1 Introduction

In the course of developing the MQ research programme we discovered that there is no comprehensive analysis of mental health research investments to date.

1.1 Building a Knowledge Base

As an important first step in building our knowledge base on mental health research, we conducted a thorough search of publically available information to generate a complete overview of research spend in the UK. We conducted a comprehensive analysis of all mental health related research grants funded by all relevant UK funding bodies over the last six years (2008 – 2013)\(^6\).

This study provides an unprecedented understanding of UK research expenditure across all mental health disorders. Analysis of this data has led to a deeper understanding of investment in mental health research. This data is an essential part of MQ becoming a leading authority on mental health research. It enables us to identify potential gaps in both spending and knowledge. It provides the basis from which we can build research and research policies. It will enable us to identify where there may be duplication or overlap in funding. Importantly, this report establishes the basis for assessing MQ impact on the research landscape.

This is just the start. The database will be updated on an annual basis, enabling us to track trends and assess outcomes and impact of UK investments.

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\(^6\) By definition, this excludes industry spending as such information is not available on a national basis.

\(^6\) Definitions and methods for this study are described in an accompanying paper.
1.2 Previous Analyses

Publications to date have provided an interesting, although incomplete view of the mental health research funding landscape. The UK Clinical Research Council Health Research Analysis 2009/2010 (UKCRC HRCS 2009/2010) presented a snapshot of research, active in 2009/2010. While it did provide some statistics on mental health research as a whole funded by key UK funding bodies, the main aim of the report was to analyse expenditure patterns across all health research grants. Mental health research was therefore only discussed in comparison to 20 other health categories and there was no analysis on research within the mental health category. The focus of the Medical Research Council (MRC) Review of Mental Health Research 2010 was to identify research opportunities and tractable priorities for improving mental health research. Information was collected through a series of workshops attended by a range of stakeholders and by canvassing opinion from key research leaders. The funding portfolio analysis was a small component of the report, for the most part restricted to data collected from just two key funding bodies. In contrast to the UKCRC HRCS 2009/2010 report the MRC Review of Mental Health Research 2010 report did analyse data over consecutive years between 2005 and 2009 but again analysis was restricted to mental health research as a whole with no detail of the grants included within the mental health category. The Association for Medical Research Charities (AMRC) co-ordinated a report that was published in 2007 outlining the research funding landscape of 29 of its member funding bodies for the financial year 2004/2005. It was reported that £63.7 million was spent in total, and only 0.5% (£318 500) of this total expenditure was awarded to mental health research. Again there was no detailed analysis beyond that of the mental health research category as a whole. For the purposes of this study, the low level of investment by these small funding bodies to mental health research were not evaluated further.

There is a clear need for more substantive analysis of mental health research funding both in the UK and globally. This study presented here provides data on mental health research funded by relevant UK funding bodies over consecutive years, with detailed analysis of the grant award record by topic and research activity focus. This preliminary look at the dataset describes the type of research funded by major investors in mental health; we hope that future analyses will explore the qualitative details of this major research enterprise in the UK.

2 Major UK Funders of Mental Health Research

We identified 1343 mental health related grants that were awarded in the six-year time frame. The 11 contributing UK funding bodies were:

- National Institute for Health Research (NIHR)
- Medical Research Council (MRC)
- Arts and Humanities Research Council (AHRC)
- Biotechnology and Biological Sciences Research Council (BBSRC)
- Economic and Social Research Council (ESRC)
- Engineering and Physical Sciences Research Council (EPSRC)
- Technology Strategy Board (TSB)
- Chief Scientists Office (CSO)
- Public Health Agency Health and Social Care (PHA HSC)
- National Institute for Social Care and Health Research (NISCHR)
- The Wellcome Trust (WT)
2.1 Overview of Total Amount Awarded: by Funding Body

The total UK expenditure on mental health related research grants awarded between 2008 - 2013 is £692.7 million. There are three major funders of mental health research: the National Institute for Medical Research, the Medical Research Council and the Wellcome Trust. Each of these major funding bodies contributed similar amounts over the six years and, when combined, their total contributions account for 86% of the total UK expenditure. Of the remaining eight funding bodies, the Biotechnology and Biological Sciences Research Council and the Economic and Social Research Council were the next biggest funders of mental health research, contributing 6% and 4% of the total UK expenditure. Finally the devolved governments, two other Research Councils UK (RCUK) contributors and the government funded Technology Strategy Board contributed approximately 1% of the total UK mental health research expenditure each. The amount awarded by each of the different funding bodies is presented in figure 1.

