded by the NIHR, one study funded by the UKRI and one by the Economic and Social Research Council (ESRC) still distort the analysis (see Figure 2.1).

We carried out interviews with funders and researchers to identify major research on work and health not captured in the databases of key funders and to collate views on the main priorities for future work and health research in the UK. While these interviews helped to mitigate some of the shortcomings of the review, the number of these interviews is limited, and the opinions shared cannot be considered representative of all researchers and funders involved in work and health research.

[15] For example, there is information on both the delivery costs (£39 million) and research costs (£0.6 million) of the Employment Advisers in Improving Access to Psychological Therapies (IAPT). Yet, details of only the research costs (£2.9 million) but not the delivery costs are in the public domain for the Health Led Trials (HLT). Also, NIHR typically reports research costs only in relation to their awards and the NHS costs (effectively delivery costs) are funded separately and excluded from reported award amounts.

2. Findings

2.1. Researchers and funders

In this section we focus on institutions conducting work and health research and their funders. Different types of institutions were awarded funds to carry out research. We categorised **host institutions** as: academic (a university or group of universities), public (e.g. government departments), not-for-profit (foundations, charities) and private (e.g. research consultancies). **Funders** of work and health research were characterised as public, private, or not-for-profit.

Funding to support work and health research takes different forms. It could be awarded as a **project grant** (which we define as discrete funding for a one-off research activity) or as a **programme grant** (which we interpret as funding that is part of a broad research programme). Funding can also be awarded to individual researchers as part of a **scholarship or fellowship** funding (e.g. to complete PhD/postdoctoral studies). Finally, **organisational funding** refers to funding provided to organisations as core funding, funding for operations, or personnel costs.

2.1.1. Over £31 million has been invested in work and health research by not-for-profit and public sectors since 2015

Since 2015, funders have allocated over £31 million to research in work and health. This equates to approximately £5 million per year on average. In terms of funding value, the vast majority of the funding comes from the public sector (e.g. ESRC, NIHR, UKRI, WHU). Not-for-profit funders (e.g. Wellcome, Trust for London, Community Foundation for Surrey, Oxfordshire Community Foundation), however, supported almost one third of studies, yet with significantly smaller funding value (Table 2.1). The review deliberately focuses on key public and charitable funding sources and does not capture any private sector research funding – this information is not readily available in public sources.

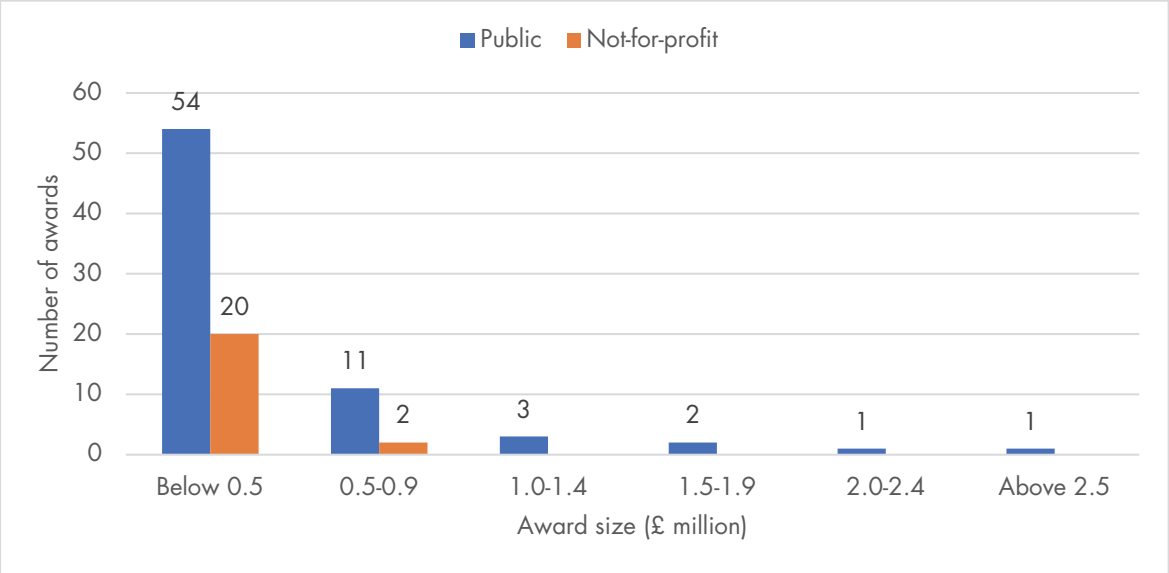
Table 2.1: Types of funders

Funder sector	Funding value	Funding %	Count
Public	£28,883,778	92 %	90
Not-for-profit	£2,675,217	8 %	25
Total	**£31,558,996**	**100 %**	**115**

Note: Funding value (and %) does not include data from the WWW and other individual entries where information on funding value was not available.

The average size of an award amounts to almost £0.3 million for public funders but the awards of the not-for-profit funders are smaller in value (on average £0.1 million). Overall, the vast majority of the funded research values fall under £0.5 million (Figure 2.1).

Figure 2.1: Distribution of funding by value of grants (in million GBP)



Note: Funding value does not include data from the WWW and other individual entries where information on funding value was not available.

The top three highest grossing awards are:

- A £2.9 million study commissioned by the WHU to an evaluation consortium led by the Institute for Employment Studies to evaluate the HLT, which is a large-scale programme of randomised controlled trials (RCTs) to test an employment intervention (Individual Placement and Support [IPS]) for people with health conditions in Sheffield and the West Midlands.[16]
- A £2.4 million research study funded by the NIHR to the University of Nottingham to develop, evaluate and assess implementation of an intervention to enhance return-to-work and improve quality of life and wellbeing in people with at least moderate trauma (Multicentre Research Programme to Enhance Return to Work after Trauma [ROWTATE]).[17]
- A £1.9 million project funded by the NIHR to Norfolk and Suffolk National Health Service (NHS) Foundation Trust and the University of East Anglia to evaluate the Partner in Balance programme, which is an intervention aimed at improving support for carers (Adapting and testing an intervention for carers of people with dementia [CARECOACH]).[18]

[16] IES (2021).

[17] NIHR (2021f).

[18] NIHR (2021d).

2.1.2. Academics conduct the majority of research, followed by not-for-profit and private institutions

Over half of the work and health studies identified (56 % of funding and 62 awards) are carried out within academia (e.g. Cardiff University, University of Sheffield, University of Exeter, University College London, University of East Anglia). Other categories of host institutions include charities or not-for profits (e.g. NatCen, Fabian Society, Learning and Work Institute), industry or private organisations (e.g. ICF, IFF Research, Ipsos MORI) and the public sector (e.g. NHS Foundation Trusts). Despite differences among these categories (Table 2.2 and Figure 2.1) the average project size is comparable across these and amounts to approximately £0.3 million.

We note here that this picture would change if intervention delivery costs were included. The public sector would move to the top of the table bearing the heaviest load of the implementation costs. The current funding in this group is largely driven by one NIHR study of nearly £2 million (EMPOWER: Enabling and Motivating People [with a Personality Disorder] in Occupation, Wellbeing, Education and Responsibility[19]). It also includes two projects commissioned by the WHU (Mental Health and Employment Trailblazers[20] and International Comparison of Occupational Health Systems and Provisions: A Comparative Case Study Review),[21] as well as funding for the operating costs of the WWW. The costs, however, of three studies funded by the WWW were not publicly available and thus they are not included in the analysis.

Table 2.2: Institutions receiving funding for work and health research

Host institution sector	Funding value	Funding %	Count
Academia	£17,526,045	56 %	62
Not-for-profit	£6,940,025	22 %	27
Private	£4,072,933	13 %	16
Public	£2,443,834	8 %	9
No information	£576,159	2 %	1
Total	**£31,558,996**	**100 %**	**115**

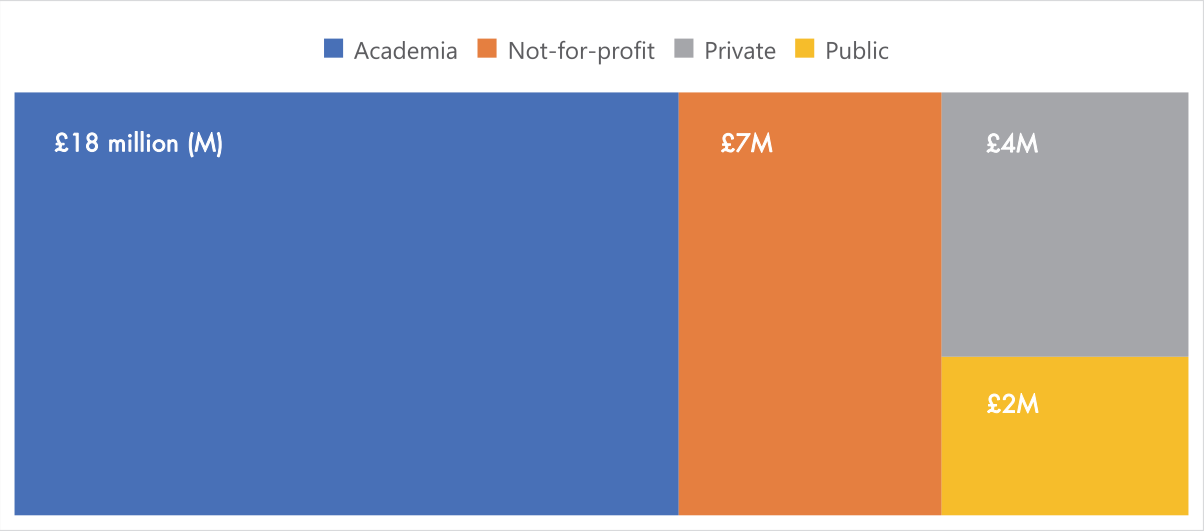
Note: Funding value (and %) does not include data from the WWW and other individual entries where information on funding value was not available.

[19] NIHR (2021d).

[20] HRA (2018).

[21] DWP (2019).

Figure 2.2: Comparison of amount of funding received by host institution



Note: This figure excludes entries where information on funding value was not available.

One of the interviewees commented on the advantages and drawback of academic research on work and health, as cited below.

> 'Another challenge relates to the Research Excellence Framework. You get penalised for doing multidisciplinary research because it's all based on journal output. That puts obstacles in the way because normally the best researchers in a school are the ones that publish papers. Universities [are] obsessed about this because it concerns ranking. You have this institutional inertia which is stopping you from getting things done. It's easier for [other organisations] to get this work done, even though we [academics] are the ones with the library and resources. Also when you put in multidisciplinary proposal, the different [academic] disciplines involved have their biases towards other disciplines. And grants feed into reputation too. It's about confronting institutional challenges as well as academic challenges.'[22]

2.1.3. Less than 1 % of all funding was spent on scholarships or fellowships

Funders use various terms to describe the type of funding they provide. Rather than rely on their terminology, which would not be comparable, we categorised the main types of funding as **project** or **programme grants** (see Section 2.1 for their interpretations).