![Figure 1](image1)

**Figure 1.** Total amounts awarded (£ millions) to mental health research by the different UK funding bodies between 2008-2013.

2.2 Overview of Total Amount Awarded: by Year and Funding Body

On average, the UK invests approximately £115 million per year in mental health research. This represents an estimated 5.5% of all research spend. While the proportion of the funding awarded by each body varies slightly from year to year, the total amount awarded for each of the six years has been relatively consistent (Figure 2).

![Figure 2](image2)

**Figure 2.** Total amounts awarded to mental health research each year by the different UK funding bodies between 2008-2013.
2.3 Overview of Total Amount Awarded: by Research Activity

Each project was categorised as to the types of research activity it involved using the eight categories listed in the UK Clinical Research Collaboration Health Research Classification System.

The eight categories are:

- Underpinning Research
- Aetiology
- Prevention of Disease & Conditions, and Promotion of Well-Being
- Detection, Screening & Diagnosis
- Development of Treatments & Therapeutic Interventions
- Evaluation of Treatments & Therapeutic Interventions
- Management of Disease & Conditions
- Health & Social Care Services Research

Where a project study covered research from more than one type of research activity the amount awarded was split between the relevant research activity types. The results from this overall research activity funding landscape for 2008-2013 are presented in figure 3.

![Figure 3](image.png)

**Figure 3.** Total amount awarded to different research activities between 2008-2013.

As was found in the MRC Review of Mental Health Research 2010 for NIHR and MRC grants, our more comprehensive analysis also indicates that underpinning research and aetiology research have received the highest amount of funding support. We found that 33% and 25% of the total UK expenditure was awarded to underpinning and aetiology research respectively. The next most well funded research activities were evaluation of treatments and health and social care services research, receiving 13% and 11% of the total UK expenditure respectively. Finally, there seems to have been considerably less funding awarded to prevention of disease and promotion of well-being research, detection, screening and diagnosis research, development of treatments research and management of disease and conditions, all of which receive between 4% and 6% of the total UK expenditure.
In general, our analysis highlights that mental health related research thus far has focused on trying to understand and optimise the treatments and care that are currently available. There has been little investment in preventative and novel treatment development research that would offer more hope for future generations that will be affected by mental ill health.

3 Detailed Analysis of Mental Health Related Research Grants

As part of this preliminary study we have compiled a database with an unparalleled level of detail on every grant awarded by UK funding bodies within the last six years. For each grant awarded we have collated the project title, amount awarded, start date, the name of the principle investigator, the institution of the principle investigator and the funding stream within the funding body. This database of information will enable the identification of the key investigators and institutions in each field of research. It will also provide an understanding of the current projection of research for many specific disorders and thus highlight gaps in the mental health research field as a whole. Having collected this information, each project was reviewed and a record was made as to what topics and types of research activity were investigated within the project. Further details on the methodology can be found in the supplementary methods report.

3.1 Overview of Total Amount Awarded: by Mental Health Related Research Category

Each project was allocated to one of 20 different mental health related research categories. Where a project study covered research from more than one category, the amount awarded was split between the relevant categories (see supplementary methods for further details). There are considerable challenges when it comes to nomenclature and categorisation of mental health disorders. For the purposes of this study, we ensured that the mental health conditions listed within the UKCRC HRCS Mental Health category were included and we also included additional conditions based on repeated observation of these conditions in the title and abstracts of the grants. The anxiety category was expanded to delineate information specific to obsessive compulsive disorder (OCD), post-traumatic stress disorder (PTSD), phobias, general anxiety disorder (GAD), and anxiety research in a broader sense. Additionally, we included bipolar disorder and ADHD categories and broader categories to capture information on research on the psychiatric population and psychiatric services in general. We also included a category on brain function and dysfunction research relevant to mental health. An affective/mood disorders category was created in order to include studies with these titles but which did not specify whether they were investigating a combination of depression and bipolar disorder or depression and anxiety. Finally, any remaining grants that did not fit into any of these categories were grouped into an ‘Other Mental Health Conditions’ category. It was of interest to investigate whether the research in this category is an emerging, steady or diminishing avenue of mental health research. The results from this analysis are presented in figure 4.
Figure 4. Total amount awarded to different mental health related categories between 2008-2013.

Over the last six years, depression research has received the most funding of all the specific mental health disorders with 7.2% of the total mental health research expenditure. Other top-funded specific mental health disorders include psychosis, substance abuse and addiction, and schizophrenia, which received 4.9%, 4.8% and 4.4% of the total mental health research expenditure respectively.

Psychosis is a behavioural phenotype (group of symptoms) that is present in both schizophrenia and bipolar disorder, so research in this domain would be considered by some to help improve the lives of both individuals with schizophrenia and individuals with bipolar disorder. However, there is evidence to suggest that this may not be the case as the type of psychotic behavior exhibited by those with schizophrenia differs from that in individuals with bipolar disorder. For example, episodes of psychosis are more mood congruent in individuals with bipolar disorder. Bipolar disorder research received only 1.5% of the mental health research expenditure. This is relatively little funding, especially when we consider that bipolar disorder is more prevalent than schizophrenia; in the USA approximately 2% of the population are affected by bipolar disorder and 1% of the population are affected by schizophrenia.

The spend on general anxiety and specific anxiety related disorders was 2.3% of the total mental health research expenditure. There was variation between the specific anxiety related disorders (GAD, PTSD, OCD and phobias) that supports our proposal to continue tracking these fields of research independently. Eating
disorders, ADHD and personality disorders research received very low levels of funding at 0.4%, 0.6% and 0.8% of the total mental health research expenditure respectively. The gap in funding for these disorders suggests that further investigation is required to ascertain why so little funding has been channeled into research for these disorders.

The ‘Other mental health conditions’ category received 2.1% of the total mental health research expenditure. The most common conditions in this category were speech and language difficulties with 15 grants focused on this area. Lesser investigated specific conditions included conduct disorder (5 grants), emotional disorders (3 grants), attachment problems (2 grants), behavioural problems and disruptive behavioural disorders (3 grants), body dysmorphic disorder (1 grant), Tourette’s syndrome (1 grant), conversion disorder (1 grant) and depersonalization disorder (1 grant). Other than for the speech and language difficulties grants, which have been awarded evenly across the six years, there are not enough grants for any of the other conditions to track at present whether they are emerging or closing areas of research.

Psychiatric population and services related research was awarded 18% of the total funding. A large proportion of these studies (32.1%) were focused on health and social care research. The research categories that were next most invested in were evaluation of treatments and therapeutic interventions, management of disease and conditions, and aetiology, all of which received approximately 14% each of the total psychiatric population and services research expenditure. 135 of the 339 psychiatric population and services related research grants were funded by the NIHR. The number of grants awarded by other funding bodies in this category ranged between 6 to 38 grants.

Mental health conditions are commonly co-morbid with other mental health conditions and other somatic (physical) health conditions. We found that 3.8% of the mental health related research grants funded and analysed in this study were investigating mental health in the context of other conditions. These conditions included, at a general level, neurodegenerative, neurological and somatic disorders. More specific examples of the co-morbid conditions investigated include Alzheimer’s disease, dementia, Parkinson’s disease, epilepsy, traumatic brain injury, stroke, diabetes, cancer, cardiovascular disease, asthma, and Down's syndrome.