One example of a project grant is the £0.9 million from NIHR for the University of Leicester to conduct an RCT to test the effectiveness and cost-effectiveness of the intervention for reducing daily sitting time in office workers (SMART Work & Life). An example of a programme grant is the £20,000 provided by the Trust for London to the Fabian Society to carry out a programme of work (including research) to provide options for government and trade unions to improve working conditions and realise existing employment rights for low-earning self-employed workers. Another example is the almost £12,000 provided by the

[22] R-INT-01.

Wates Family Enterprise Trust for Tomorrow's Company to establish a programme of research into how to prevent and reduce mental health issues arising in the workplace. Project grants dominate both in terms of value (accounting for 84 % of funding) and the number of studies (Table 2.3).

Organisational funding, scholarships or fellowships and other types of awards represent marginal proportions of the work and health research awards identified (Table 2.3). An example of organisational funding is the £80,000 support from the Trust for London for the Learning and Work Institute to establish a Better Work Network, which draws together stakeholders (including researchers) involved in initiatives to tackle low pay and the quality of work in London. One example of a fellowship is Alcohol Change UK's funding of nearly £5,000 towards a PhD thesis to investigate the prevalence of high-risk alcohol use in the UK Police Service compared to the UK Armed Forces and its co-occurrence with mental health services. Two studies categorised as 'other' refer to funding provided to the WWW in 2016/2018 (£300,000) and 2018/2019 (£31,000). A third project refers to funding from the Trust for London given to the Aspire Community Works' Better for Us Campaign, which is a campaign for a public procurement process that provides better working conditions by leveraging existing legal clauses that support community enterprises.

Table 2.3: Types of awards granted for research in work and health

Award type	Funding value	Funding %	Count
Project grant	£26,644,700	84 %	90
Programme grant	£4,001,226	13 %	13
Other	£396,000	1 %	3
Organisational funding	£261,517	1 %	5
Scholarship or fellowship	£255,553	1 %	4
Total	**£31,558,996**	**100 %**	**115**

Note: Funding value (and %) does not include data from the WWW and other individual entries where information on funding value was not available.

The lack of or insufficient career opportunities for younger researchers was noted by some interviewees[23] as one of the key challenges in work and health funding. This is well illustrated by the following quote.

> 'I worry for early year researchers who haven't already established these networks, they apply for fellowships, but these are hard to get.'[24]

Very few places in the UK currently offer scholarship or fellowship opportunities related to work and health research (the Centre for Musculoskeletal Health and Work at the University of Southampton was cited as one of the few exceptions) and a couple of researchers were known to have benefitted from such opportunities in this area.[25] Some interviewees noted the NIHR or other funders could provide more funding for research positions, as illustrated below.[26] By comparison, over 40 % of awards (by number, not value) made by the UKRI in 2020 were for studentships or fellowships.[27]

[23] F-INT-01; R-INT-05; R-INT-06.

[24] R-INT-08.

[25] R-INT-06.

[26] R-INT-05; R-INT-06.

[27] Based on Gateway to Research data. See UKRI (2021b).

> 'Funding is limited but it is there. NIHR has changed the landscape because they recognise work as an outcome that needs to be addressed. They've got lots of different work streams and they put out calls for work and health proposals. There are junior posts that can be funded through them and that's made a difference. They do need constant badgering though!'[28]

One interviewee noted a need to offer mentoring for early career researchers and help them connect with the established researchers in this area.[29]

> 'In my institution I was the only one looking at it [work and health research] and it was hard to network (…). In some ways networking can happen organically: I went to a workshop for an NIHR policy call and there were lots of people in a room to network with.'[30]

One interviewee explained that career prospects can also be problematic for staff of funding organisations.[31] This is because a period of at least seven years is needed to identify collaborations, build partnerships and see tangible results in a specific area of research investigation. This time horizon, however, is not always aligned with available funding cycles. Thus, substantial efforts are required to secure further funding, which takes away staff from developing their networks, knowledge dissemination and transfer.

> 'You need people who have careers in this space who know the institutions and networks. You need that length of time [seven to ten years] to get the research out there.'[32]

2.2. Research characteristics

In this section we focus on key features of the funded work and health research. These include academic disciplines employed to conduct the research (2.2.1), research methodology used in the funded research (2.2.2), health topics examined (2.2.3) and outcomes of interest (2.2.4).

2.2.1. Research into work and health encompasses a variety of disciplines

Categorising main disciplines of identified work and health research is prone to a number of limitations. First, it is based on available data which are often incomplete. For example, only some funders or database administrators included information on faculties or departments leading the work – where this information was available we used the discipline specified in the datasets but when it was lacking we added this information based on analysis of the host institution or abstract. Second, relying on the specialism associated with primary investigators (or a short abstract) does not do justice to other disciplines that may be involved through other researchers and collaborators. In a great many cases, studies combined aetiology, sociology,

[28] R-INT-06.

[29] R-INT-05.

[30] R-INT-05.

[31] F-INT-01.

[32] F-INT-01.

epidemiology, social policy, implementation science, economics, or law. Third, relying on the specialism on primary investigators may not be accurate if a study examines the cost-effectiveness of a tested intervention. As such, findings presented below need to be considered with caution as they do not fully reflect the diversity of specialisms involved.

Occupational and environmental medicine is the single most prevalent research specialism among the number of awards (32) and it constitutes 30 % of funding. Economics represents the second highest proportion of funding (26 %) and awards (21). Studies categorised under psychology, social policy and sociology represent similar number of awards (around 15) but vary in the proportions of funding from 20 % to 5 % (Table 2.4). A relatively high value of research categorised as 'Other' is explained by UKRI funding for a study: Understanding the economic, social and health impacts of COVID-19 using lifetime data: evidence from five nationally representative UK cohorts,[33] which is just one example of multidisciplinary research and particularly difficult to assign to any single specialism.

Table 2.4: Research specialism

Research specialism	Funding value	Funding %	Count
Occupational and environmental medicine	£9,315,079	30 %	32
Economics	£8,153,509	26 %	21
Psychology	£6,159,265	20 %	15
Social policy	£3,342,570	11 %	15
Sociology	£1,702,511	5 %	16
Other	£1,117,347	4 %	1
Implementation science	£826,262	3 %	6
Disability studies	£549,404	2 %	2
Human geography	£247,849	1 %	2
Health services	£63,700	0 %	2
Epidemiology	£61,501	0 %	2
No information	£20,000	0 %	1
Total	**£31,558,996**	**100 %**	**115**

Note: Funding value (and %) does not include data from the WWW and other individual entries where information on funding value was not available.

The average value of awards varied across these categories between £400,000 in psychological research through to a more modest £100,000 in sociology and much smaller awards in epidemiological and health service research (£30,000 on average). The average value of awards is associated with the research designs of the studies. These are discussed in section 2.2.2.

Examining the top funded research specialisms and the source of funding (not-for-profit vs public) we find that the public sector is particularly dominant in funding occupational and environmental medicine research but comparatively less so in economic and sociological research (Table 2.5).

[33] UKRI (2021d).

Table 2.5: Research specialism (top five disciplines) by funder's sector

	Funding value		Funding %	
Research specialism	Not-for-profit	Public	Not-for-profit	Public
Occupational and environmental medicine	£47,310	£9,267,769	1 %	99 %
Economics	£1,437,832	£6,715,677	18 %	82 %
Psychology	£625,809	£5,533,456	10 %	90 %
Social policy	£230,000	£3,112,570	7 %	93 %
Sociology	£302,078	£1,400,433	18 %	82 %
Sub-total	**£2,643,029**	**£26,029,904**	**9 %**	**91 %**

Multidisciplinary working is also a key theme that emerged in the interviews with both researchers and funders.[34] Some interviewees felt that continuous efforts were needed to bridge different research specialisms.[35]

> 'The direction of travel has to be multidisciplinary. We're good at measuring mental health outcomes but tremendously bad at understanding how organisations work. (…) That for me is the one big opportunity: to look in a multidisciplinary way to see what happens in organisations. Then you have to look at joining up with the health system. The areas which I think are emerging and useful are around political science and employer relations. We [also] need more integration with economics.'[36]

The impact of the COVID-19 pandemic was also highlighted as an opportunity insofar as revealing the importance of health and wellbeing within the workplace, prompting employers, researchers and policymakers to reconsider how the return to office space should look.[37]

The need to better connect different researchers and funders, and to provide more opportunities for collaboration was also noted[38] and specific challenges in developing multidisciplinary proposals were also outlined (lack of resources, experience, or motivation).[39]

> 'It's very hard to get funding, a lot of [funders] are funding large scale multidisciplinary projects which are hard to put together. It's about having the network put together. (…) There's more groundwork in getting a funding application together. ESRC have stopped doing funding seminars though it's important to have smaller opportunities to work up to applying for a larger grant.'[40]

> 'I don't think you can prescribe who works with whom. But you can create the opportunities there and enabling researchers to understand the horizon. (Speaking

[34] F-INT-01; F-INT-02; F-INT-03; R-INT-01; R-INT-05; R-INT-08.

[35] F-INT-02; F-INT-06; R-INT-05; R-INT-08.

[36] R-INT-01.

[37] R-INT-03; R-INT-09.

[38] F-INT-01; F-INT-03.

[39] F-INT-01; F-INT-08; R-INT-01.

[40] F-INT-08.

> about one vocational rehabilitation organisation that never won a grant the interviewee continued) someone will have to help people to write the grants. They are not as equipped in writing a research proposal and designing the research. Realistically someone needs to make it possible for people who don't have this training to do these things.'[41]

Commenting further on career pathways in work and health research (see Section 2.1.3), one interviewee emphasised the need to enable researchers to move across disciplines.[42]

Some interviewees also made broader comments on collaboration in work and health research. While there are clusters of researchers working on certain issues,[43] the serendipity of many of interactions lack of coordination was noted as well.[44]

> 'There's several groups already doing health and work research such as a group in Scotland, a group in Manchester focusing on risk assessment, then there's (…) [Centre for Musculoskeletal Health and Work in] Southampton. There's a group (…) in London (…) working on mental health.'[45]

> 'It's quite haphazard. I came into contact with [name of a research organisation] quite informally, a mutual friend put me in touch with [name]. It's not as organised and as deliberately planned as you would imagine.'[46]

> 'If we we're all round the table together, we can exchange ideas and communicate regularly, planning the research that the country most needs. But we're all competing for small pots of money and we have to lobby for own separate areas. We need to centralise and get each other talking.'[47]

2.2.2. Most funding (34 %) goes to robust impact designs: RCTs and quasi-experimental studies

Looking at research methodology used in the funded research we categorised it into the following groups:

Systematic review/meta-analysis: these studies use a replicable search strategy to gather exhaustive literature (academic and grey, published/unpublished/work in progress) about a particular topic and meta-analysis uses statistics to combine the results of multiple studies and examine effectiveness of specific interventions. Other types of reviews include **narrative reviews** (such as targeted reviews and other exploratory literature review styles that are not systematic) and **scoping reviews** which aim to understand the extent of available literature and identify gaps.

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[41] R-INT-03.

[42] F-INT-01.

[43] F-INT-02; R-INT-01; R-INT-06.