Finally, two of the largest categories into which mental health related research funding was invested were research aimed at understanding normal brain function and brain dysfunction relevant to mental health research, receiving 33.8% and 11.2% respectively. This research is mainly focused on understanding psychological and biological mechanisms thought to be disrupted in various mental disorders. The large sums awarded to these two categories are reflected in the large sum of mental health related research funding invested in underpinning and aetiology research activities.

3.2 Overview of Total Amount Awarded: focus on Suicide & Self-harm and Mental Health in the workplace

There are many ways of ‘cutting the cake’ to comprehend the large range of research approaches taken with the aim of improving the lives of those individuals with mental health conditions. In addition to analysing the funding data by specific mental health disorders with affiliated co-morbid disorders, we have captured two other perspectives in our grant level analysis of the mental health research funding landscape: suicide and self-harm, and mental health in the workplace.

Self-harm is an action taken by individuals suffering from a range of mental health conditions and suicide is an incredibly tragic action taken by people for whom we presume the suffering became too much. Out of all 1320 grants awarded between 2008 and 2013, only 32 grants were awarded to research related to suicide and self-harm amounting to an expenditure of £12.4m, which is only 1.8% of the total mental health research expenditure. While NIHR is by far the biggest funding contributor to this field of research, it
appears that this realm of research is an area of particular interest for the much smaller Welsh devolved government research funding body, NISCHR, as they contributed 21.0% of their total mental health research expenditure to suicide and self-harm related research. This correlates with the tragic Bridgend suicide cluster that took place in Wales between December 2007 and February 2008. In general, funding for suicide and self-harm research has not been administered in a steady fashion but instead there have been two major injections of investment in 2008 and 2012. Lack of a steady source of funding threatens the quality of research within any area of research, as a reliable income stream is required to retain the talent within a research area.

Research aimed at supporting individuals with mental health disorders in the workplace was found to be a very niche field with only €1.7m investment over the six years, amounting to 0.2% of the total mental health research expenditure. This lack of investment is particularly striking when taking into account the considerable financial burden that mental ill-health has on companies and the national economy. The ESRC funds 9 of the 14 grants on mental health in the workplace, which accounts for 67.6% of the total expenditure on research related to mental health in the workplace. This niche field does, however, show signs of growing as the investment showed an increasing trend with the highest amount being awarded in 2013, the most recent year analysed.

4 The ‘Driving Hubs’ of Mental Health Related Research Funded by UK Funding Bodies

Funding for mental health research in the UK has been awarded to just under 200 different universities, institutes and National Health Service (NHS) Trusts across the country. The distribution of these funds are not, however, evenly distributed and a large proportion of the total funding has been awarded to several key ‘hubs’. The geographical location of the key UK ‘driving hubs’ for mental health research include London, Cambridge and Oxford and, to a lesser but still considerably large extent, Cardiff, Bristol, Manchester, Newcastle and Edinburgh (figure 5).

Mental health research is a global enterprise but the UK government funding analysed here has generally been awarded to institutions within the UK. An exception to this is a grant funded by the MRC to an investigator based in Germany but who is also an honorary professor at the University of Aberdeen. In contrast the WT, the largest charitable foundation in the UK, has invested a portion of its total mental health research expenditure in 9 mental health research projects being conducted in countries from across the world including Nigeria, Kenya, India, USA, the Czech Republic, Hungary and Ireland (figure 6).
**Figure 5.** Geographical location within the UK of the awardee institutions. The size of the markers represent the relative amount awarded to that institute for mental health related research between 2008-2013.

**Figure 6.** Geographical location across the world of the awardee institutions. The size of the markers represent the relative amount awarded to that institute for mental health related research between 2008-2013.
This preliminary report provides a detailed description of UK mental health research funding practices. At face value this report highlights that the investment in specific mental health disorders research has been very low. For example, in 2009 even the most well funded mental health disorder, depression, only received £5.0 million, just under a twentieth of the total mental health expenditure for that year. Further context to this statistic is that in 2009 mental health research as a whole only received a third of the funding that was awarded to cancer research. Less resources in a research field means less promise for new discoveries that could transform the lives of those with mental health disorders.