[44] F-INT-02; R-INT-01.

[45] R-INT-06.

[46] R-INT-01.

[47] F-INT-02.

The most robust research designs include RCTs and quasi-experimental studies. **Clinical trials/RCTs** are an experimental method that involve the random assignment of individuals into a 'treatment' group (that receives a treatment, such as a policy or intervention) and a comparator 'control' group. Any difference in outcomes at the end point can be attributed to the intervention. **Quasi-experimental** studies measure the effect of a treatment (e.g. policy or an intervention) without randomising subjects into control and treatment groups. We categorised studies as **evaluation of an intervention** if they were an evaluation that used designs other than quasi-experimental designs or RCTs (which always imply impact evaluation, and are often combined with process and economic evaluations).

We grouped quantitative studies (excluding evaluations captured in the categories above) into **longitudinal** (also known as a follow-up or cohort study) that observe a particular outcome in a selected population through repeated data collection over a long period of time and **cross-sectional** (also known as prevalence studies) that observe a particular outcome in a selected population by measuring it at one point in time. Finally, we labelled research that used quantitative methods without further specifying the methodology as **quantitative (other)**.

Mixed methods studies use a combination of quantitative and qualitative methods and research that used qualitative methods without further detailing the methodology was categorised as **qualitative**.

Some specific types of research we labelled as **historical** (if used only historical materials, such as archives, historical evidence, or analysis of a historical phenomenon), mapping (if aimed to create an exhaustive list of actors involved in a particular activity), **policy analysis** (if focused on a particular policy but not using or failing to specify if it is a formal evaluation, RCT or quasi-experimental design) and feasibility study (if investigated the possibility of carrying out research or designing an intervention).

We note that studies often use multiple methodologies – for example, an RCT by definition includes quantitative longitudinal methods, but it may also comprise cross-sectional qualitative and qualitative longitudinal research. While we would code this study as an RCT, we would capture additional details about other methods used, if these were available.

Of the 115 studies identified, 95 awards provided detail on research methodologies used (Table 2.6). Almost £11 million of funding goes to evaluating interventions, mainly using RCTs and quasi-experimental designs (which account for 10 % and 2 % of all funding, and ten and three awards respectively). This is due to the high costs of evaluating large-scale trials and interventions, such as the HLT and the EMPOWER study discussed earlier.

Focusing on RCTs only, we also looked at where these fall across different research disciplines discussed in Section 2.2.1 above. While RCTs often combine multiple disciplines, if they explicitly include an economic evaluation we categorised them as (primarily) economic research.[48] The database includes four such studies: the HLT, Group Work (JOBSII) trials (funded by the WHU), Individual Placement and Support for Alcohol and drug dependence (IPS-AD) trial (also funded by the WHU)[49] and Work and Health Programme Evaluation. The subject of the trials was also used to categorise these. For example, a focused on a specific profession would be linked to occupational medicine. There are three such studies in the

[48] We would add other specialisms where these were clear.

[49] Marsden et al. (2020).

database: on slip resistant footwear for healthcare workers (£900,000),[50] on Structured Health Intervention For Truckers (SHIFT) (£900,000)[51] and Stand Up For Health (£300,000).[52]

Three other methodologies that stand out in terms of the number of awards and funding include other evaluations not using RCT or quasi-experimental design (23 % of funding, ten awards), longitudinal (13 % of funding, 14 awards) and cross-sectional studies (10 % of funding and 17 awards) (see

Figure 2.3). The remaining types of research are much smaller looking both at the number of awards and funding value.

Table 2.6: Methodologies used in the research on work and health

Research type	Funding value	Funding %	Count
Clinical trial/RCT	£10,129,727	32 %	10
Evaluation of an intervention	£7,158,584	23 %	10
Longitudinal study	£4,251,524	13 %	14
Cross-sectional study	£3,027,979	10 %	17
Scoping review	£1,942,119	6 %	7
No information	£1,425,464	5 %	20
Policy analysis	£1,045,518	3 %	7
Quasi-experimental	£733,039	2 %	3
Mapping	£596,790	2 %	3
Mixed methods	£576,159	2 %	3
Qualitative	£207,971	1 %	4
Quantitative (other)	£180,707	1 %	1
Historical	£177,631	1 %	3
Other	£65,795	0 %	4
Narrative review	£20,000	0 %	1
Feasibility study	£19,990	0 %	1
Systematic review/Meta-analysis	n.d.	n.d.	7
Total	**£31,558,996**	**100 %**	**115**

Note: Funding value (and %) does not include data from the WWW and other individual entries where information on funding value was not available.

There is a relatively large number of awards (20) where no information on the methodology that was used is available. Most of these awards are recorded in GrantNav and six of them refer to conducting 'research' generally. For example, two projects funded by the National Lottery Community Fund to support people facing multiple barriers into learning and work opportunities. Studies categorised as 'other' include funding a seminar and conference, developing a tool, and conducting a suite of research to better understand barriers to gaining and maintaining employment and effective support strategies, and help companies recruit and retain neurodiverse talent (carried out by the Discover Autism Research and Employment [DARE] initiative, which is a not-for-profit collaboration between autism research charity Autistica and the Centre for Research in Autism and Education at University College London).

[50] NIHR (2021c).

[51] NIHR (2021a).

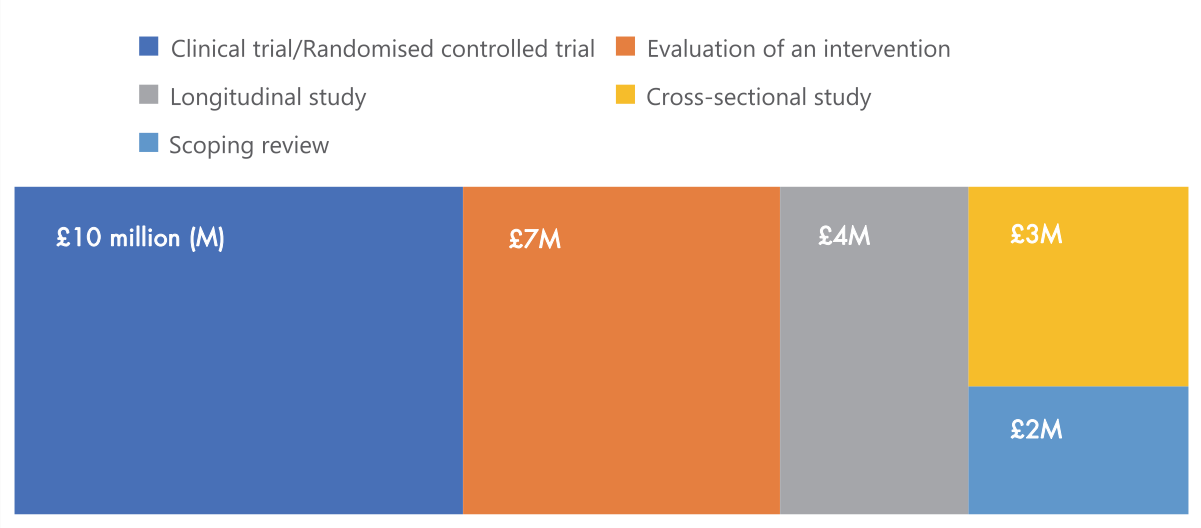
[52] NIHR (2021g).

A few interviewees, however, noted limitations of non-RCT designs and well-established in the literature[53] challenges in conducting robust evaluations in the workplace.[54]

> '[It is] hard to research small business. [It is a] good question about who does the research and how this is being applied in the small business context. Who does the learning for small businesses to use? I do think there's a problem with the quality of research. I was disappointed with how much funding goes into it that the research is still not that great. It tends to be case studies, even when they could be more robust studies which is surprising.'[55]

> 'There's an opportunity there to do more rigorous evaluations of interventions within the workplace. But we also need to take into account the huge diversity of workplaces, i.e. not just office workers but also factories, small businesses and the gig economy. This is the real challenge in terms of how to research this well. We did a study funded by the WHU about how well small business were implementing wellbeing initiatives, because if you're a café with two employees you're not going to have an occupational health department (…) We collected a series of examples about what could be done but the opportunity to rigorously evaluate is limited, so this is a real gap given how many people are employed by small businesses or [are] self-employed.'[56]

Figure 2.3: Top five methodologies used in the research on work and health by funding value



Note: This figure excludes entries where information on funding value was not available and categories below 6 % of funding.

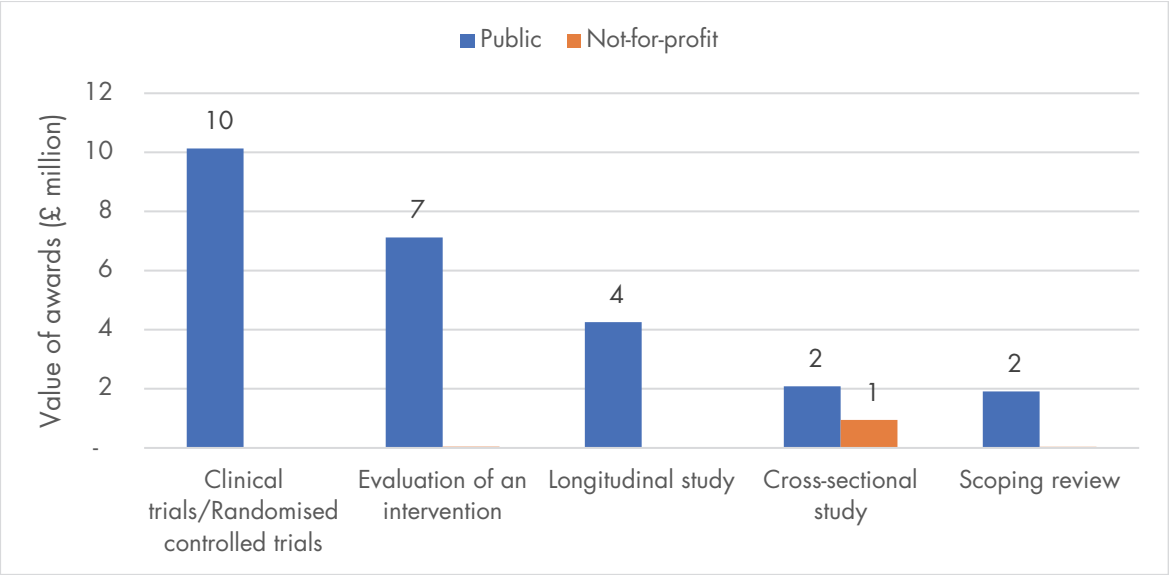
[53] See Brunton et al. (2016); Phillips et al. (2013); Roper (2018); Stewart & Alexander (2006).

[54] F-INT-01; R-INT-09.

[55] F-INT-01.

[56] F-INT-01.

Figure 2.4: Top five methodologies used in the research on work and health by funding value and funder type



Note: This figure excludes entries where information on funding value was not available and categories below 6 % of funding.

Unsurprisingly, the highest costs of research are associated with more expensive designs, such as RCTs and other types of evaluation (£1 million on average). On the other end of the spectrum are designs such as small qualitative studies, historical reviews, narrative and feasibility studies (ranging from £20,000 to £60,000).