There are multiple factors that influence how money is invested and whether it is invested in research for an overarching principle or a particular mental health disorder. The predominance of investment in brain function and dysfunction represents the view of many researchers that the most effective approach to improving the lives of those with mental health disorders is through initially understanding how the brain works prior to attempting mental health disorder specific research. The lower level of funding for more immediate patient centred research may reflect the lack of advocacy in this field. Other factors that influence mental health research investment include consideration of the prevalence of mental health disorders, the burden to patients and families, the economic burden resulting from that disorder and the capacity for high quality research to be conducted in relation to the disorder.

5.1 Prevalence and Socioeconomic Factors

It is difficult to compile a comparable set of prevalence and burden of illness data across multiple disorders because while there are many different sources available there is a fair range in the methods that have been used to calculate the values.

Relatively useful prevalence statistics can be found in the Adult Psychiatric Morbidity in England 2007: Results of a Household Survey report. A strength of this study is that the prevalence statistics are comparable across the different mental health disorders. One of the key problems of this survey in relation to our analysis is that the report does not provide statistics for the full range of mental health disorders that we analysed in our funding landscape analysis. For example they do not provide statistics on depression or the specific anxiety disorders separately but instead combined these disorders under the title common mental disorders. Prevalence statistics are also not provided for schizophrenia and bipolar disorder separately but instead are grouped under the term psychosis. Another problem with the statistics provided by this report in relation to our funding landscape analysis is that the data collected was restricted to England while our data represents mental health research expenditure across the UK. Finally our data was collected between 2008 to 2013 and so data collected in 2007 is not directly relatable to our findings, even if they were representative of the UK as a whole. All these factors combined prevent us from being able to calculate an accurate statistic for the mental health research expenditure per affected individual. However it is worth noting that a new survey is expected to be published in the next couple of years but whether the format of the analysis will change in anyway is unknown.

Methodology used to calculate prevalence data can vary considerably. Examples of potential differences include how the population to be sampled was selected, the assessment scales and diagnostic criteria used to determine whether an individual has the disorder, and how recently an individual must have experienced the disorder in order to be recorded as being an affected individual. Prevalence values are most commonly presented as a percentage of a population that experienced the disorder within the last year, month or within their lifetime, and frequently there are different prevalence patterns for adults, adolescents and children.

The methodology used to calculate cost of illness data is also hugely variable depending on the decisions made as to what level of expenditure will be attributed to the disorder. This could include restricting
analysis to how much money was spent by the NHS to treat individuals with the disorder (direct expenditures), cost to family and community or extend as far as to include the financial loss to employers as a result of employees being on sick leave with that disorder (indirect expenditures). Further extension of these kinds of analyses to a calculation of the burden of illness based on quality adjusted life years is the work of several expert research groups and beyond the scope of this discussion. For perspective, see the work of David Clark supporting the IAPT programme of the NHS 9.

5.2 Qualitative Deeper Dives

The database that we have compiled has enabled us to gain substantial insight into the funding landscape of mental health research over recent years. There is, however, still much untapped information that can be drawn from this database by means of qualitative analysis that would provide a deeper understanding of key problems that investigators are currently tackling within different research fields of interest to MQ. The academic aims outlined in the project titles and available abstracts of each grant on our database could be a good starting point for such qualitative analysis. From here, grant project ID numbers or key project terms combined with the awardee’s name could be used to search the scientific literature for publications produced as a result of the funded projects. Alternatively, some of the funding bodies are beginning to provide a list of outputs in the form of published papers and patents associated with grants they have awarded. This information can be accessed using the grant project ID number in our database for that project. Comparing the qualitative findings for the different grants within a research field for a specific disorder will enable identification of current and past research trends in that field and also help determine the current research capacity for specific disorders.

Finally, qualitative analysis of previously funded grants would position MQ well to achieve its mission of becoming an informed authority in the field of mental health research. The findings could be used in the process of developing new research programmes that will focus on supporting research that will soon transform the lives of individuals with mental health disorders and conditions.

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7 References


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