We also look at the top five methodologies and the source of funding (Table 2.7). The results show that not-for-profit sector tends to fund relatively more cross-sectional design studies, compared to public funders which dominate sponsorship of often more expensive designs, such as RCTs and longitudinal studies.

Table 2.7: Methodologies (top five) by funder's sector

	Funding value		Funding %	
Research type	Not-for-profit	Public	Not-for-profit	Public
Clinical trial/RCT	£0	£10,129,727	0 %	100 %
Evaluation of an intervention	£38,798	£7,119,786	1 %	99 %
Longitudinal study	£0	£4,251,524	0 %	100 %
Cross-sectional study	£944,760	£2,083,219	31 %	69 %
Scoping review	£33,492	£1,908,627	2 %	98 %
Sub-total	**£1,017,050**	**£25,492,882**	**4 %**	**96 %**

Related to the methodologies applied in work and health research is the question on the sources of data used. We looked at whether studies relied on primary data collection or on existing data collection vehicles, such as Understanding Society, Labour Force Survey, Adult Psychiatric Morbidity Survey or Workplace Employment Relation Survey to name a few. The largest proportion of funding (70 %) and the number of awards (37) is linked with research involving primary data collection (Table 2.8). The 'other' category (16 awards) involves a range of sources, such as census data, administrative data held by specific government

departments, staff surveys or various cohort studies. There is also a relatively large number of awards (35) where there is no information on data sources. Most of these awards are recorded in GrantNav.

Table 2.8: Data collection vehicles used in the research on work and health

Data collection vehicle	Funding value	Funding %	Count
Primary data collection	£22,210,483	70 %	37
Other	£3,909,504	12 %	16
No information	£2,639,853	8 %	35
Not applicable	£1,871,677	6 %	14
Understanding Society	£483,077	2 %	6
Historical archives	£252,902	1 %	4
Labour Force Survey	£180,000	1 %	1
Adult Psychiatric Morbidity Survey	£11,500	0 %	1
Workplace Employment Relation Survey	n.d.	n.d.	1
Total	**£31,558,996**	**100 %**	**115**

Note: Funding value (and %) does not include data from the WWW and other individual entries where information on funding value was not available.

While the strengths of the work and health research in the UK noted by some interviewees included having large and robust datasets (such as those in Table 2.8) and administrative data, difficulties accessing some existing databases in order to link data were also cited as a common challenge.[57] Two specific difficulties were noted, namely: time constraints and efforts required. The first, noted by two interviewees,[58] related to the length of time needed to receive access to the requested data for data linking purposes, with one interviewee citing an eight-month delay, and in one of RAND Europe's studies the process took a few years.[59] As a result, in some cases there may be a risk that it is not feasible for researchers to obtain data in sufficient to conduct the relevant analysis.

The process of obtaining access to data for linking purposes can also present difficulties. This is especially the case in multidisciplinary studies, where relevant datasets are held by different Government departments. For example, the HLT required access to the following datasets: NHS Digital data (on Hospital Episodes Statistics and Mental Health Services), Department for Work and Pensions (DWP) data (on benefit), Her Majesty's Revenue and Customs (HMRC) data (on income), as well as the primary data collated during research. Discussions on the processes required the involvement of the evaluation consortium members, WHU, NHS Digital, HMRC and the Office for National Statistics (ONS), and took a few years. One of the interviewees said that if addressed, this single issue could help transform the work and health research (and indeed any multidisciplinary research):

> 'The question is how we can get data from different government departments to better link these data. One of the things to make better work and health research is to consider how to use datasets so that researchers do not have to wait months to access these data, especially when research grants are time specific. The sad

[57] F-INT-06; R-INT-02; R-INT-03; R-INT-09.

[58] R-INT-02; R-INT-03.

[59] The study involved a large-scale linked data set combining information from four separate healthcare sources and two separate criminal justice sources. See RAND (2021).

> thing is that it's nobody's fault but there are a lot of bureaucratic hurdles in the way.'[60]

In addition, one interviewee mentioned an issue of small samples when conducting research focused on specific population and using some of existing data collection vehicles.

> 'The UK compared to other countries has good longitudinal data. But looking at health and work, you have to get into specific populations [such as people with] disabilities and specific conditions), so then the populations within Understanding Survey, etc., become very small. So [it] would be useful to have longitudinal studies on people with those particular health conditions.'[61]

2.2.3. Mental health with £15 million funding tops the health topics examined in work and health research

We categorised funding based on the main health concern addressed by the research, as well as the secondary health concern. For example, research may look at the relationship between **long-term physical disability** and **mental health**: both would be classified as health concerns in this research. **Occupational health** relates to health factors specific to working conditions (e.g. ergonomic concerns, sedentary work). There are also broad health concerns not related to specific conditions which we categorised as **general health and wellbeing**. **Lifestyle areas** capture research on physical activity, nutrition, sleep, alcohol consumption, smoking, etc.

Based on our analysis, we find that most of the funding (£15 million, 49 %) and awards (42) goes to research related to mental health, such as depression, anxiety, work-related stress (Table 2.9). Looking at studies which examined mental health as a secondary topic, we find about half (60 of 115) of the studies engaging with this subject to some extent. This major topic is followed by four other categories: general long-term physical disability, general health and wellbeing, lifestyle areas and occupational health – each accounting for between 11 % and 7 % of funding. The 'other' category includes studies focusing on COVID-19, ageing, physical or mental trauma, health services and medical certification. Many awards (found mainly in GrantNav) provided no information on health topics.

Table 2.9: Health topics covered in the research on work and health

Main health topic	Funding value	Funding %	Count (secondary)
Mental health	£15,371,048	49 %	42 (18)
Long-term physical disability	£3,367,951	11 %	15 (7)
General health & wellbeing	£2,926,460	9 %	20 (6)
Other	£2,864,589	9 %	6 (1)
Lifestyle areas	£2,610,968	8 %	6 (4)
Occupational health	£2,149,331	7 %	10 (1)
No information	£913,726	3 %	10
Sexual health	£590,465	2 %	1 (1)
Progressive illness not included elsewhere	£346,185	1 %	2

[60] R-INT-03.

[61] R-INT-09.

Main health topic	Funding value	Funding %	Count (secondary)
Chest or breathing problems, asthma, bronchitis	£335,273	1 %	2 (2)
Violence and abuse	£83,000	0 %	1
Total	**£31,558,996**	**100 %**	**115 (40)**

Note: Funding value (and %) does not include data from the WWW and other individual entries where information on funding value was not available.

The average size of awards varies across these categories with over £400,000 in lifestyles areas to £150,000 in general health and wellbeing.

When we consider main health topics and the source of funding, we see that not-for-profit funders have a more substantial share in research on mental health, compared to other topics (Table 2.10).

Table 2.10: Main health topics (top six) by funder's sector

Main health topic	Funding value		Funding %	
	Not-for-profit	Public	Not-for-profit	Public
Mental health	£1,859,158	£13,511,889	12 %	88 %
Long-term physical disability	£114,530	£3,253,421	3 %	97 %
General health & wellbeing	£176,650	£2,749,810	6 %	94 %
Lifestyle areas	£4,800	£2,606,168	0 %	100 %
Occupational health	£180,000	£1,969,331	8 %	92 %
Sub-total	**£2,155,138**	**£22,121,288**	**9 %**	**91 %**

When commenting on priorities in work and health research in the next five years, a broad range of issues were raised in the interviews. Among these, a common response concerned the work and health implications of the COVID-19 pandemic.[62] Some interviewees discussed the impact in terms of mental and physical health (including the long COVID), the burgeoning interest in remote and flexible working, as well COVID's disproportionate effect on older and disabled workers in the workplace. One interviewed funder, however, emphasised that mental health has already received more investment in comparison, for example, with occupational health.[63]

The role of occupational health practitioners in future work and health research was also prominent.[64] For example, a point was made about vocational rehabilitation and how to energise occupational health practitioners to lead in this area.[65] Another suggestion related the need to better organise occupational health resources, particularly among small- and medium-sized enterprises.[66] Yet another interviewee stated that occupational health services had to be evaluated to understand which models are effective in different industries.[67]

[62] F-INT-03; F-INT-04; R-INT-03; R-INT-08; R-INT-09.

[63] F-INT-01.

[64] F-INT-02; R-INT-03; R-INT-06.

[65] R-INT-03.

[66] F-INT-02.

[67] R-INT-06.

Some interviewees also pointed out that implementation research that translates into practice was needed.[68] Others mentioned areas such as leadership and management interventions in the workplace,[69] fitness for work,[70] effectiveness of mental health interventions[71] and the relationship between long-term care and work.[72]

A few interviewees[73] also noted the need for a wholistic approach to designing work and health interventions at the workplace, as illustrated by the quotes below.

> 'The priority would be [on] less research-intensive descriptions (of interventions) and [on] institutions being more proactive about giving people information about mental health at work and become self-optimising. The institutions are oriented towards mental health, (…) smoking, but what is needed is an integrated approach about designing work and health interventions.'[74]

> 'A lot of what organisations think they should do is produce a range of stress management courses to help the individual but actually there's an interplay between work and wellbeing. So we need to think about how work is designed and how this can impact individuals, is management behaviour having an impact on employee wellbeing.'[75]

2.2.4. Outcomes of interest focus more on health, but many combine metrics related to work as well as health

We also categorised studies by the types of outcomes they captured. Due to the fact that we are looking at research that exists at the intersection of work and health, we categorised these by those outcomes that are more health-focused and more work-related outcomes. To support our analysis, we categorised research on a spectrum of work-only to health-only research to demarcate if the research related solely to work outcomes, mostly to work outcome, a mix of work and health outcomes, mostly health outcomes, or solely health outcomes (Figure 2.5).

Figure 2.5: Spectrum of outcomes of interest in work and health research

[68] F-INT-01; R-INT-04.
[69] R-INT-03; R-INT-04.
[70] R-INT-02.
[71] R-INT-03.
[72] R-INT-09.
[73] F-INT-01; R-INT-07; R-INT-08.
[74] R-INT-07.
[75] R-INT-08.

Examples of health-related outcomes include:

- Improving population health and preventing ill-health through workplace interventions (improved mental health / wellbeing / social functioning / musculoskeletal conditions).
- Reduction in healthcare utilisation.

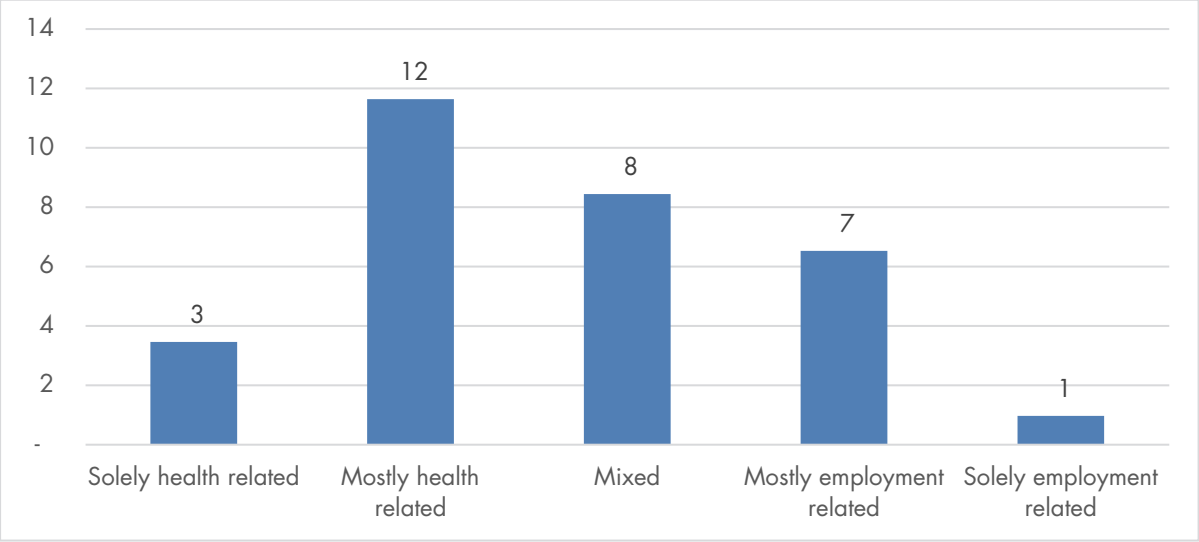
Examples of employment-related outcomes include:

- Preventing health-related job loss / retaining people with health conditions and disabled people in work (return to work, improved work ability).
- Reduced sickness absence or presenteeism.
- Addressing inequalities for people with health conditions and disabled people in employment (job acquisition, tenure, intensity).

Examining the data, we find that marginally more funding focuses solely or mostly on health related outcomes (with 43 awards accounting for £15 million (48 %) of funding), compared with 38 awards worth £8 million of funding for research focused solely or mostly on employment related outcomes (Figure 2.6).

The funding awards are also marginally larger on average when focused mainly on health (well over £300,000 on average) when compared to those targeting employment (£200,000 or less on average).

Figure 2.6: Main outcomes of interest in the research on work and health (in million GBP)



Note: Funding value does not include data from the WWW and other individual entries where information on funding value was not available.

2.3. Policy application

As well as exploring characteristics of the funded work from a research perspective, we also have explored the extent to which the research supported addresses specific policy themes and areas of interest to understand where there may be gaps or concentrations of research effort in this respect. We look at this in

two ways. Firstly, we have mapped research conducted against a set of main policy themes, which correspond to the policy topics and issues addresses in the research. Secondly, we analysed the policy relevance of the research conducted, considering how the insights offered by the research could inform policy, regardless of the specific topic of the research. The findings in each of these areas are set out below.

2.3.1. Research supported addressed a range of themes, but funding is particularly focused on understanding the impact and relative effectiveness of interventions

We analysed the policy themes covered by the research awards identified, categorising these into five groups as follows:

Understanding the impact and relative effectiveness of one or more interventions or policies in relation to work and health: This covers studies which test out different interventions to support improvements in relation to work and health to see how effective they are and what difference they can make.

Health or employment in relation to specific occupation groups: These studies do not test any specific intervention, but rather look at issues relating to work and health for specific groups based on the particular challenges and needs of those roles – for example lorry drivers or secondary school teachers.

Understanding population needs in relation to work and health among working age people: This group of studies focused on cross-cutting issues, challenges and needs in terms of work and health beyond specific occupational settings or groups.

Supporting participation in good work for people experiencing ill health: These studies focus on the challenges in work participation for those who are experiencing ill health, whether mental or physical, and what options might be available to better support these individuals into and at work.

New ways of approaching health and work interventions, policies or service design and delivery: These studies provide new possible ways of addressing health, wellbeing and work including potential new interventions or policies, or ways in which services could be provided or designed differently.

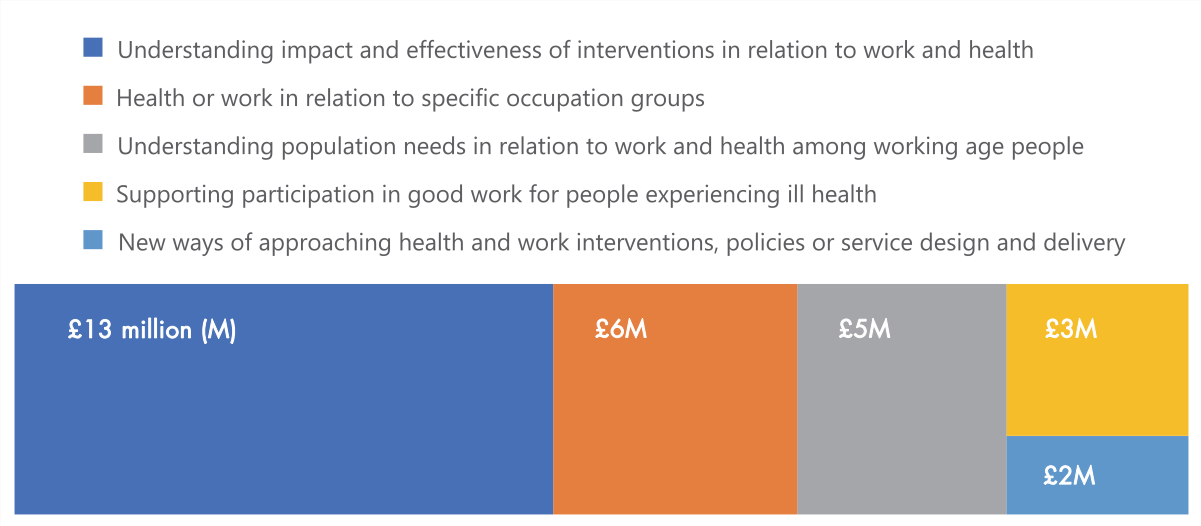
Based on our analysis, we find that most of the funding (42 %) is focused on the first category of awards, testing interventions or policies to understand their effectiveness. There was an even higher number of awards in relation to the third category, looking at population level needs (34 awards, compared to 30 on testing interventions). Yet, these had a lower average award size, comprising only around 16 % of funding. Both the second and fourth categories, looking at specific occupation groups and supporting participation for those experiencing ill health, received a moderate number of awards (19 and 13 respectively) and a relatively low proportion of funding (19 % and 9 % respectively). New ways of approaching health and work received the lowest number of awards (nine) and only 5 % of funding. A further seven awards (6 % of funding) covered other policy themes. Examples here include studies looking at improving the understanding of employers and their actions and understanding the impact of COVID-19 on health, work and social life. Finally, three awards did not provide information to allow their policy theme to be classified. These data are summarised in Table 2.11 and Figure 2.7.

Table 2.11: Main policy themes covered in the research on work and health

Policy themes	Funding value	Funding %	Count
Understanding impact and effectiveness of interventions in relation to work and health	£13,363,073	42 %	30
Health or work in relation to specific occupation groups	£6,052,886	19 %	19
Understanding population needs in relation to work and health among working age people	£5,190,932	16 %	34
Supporting participation in good work for people experiencing ill health	£2,975,819	9 %	13
Other	£1,929,236	6 %	7
New ways of approaching health and work interventions, policies or service design and delivery	£1,536,050	5 %	9
No information	£511,000	2 %	3
Total	**£31,558,996**	**100 %**	**115**

Note: Funding value (and %) does not include data from the WWW and other individual entries where information on funding value was not available.

Figure 2.7: Main policy themes covered in the research on work and health by funding value

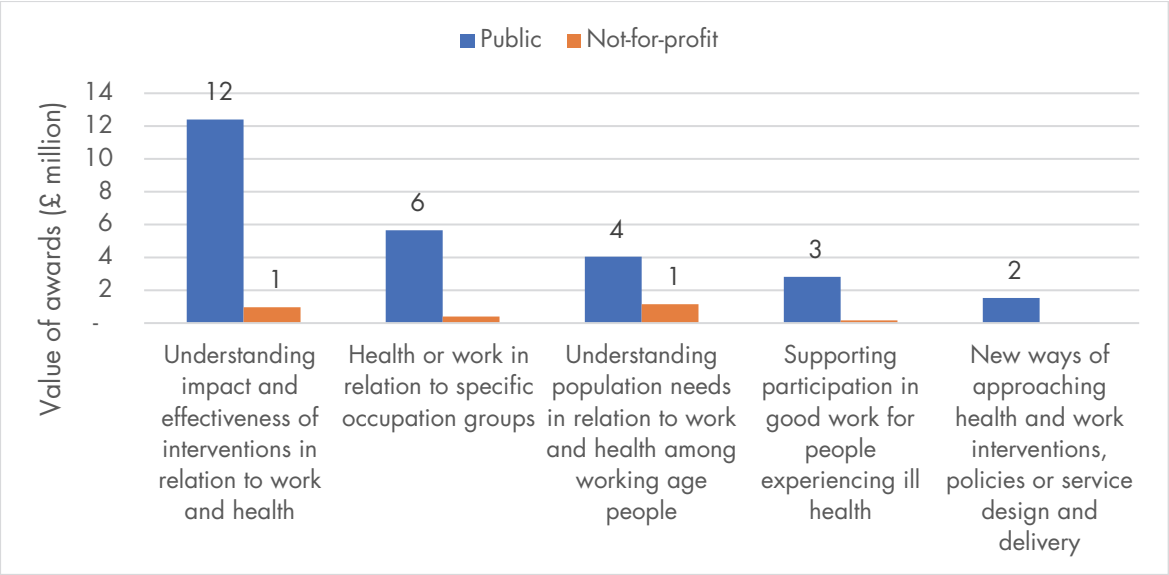


Note: This figure excludes entries where information was not available on funding value or categorised as 'other'.

The relatively small share of research funding to explore new ways of approaching health and work is particularly interesting to note. While the interviewees were not asked to comment on this specific finding, some of them spontaneously mentioned the need for more research into designing workplace interventions.[76] This was noted in Section 2.2.3 above.

[76] F-INT-01; R-INT-07; R-INT-08.

Figure 2.8: Main policy themes covered in the research on work and health by funding value and by funding source



Note: This figure excludes entries where information was not available on funding value or categorised as 'other'.

There are some variations in the average size of awards in these categories: from £450,000 in research on understanding impact of interventions to £150,000 in population needs studies.

Looking at the top three categories we see that not-for-profit funders support a relatively large proportion of research on population needs in relation to work and health among working age people (Table 2.12).

Table 2.12: Policy themes (top three) by funder's sector

	Funding value		Funding %	
Row Labels	Not-for-profit	Public	Not-for-profit	Public
Understanding impact and effectiveness of interventions in relation to work and health	£960,664	£12,402,409	7 %	93 %
Health or work in relation to specific occupation groups	£396,563	£5,656,323	7 %	93 %
Understanding population needs in relation to work and health among working age people	£1,148,755	£4,042,177	22 %	78 %
Sub-total	**£2,505,982**	**£22,100,909**	**10 %**	**90 %**

2.3.2. The research currently supported is relevant to policy in different ways, from the selection, design and evaluation of interventions to problem definition and better measurement

We analysed the ways in which different research awards may be relevant to inform policy. Based on our review of the awards in the sample and the abstracts provided we identified four different ways that the awards could inform policy:

- By informing the selection, design and evaluation of interventions, policies or measures

- By informing problem definition
- By improving concepts and measurement approaches used in policy
- By enabling real-world implementation.

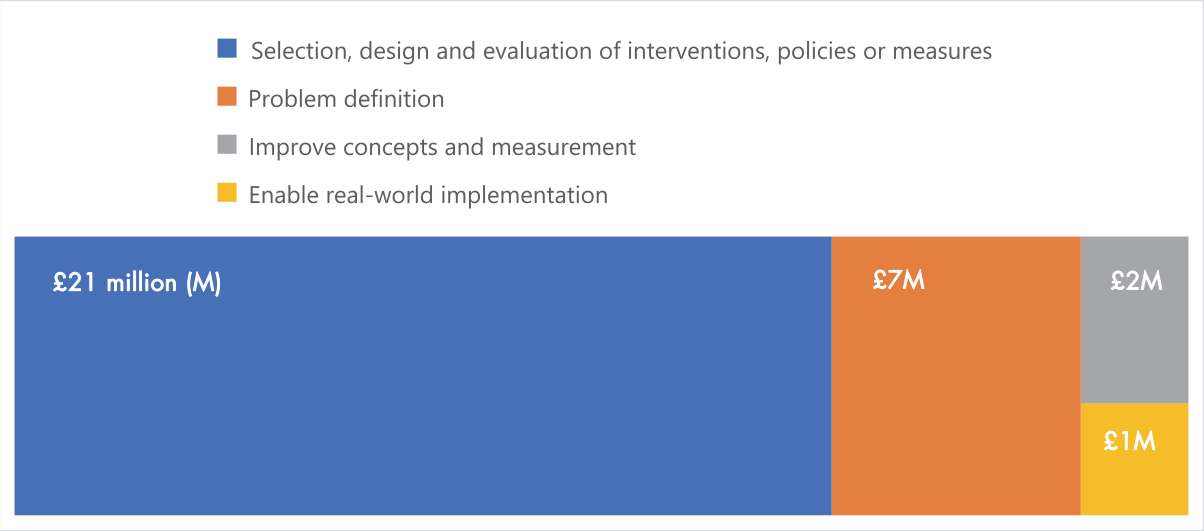
We categorised each of the awards against these four categories to assess the different ways the research conducted could inform policy, based on the information provided in the abstract (where available). We found that the majority of the funding fell into one of two categories, but these differed significantly by the size of awards within them. One area which received a substantial amount of the funding was awards to **inform the selection, design and evaluation of interventions, policies or measures**. These awards accounted for 68 % of funding, and a total of 50 awards and include RCTs, systematic reviews and meta-analysis and some other study designs. This may, in part, correspond to the focus of resources we see in the previous section on studies which assess the effectiveness of different policies or interventions. A further 49 awards – though comprising only 21 % of funding – consisted of work that could inform **problem definition**, helping policymakers to understand the issues to be addressed. A further seven awards (5 % of funding) could inform policy by **improving concepts and measurement**, allowing a better understanding of the situation or challenges faced. After excluding delivery costs (see Section 1) only a small proportion of funding (4 % accounting for six awards) was associated with awards to inform policy by **enabling real-world implementation** – for example, through identifying enablers or constraints to delivery. A further three awards do not provide any information on their policy relevance. We note, however, that this does not necessarily denote no policy relevance (in fact no assessment of the extent to which the studies were policy relevant was undertaken). Rather, this information is not expressed clearly in the literature available for our analysis. Data are set out in full in Table 2.13 and Figure 2.9.

Table 2.13: Main relevance to policy of the research on work and health

Policy relevance	Funding value	Funding %	Count
Selection, design and evaluation of interventions, policies or measures	£21,611,845	68 %	50
Problem definition	£6,588,022	21 %	49
Improve concepts and measurement	£1,704,287	5 %	7
Enable real-world implementation	£1,143,842	4 %	6
No information	£511,000	2 %	3
Total	**£31,558,996**	**100 %**	**115**

Note: Funding value (and %) does not include data from the WWW and other individual entries where information on funding value was not available.

Figure 2.9: Main relevance to policy of the research on work and health by funding value



Note: This figure excludes entries where information on funding value was not available.

The average size of awards in these categories ranges from over £400,000 in research on selecting, designing and evaluating interventions to over £100,000 in problem definition research.

Examining the source of funding for the top two groups (i.e. selection, design and evaluation of interventions, policies or measures and problem definition) we find a large share of not-for-profit funding for research in the second category (Table 2.14).

Table 2.14: Policy relevance (top two categories) by funder's sector

	Funding value		Funding %	
Row Labels	Not-for-profit	Public	Not-for-profit	Public
Selection, design and evaluation of interventions, policies or measures	£1,110,314	£20,501,530	5 %	95 %
Problem definition	£1,362,318	£5,225,704	21 %	79 %
Sub-total	**£2,472,632**	**£25,727,235**	**9 %**	**91 %**

Some additional insights on the policy (and practical) relevance of work and health research were also shared by the interviewees. A few of them commented on collaboration with policymakers which they found difficult to achieve (but helps improve the relevance of the research).[77]

> 'It's haphazard (…). People rotate around government departments so you sometimes don't have the social capital where you need it. I get the impression that policymakers see academics as [replaceable]. Unless there's continuity of relationships then you tend to be seen in this way.'[78]

[77] F-INT-06; R-INT-01; R-INT-03; R-INT-04; R-INT-08.

[78] R-INT-01.

> 'We as academics haven't been very good at getting evidence across to policy makers. There are loads of reasons for this. There's no knowledge legacy and everyone has to start all over again.'[79]

> 'I've struggled with policymakers, we try to do this through comms, blogs, twitter. The ESCR have been funding the festival of social science every year so there are different mechanisms. The real trick is getting policymakers on board for funding applications. They can help co-design the research with you too which is really valuable.'[80]

> 'You need the ear of senior civil servants because they are the people who will get the thing done. If you haven't got a good relationship with the civil servants it can be hard to get your ideas through. Usually they're delighted to be engaged and they usually know the way through to get to the right politician.'[81]

Another point was made about engaging business organisations. Specifically, challenges in doing research in firms was considered problematic in terms of access to organisations (to establish trust and collaboration between researchers and employers) and tensions between final results expected by companies (practical implications) and by journals (academic papers).[82]

> 'For work and health [research] you need to bring people together. This convening function is very important. If you're looking at areas were education meets employers, it's difficult to bring these people together. Our initiative this year is to bring in some private sector into our work.'[83]

[79] R-INT-04.

[80] R-INT-08.

[81] R-INT-03.

[82] F-INT-01; R-INT-08.

[83] F-INT-06.

3. Summary conclusions and final reflections

This report forms the first attempt to map the existing work and health research funding landscape in the UK. While restricted to reviewing only several databases of funded research, it provides an emerging picture of the key characteristics of work and health research: main type of funders and host institutions, types and size of awards, disciplines represented, methodologies applied, topics covered, outcomes of interest and possible policy applications. Stakeholder interviews help to contextualise the findings and outline views and opinions on the opportunities and challenges involved from a limited number of work and health researchers and funders.

This study presents findings from the funding review and the interviews to respond to the following key questions:

1) What is the level of spend on work and health research in the UK since 2015?
2) What is this spent on, in terms of type of research and topic?
3) What are the main priorities for future work and health research in the UK?

Our research shows that over £31 million has been invested in work and health research since 2015. The bulk of this funding comes from public institutions, including government departments. Most of work and health research funding (approximately £11 million, 34 %) supports robust impact designs, such as RCTs and quasi-experimental studies. Further £7 million (23 % of the funding) goes to other evaluation designs.

This review points to mental health research as the main topic of the current work and health funding: this alone accounts for over £15 million (49 %). The other topics that receive relatively generous funding include long-term disability, general health and wellbeing, lifestyle areas and occupational health. This raises questions around which areas of research are not being currently funded, that should be in the future.

The interview findings indicate some priorities for future work and health research to address: implications of COVID-19 for work and health, the role of occupational health, implementation research, leadership and management interventions in the workplace, fitness for work, effectiveness of mental health interventions, relationship of long-term care and work. These findings, however, draw on a limited number of qualitative interviews and it is essential to base decisions about research investment on the best available evidence, particularly when funding comes from a limited public purse. Clear,

systematic processes for priority-setting could help ensure that funded research has potential for impact and meets needs, and that resources are used fairly and efficiently.

Overall, a few aspects call for some further reflections:

Our review was intentionally limited to databases with access to information about the funded research. We consider our approach to be pragmatic in that it captures the majority of ongoing research in the relevant fields. The three largest public research funders – UKRI, NIHR and Wellcome offer relatively comprehensive coverage. To this we added good coverage of charitable funders through 360Giving GrantNav and the UK Health Research Analysis 2018. We also included some funders without public databases (e.g. WWW, WHU), where information about the research (including its costs) was not available (as with WWW studies). There are, however, important other smaller funders that support research on work and health. Including both these funders and those from private sector could change the presented picture. This is possible, but would likely be more time and resource intensive. Future attempts to map the work and health research landscape should take this into account when planning the compilation of information from a wider range of funders.

Our data show that delivery costs are multiple times higher when compared to costs of research. This only emphasises the importance of research: if millions of pounds are spent on implementing interventions, policymakers truly need to know if those interventions work, for whom they work, how and why they work (or not). This simply calls for more work and health research funding in future and emphasises the value of the current approach that tests (or pilots) interventions before deciding on their future rollout.

More funding does not automatically translate into more and better research: it does depend on the capabilities and capacity of work and health researchers, and indeed researchers coming to this topic from a range of different disciplines. The review and interview findings point to limited funding being available for career progression. The need to develop career paths, support (young) researchers, encourage them to cross disciplines and explore the complex relationship between work and health calls for urgent attention. Policymakers, funders and researchers need to consider whose responsibility this should be and how it could be addressed.

Drawing on the interview findings only, there also seems to be a need to improve the collaboration between the world of research, policymaking and practice. While these will always be driven by somewhat different interests, bringing researchers, policymakers and employers to work together on designing and testing new interventions in the workplace would be beneficial in making the work and health research more relevant to the policy and practice.

Finally, the work and health research landscape delivered through this project can be used to inform priority areas for future research. Assessing research priorities, however, can be challenging given the need to balance multiple factors (societal needs, research capacity, return on investment). In order to robustly answer the question about future priorities for work and health research funding, a proper systematic process involving broad consultations with a wide range of stakeholders (including policymakers, researchers, employer and trade union representatives) should be carried out.

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Annex A. Methodology

This annex presents in detail the methodology used for reviewing the funding landscape for research on work and health.

A.1. Funding analysis

The aim was to map the UK funding activity in work and health research since 2015 by using publicly available or requested databases from funders. This task comprised of the following steps:

1. Data collection and screening
2. Classification of funded projects
3. Data analysis and mapping of health and work research.

Further details about each of these steps can be found below.

A.1.1. Data collection

We began by identifying key public databases that contained information on research funding on health and work and also by requesting information from the WHU about projects and programmes they funded. The databases used were agreed to in consultation with the WHU and included major databases that agglomerate UK funding, such as the funding and awards databases of the UKRI, NIHR, 360Giving GrantNav, as well as databases received from prominent funders in the field, such as Wellcome and the WHU. Brief descriptions about each database used in this study are as follows.

The UKRI's Gateway to Research Portal is a website that agglomerates data about publicly funded research from the Arts and Humanities Research Council, Biotechnology and Biological Sciences Research Council, ESRC, Engineering and Physical Sciences Research, Medical Research Council, Natural Environment Research Council, Science and Technology Facilities Council, Innovate UK, and the National Centre for the Replacement Refinement and Reduction of Animals in Research.[84] The NIHR Funding Awards website provides information on activities supported by the NIHR including but not limited to research grants.[85] The 360Giving GrantNav website contains data about grants provided for activities (including but not limited to research) from 172 organisations on the 360Giving Registry.[86] These organisations include a

[84] UKRI (2021c).

[85] NIHR (2021e).

[86] 360Giving (2021).

wide variety of funders including national funders, charities, and community trusts. The UK Health Research Analysis (HRA) 2018 public dataset is the public version of the dataset that was used for the UK Health Research Analysis 2018 Report and contains details on research funding provided by 146 organisations.[87] The World RePORT database maps biomedical research investments and partnerships from large funding organisations across the world. The website is hosted by the US National Institute of Health and is sponsored by a variety of parties including the UK's Medical Research Council and Wellcome.[88] This study also used the searchable website of the WWW to find work and health research funded by them. The study also uses two databases about grant funding provided by Wellcome: one database on COVID19-related projects and another on awards more generally from 2005 to 2021.[89] Finally, this study also uses a database of research and evaluation funding provided directly from the WHU.

Each database retrieved had a different structure, with different categories of information and different levels of searchability. The UKRI Gateway to Research and 360Giving GrantNav databases were searchable using search strings. For these databases, we trialled and optimised search strings and exported the results. We began trialling search strings based on compilations of keywords related to the themes of work and health. Certain terms created duplicate results or very similar results and were thus omitted from the final optimised search strings. Trial search strings and the optimised search strings are presented below (Table A1). For the World RePORT database, individual search terms had to be applied. Search terms were applied individually and databases exported. Other databases came as an unfiltered spreadsheet, such as that received from Wellcome and WHU. For these databases, we applied manual filters based on the available column headings (such as programme type or topic area) or searching internally with key search terms. The NIHR Open Data Portfolio and UK Health Research Analysis databases were downloaded after being filtered for research funding from 2015 onwards only. These databases were then further filtered manually by selecting and limiting based on relevant column headings, such as the research type. All databases were filtered for projects with start dates from 2015 onwards and for research awarded for projects involving the UK. Table A2 provides in full detail the methods used for each database. After applying filters to the searches and removing duplicate results, we had a total of 2,814 results from the search.

Table A1. Creating search strings

Theme	Keywords	Optimised search strings
Work & employment	employment, work, labour, labor, occupation, profession, sector, career, job, livelihood, retention, absenteeism, presenteeism, productivity, income, earnings	employ* OR worker OR workplace OR job OR earnings OR absenteeism OR productivity OR profession* OR income OR occupation* OR labo*r OR career OR retention
Health	health, wellbeing, medical, medicine, wellness, disorder, injury, psychology, psychological, pregnancy, pregnant, disease, clinical, clinician, musculoskeletal disorder,	health OR wellbeing OR medic* OR wellness OR disorder OR injury OR psych* OR pregnan* OR disease OR clinic* OR musculoskelet* OR rehabilitation OR diabetes OR

[87] HRCS (2020).

[88] World RePORT (2021).

[89] Wellcome (2021).

Theme	Keywords	Optimised search strings
	rehabilitation, diabetes, pressure, stress, hypertension, anxiety, respiratory disease, cardiac disease, chronic illness, age	hypertension OR respiratory OR cardiac OR chronic OR age

A.1.2. Data screening

The results were then screened by the research team in incremental steps of detail. Table A3 below presents all inclusion and exclusion criteria used in the screening, which was created in consultation with the WHU. The screening process was as follows:

- **Initial screening.** The results were first screened by title to ensure we only included research funded at the intersection of work and health (and not one or the other). Each researcher was allocated a dataset and went through the studies and screened the titles (and checked abstracts, if necessary) against the criteria.
- **Cross-checking.** This screening was quality assured by having a second researcher cross-check the results and excluded results to ensure that only relevant results were kept in and nothing was omitted unnecessarily. At least 20 of the excluded titles were randomly checked by another researcher and a few titles deemed as potentially relevant have been added back. Another random check was performed by the third researcher on the excluded titles.
- **Screening abstracts.** The results screened by titles were then collated into a master database. Researchers then screened these results based on their abstracts, applying the inclusion and exclusion criteria in Table A3.

Through this data screening process, our initial list of 2,814 results was filtered down to 215 records to be included in this review.

Table A2. Results of searching databases of funding for research on work and health.

Database / Funder	Filters applied on public database	Search terms used	No. of records (no filters)	No. of records (with filters)	No. of records (duplicates removed)
UKRI's Gateway to Research	**Funders:** ESRC and AHRC only **Years:** 2015 onwards **Type:** Research Grant	Search string used: (health OR wellbeing OR medic* OR wellness OR disorder OR injury OR psych* OR pregnan* OR disease OR clinic* OR musculoskelet* OR rehabilitation OR diabetes OR hypertension OR respiratory OR cardiac OR chronic OR age) AND (employ* OR work* OR labour OR income)	19,538	676	427
NIHR Open Data Portfolio	**Programme headings:** 'Policy Research Programme', 'Programme Grants for Applied Research', 'Public Health research'. **Type:** Research **Years:** 2015 onwards	N/A	1,806	341	339
360Giving Grant Nav	**Funders:** UK funders (excluding Wellcome Trust) that relate to research **Years:** 2015 onwards	Search string used: research AND (employ* OR worker OR workplace OR job OR earnings OR absenteeism OR productivity OR profession* OR income OR occupation* OR labo*r OR career OR retention)	1,763	727	575
Wellcome Trust grant funding	**Funders:** UK funders (excluding Wellcome Trust) that relate to research (excluding pure science research) **Type:** humanities & social science grants **Years:** 2015 onwards	N/A	17,332	909	736
UK Health Research Analysis	**Research Activity:** Selected only (research activity code column): 1.2 – Psychological and socioeconomic processes 2.3 – Psychological, social and economic factors 4.3 – Influences and impact 4.4 – Population screening 8.2 – Health and welfare economics 8.3 – Policy, ethics and research governance **Years:** 2015 onwards. **Funders:** UK funders (excluding Wellcome Trust)	N/A	36,042	2,101	555
WHU	[database received from WHU]	N/A	19	19	19

Database / Funder	Filters applied on public database	Search terms used	No. of records (no filters)	No. of records (with filters)	No. of records (duplicates removed)
WWW	**Topic Area**: Covid-19, Government and public policy, Mental and Physical health, Work	N/A	132	57	57
World RePORT	**Funders:** MRC, SRC, AMED **Country:** United Kingdom **Years:** 2015 onwards	Search terms used: worker, workplace, labour	58,000	637	125
Total			134,613	5,448	2,814

Table A3. Inclusion and exclusion criteria applied in the screening process

Inclusion criteria	Exclusion criteria
Research and activity funded since 2015	Research and activity funded before 2015
Funded research and activity explore the situation in the UK (or UK in addition to other countries)	Funded research and activity explore the situation in third countries
Research and activity that support working age disabled people, and people with long term health conditions to enter, and stay in, employment	Research and activity that focus on (clinical) health only
Research and activity that explore the relationship between work and health among the working age population	Research and activity that focus on health service (delivery or improvement) only
Research and activity that explore working population needs in relation to work and health	Research and activity that focus on labour market or employment without any reference to health or wellbeing
Research and activity that focus on employment issues/outcomes alongside health and wellbeing issues/outcomes	Research and activity that contain only delivery cost of an intervention
Research and activity that focus on how to help out-of-work people with health conditions find work or progress in work	
Research and activity that use the workplace or employer actions to improve health and wellbeing	
Research and activity that focus on improving health among out-of-work populations as an explicit step towards employment	

A.1.3. Data extraction

A classification framework (Table A4) was developed to help classify and analyse the nature of research funding into health and work. This framework was developed during the inception phase of this project, building on an initial draft provided by the WHU, and was refined further in collaboration with the WHU and after piloting data extraction with some of the preliminary results from the database searches.

A data extraction template was created using this classification framework with an additional column for the total funded value of the research. The data extraction process was carried out as follows:

- **Piloting.** Each researcher was allocated the same ten records from the compiled master database and asked to extract data based on the data extraction template. The results of this pilot data extraction were compared between researchers and the classification framework and data extraction template were further tweaked to accommodate frequently occurring themes or categories, or include additional data that were found to be relevant. The piloting allowed the researchers to work out any discrepancies and come to a harmonised approach for the full data extraction.
- **Interim checks.** The research team had regularly meetings and exchanges during the data extraction to further clarify any discrepancies and maintain a harmonised approach. Any uncertainties or unresolvable issues were escalated to the project leader.

- **Data extraction.** Researchers extracted data for all results in the databases, based on abstracts and other publicly available information about the project, or information provided by the funder directly to the team.

Table A4. Classification framework used for data extraction

Heading	Categories
Summary	*Summarise in one or two lines each study to aid use of the database in the future*
Country	*Choose from the dropdown list:* • *UK only* • *Other only* • *UK and other* • *No information* • *Not applicable*
Host institution sector	*Choose from the dropdown list:* • *Academia* • *Public* • *Not-for-profit* • *Private* • *Other* • *No information* • *Not applicable*
Funder sector	*Choose from the dropdown list:* • *Public* • *Private* • *Not-for-profit* • *Other* • *No information* • *Not applicable*
Award type	*Choose from the dropdown list:* • *Project grant* • *Programme grant* • *Scholarship or fellowship* • *Organisational funding* • *Other* • *No information* • *Not applicable*
Research type	*Choose from the dropdown list:* • *Evaluation of an intervention* • *Clinical trial/RCT* • *Historical* • *Policy analysis* • *Longitudinal study* • *Narrative review* • *Systematic review/Meta-analysis* • *Scoping review* • *Cross-sectional study* • *Quasi-experimental* • *Other* • *No information* • *Not applicable*

Heading	Categories
	• *Mapping* • *Feasibility study* • *Qualitative* • *Quantitative (other)* • *Mixed methods* • *Research to inform programme / intervention (no methods specified)*
Research type - notes	*Include additional information on the type of research methods, including evaluation types (i.e. process, impact, economic) and whether methods were largely qualitative or quantitative*
Research specialism	*Choose from the dropdown list:* • *Epidemiology* • *Implementation science* • *Occupational and environmental medicine* • *Rheumatology* • *Psychology* • *Sociology* • *Economics* • *Other* • *No information* • *Social policy* • *Disability studies* • *Human geography* • *Health services*
Data collection vehicle used	*Choose from the dropdown list:* • *Understanding Society* • *British Household Panel Survey* • *Health Survey for England* • *Labour Force Survey* • *Workplace Employment Relation Survey* • *Adult Psychiatric Morbidity Survey* • *Primary data collection* • *Historical archives* • *Other* • *No information* • *Not applicable*
Data collection - notes	*If applicable, additional information on the data used in the study*
Outcomes	*Choose from the dropdown list:* • *Solely employment related* • *Solely health related* • *Mostly employment related* • *Mostly health related* • *Mixed* • *Other* • *No information* • Not *applicable* Examples of health-related outcomes include: ○ Improving population health and preventing ill-health through workplace interventions

Heading	Categories
	(improved mental health / wellbeing / social functioning / musculoskeletal conditions) o Reduction in healthcare utilisation Examples of employment-related outcomes include: o Preventing health-related job loss / retaining people with health conditions and disabled people in work (return to work, improved work ability) o Reduced sickness absence or presenteeism o Addressing inequalities for people with health conditions and disabled people in employment (job acquisition, tenure, intensity)
Outcomes - notes	*Summarise what the main outcomes of interest are, including relevant details on data, metrics used to measure outcomes (e.g. a mental wellbeing scale), etc.*
Main health topics	*Choose from the dropdown list:* • *Musculoskeletal disorders* • *Mental health (e.g. depression, anxiety, work-related stress)* • *Problems or disabilities (including arthritis or rheumatism) connected with arms or hands, legs or feet, back or neck* • *Difficulty in seeing or hearing* • *Severe disfigurements, skin conditions, allergies* • *Chest or breathing problems, asthma, bronchitis* • *Heart, blood pressure or blood circulation problems* • *Stomach, liver, kidney or digestive problems* • *Diabetes* • *Epilepsy* • *Severe or specific learning difficulties* • *Progressive illness not included elsewhere* • *General long-term physical disability or chronic health problem* • *Obesity/weight-related* • *Lifestyle areas (physical activity, nutrition, sleep, alcohol consumption, etc.)* • *Sexual health* • *Other* • *No information* • *Not applicable* • *General health & wellbeing* • *Occupational health*
Secondary health topic	*Choose from the dropdown list:* *(same as above)*
Health topic – notes	*Provide more detail / specify what the health topics are*
Population of interest	*Choose from the dropdown list:* • *Age* • *Gender* • *Ethnicity* • *Employment status* • *Job type*

Heading	Categories
	• *Education level* • *Income* • *Lifestyle factors* • *Pre-existing health condition* • *Other* • *No information* • *Not applicable* • *Disadvantaged communities* • *Region* • *Survivors of human trafficking* • *General working population*
Population of interest - notes	*Provide more detail on the sub-groups, e.g. if age, what age groups?*
Population of interest – sub-group analysis	*Add additional detail of any particular sub-group analysis (e.g. did the study look at differences in outcomes by age group).*
Intervention or measure	*Provide information on the intervention, if available*
Policy relevance	*Choose from the dropdown list:* • *Problem definition (How many people are affected? Drivers/causes and how they vary? Risk and protective factors? Barriers and enablers to better outcomes?)* • *Selection, design and evaluation of intervention, policy or measures (What support do different groups want or expect? Barriers and enablers to this? Quality and availability of current support or provision? What interventions have been tried and to what effect?)* • *Enable real-world implementation (Enablers or constraints to delivery?)* • *Improve concepts and measurement (To what degree have the issues been properly conceptualised/theorised? Valid and reliable indicators? Better data?)* • *Horizon scanning (Research looking at future trends and issues)* • *Other – (able to specify in next column)* • No information • Not applicable
Policy relevance – notes	*Provide more detail / specify what questions the study aims to address*
Policy themes	*Choose from the dropdown list:* • *Understanding population needs in relation to work and health among working age people* • *Supporting participation in good work for people experiencing ill health* • *New ways of approaching health and work intervention/policies or service design and delivery* • *Health / employment in relation to specific occupation groups*

Heading	Categories
	• *Understanding the impact and relative effectiveness of one or more interventions/policies in relation to work and health* • *Other – (able to specify in next column)* • *No information* • *Not applicable*
Research outputs expected	*Provide info, if available (journal publication, policy report, workshop, etc.)*

A.1.4. Data analysis

Data analysis was carried out using descriptive statistical analysis. We calculated frequencies of the different categories applied in the data extraction sheet to understand the nature of the research funding landscape, such as the distribution of research funding per methodology used or theme addressed. We also calculated the total funding allocated per subcategory, in order to understand the distribution of spending per classification (e.g. which types of research methodologies have used the most funding, which policy themes received the most amount of funding since 2015, and so on). Funding activity is presented through the study according the classification matrix presented in Table A4. Most classification categories were assigned discrete options to facilitate data analysis. However, we captured nuances by allowing free text clarifications. These free text additions have been qualitatively analysed and presented alongside the descriptive statistical analysis through this study. The study follows a message-led reporting format to highlight the main takeaways from the analysis of research funding.

A.1.5. Caveats and limitations

There are some caveats and limitations that should be kept in mind when interpreting the findings and analyses presented in this report:

- The results of the database searches were divided up amongst the researchers carrying out the data extraction. Since data extraction was carried out by individual researchers, there may be differences in categorisations of the data. We tried to mitigate this as much as possible through the piloting, cross-checking, interim checks, and the final analysis oversight by one researcher and the project leader. However, differences in categorisations cannot be ruled out.
- Some subjectivity may be applicable to the inclusion and exclusion process. For example, we agreed to include research projects that supported improvements in working conditions or to support particularly vulnerable categories of workers into work. However, similar projects that did not explicitly refer to improving worker wellbeing or working conditions may have been omitted, since this would be interpreted as falling under research related to work only and not intersecting explicitly with health. Where there were instances of uncertainty, oversight by the project leader helped support uniformity in the approach of including and excluding particular types of research.
- There were discrepancies in the information available in the databases and abstracts. Hence, the data extraction sheet contained 'no information' for certain details of some research. For example, a research project may have referred to using surveys as a research method without specifying if

these were quantitative or qualitative, whether they were created bespoke for the project or using publicly available survey data information, and so on. Where possible, researchers searched for publicly available further information about the project to populate the extraction template as fully as possible.

- Funding data was retrieved from all possible sources but there was no funding information available for the research funded by the WWW.

A.2. Contextualisation of research funding

A.2.1. Interviews

To better understand and contextualise the findings from the review of research funding, we conducted 15 semi-structured interviews with six funders and nine researchers. Possible interviewees were identified based on the analysis of research funding (see Annex A.1.4) and included additional suggestions from the WHU.

The long list of research funders and leading researchers in the field was prioritised by the research team aiming to include a wide range of different types of organisations and perspectives and adapted according to the availability of participants. While we aimed at maintaining parity between the two groups (funders and researchers), fewer number of funders were available for the interview.

The interviews lasted between 30 and 60 minutes. They were conducted remotely, with participants providing their views on the current funding landscape in this area, gaps, likely future trends and research priorities (see Annex A.2.2). Interviews were recorded with permission of the participants and summary notes of each interview were compiled and analysed to identify key themes. The interview findings were then integrated with the funding analysis where relevant.

A.2.2. Topic guides

Welcome (background, purpose, consent, questions)

Role and background

Current portfolio or research (funding) related to work and health

For researchers	For funders
1. Can you tell us briefly about your work and health research (key areas, hallmark studies) in the last 5 years? 2. What are the most important studies on work and health carried out by other researchers in the last 5 years? 3. What are the most important studies you think we should be aware of using key data collection vehicles (Understanding Society, British Household Panel Survey, Health Survey for England, Labour Force Survey, Workplace Employment Relation Survey, Adult Psychiatric Morbidity Survey)?	1. Can you tell us briefly about your work and health research funding (how it relates to your wider portfolio, what key areas, hallmark studies are) in the last 5 years? 2. How do you set priorities for health and work research? 3. How do you select projects/programmes for funding? 4. Are you aware of any research in work and health that use key data collection vehicles (Understanding Society, British Household Panel Survey, Health Survey for England, Labour Force Survey, Workplace Employment Relation Survey, Adult Psychiatric Morbidity Survey)?

Future research needs

For researchers	For funders
4. What do you see as a priority in work and health research in the next 5 years? Type of research, topic focus? 5. What other gaps do you see in the current work and health research? 6. In your opinion, what are the main opportunities and challenges for research in this area? 7. Specifically, what are the main opportunities and challenges for funding in this area?	5. How much of a priority is work and health going to be within your wider portfolio? Any future relevant funding opportunities we should know about, focus and scale etc. 6. What do you see as a priority in work and health research in the next 5 years? Type of research, topic focus? 7. What other gaps do you see in the current work and health research? 8. In your opinion, what are the main opportunities and challenges for research in this area? 9. Specifically, what are the main opportunities and challenges for funding in this area?

Key stakeholders and collaboration

For researchers	For funders
8. Who are other research organisations and researchers in these areas? 9. What are the ways in which the work and health researchers can collaborate with each other at the moment? 10. What are the ways in which the work and health researchers can collaborate with researchers from other disciplines at the moment? 11. What are the ways in which work and health researchers can liaise with policymakers and other stakeholders at the moment? 12. Can you point to any good practice in collaboration (of these three sorts)? 13. In your opinion, what are their advantages and disadvantages? Probe why 14. What, if anything, could further improve collaboration in work and health research? 15. Specifically, would establishing a dedicated work and health research centre help improve collaboration? Probe why 16. Who are the main funders of work and health research and what are their respective strengths and limitations? Probe why?	10. Who are the main research organisations and researchers in this area? 11. How, if at all, do you support any form of researchers' collaboration (with each other, with other disciplines, with wider stakeholders) in work and health? 12. Can you point to any good practice in work and health research collaboration? (of these three sorts)? 13. Who are other main funders of work and health research and what are their respective strengths and limitations? Probe why? 14. How, if at all, do you collaborate with these? 15. Specifically, do you coordinate work and health research funding with these? Probe how or why not 16. Do you have any thoughts on how to avoid duplication of funding in this area? Can you point to any good practice in work and health research funding coordination? 17. We understand that funding of research centres can vary in models but often be short term (up to 3 years). What, in your opinion, are the pros and cons of this model of funding? 18. What, if anything, could further improve collaboration in work and health research and coordination of research funding? 19. Specifically, would establishing a dedicated work and health research centre help improve collaboration and coordination? Probe why

Additional studies for inclusion in database

For researchers	For funders
17. As part of this study, we have compiled a database of relevant research projects in the field since 2015 drawing on a range of public databases. Are there are any particular research projects in the last five years that you think we ought to be aware of when conducting this research?	20. As part of this study, we have compiled a database of relevant research projects in the field since 2015 drawing on a range of public databases. Are there are any particular research projects in the last five years that you think we ought to be aware of when conducting this research?

Final thoughts and any questions for the research team

Finish and thanks