

Acknowledgement of psychiatric research funding

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Acknowledgement of research funding is vital for the identification of potential conflicts of interest and for monitoring research output by funding agencies, but the extent to which such acknowledgements are made in psychiatric journals has not been studied.

There is evidence that interpretation of evidence can differ according to whether a conflict of interest is present on the part of the authors of an article (Barnes & Bero, 1998; Stelfox *et al.*, 1998; Vandenbroucke, 2000). Readers' interpretations may also differ according to whether they are aware of such a conflict (Chaudhry *et al.*, 2002). Concern on the part of editors about failure to disclose competing interests has led to the adoption of policies on disclosure by many journals, including the *British Journal of Psychiatry*. However, evidence from a survey of five journals (Hussain & Smith, 2001) suggests that progress in implementing these policies is slow.

Assessment of the quality of scientific research is regarded increasingly as an important issue, especially for funding agencies that are paying closer scrutiny to their budgets and to publications resulting from their support (Lewison *et al.*, 1995). The main funding sectors for UK biomedical research are the UK government, UK private non-profit organisations, and industry (Dawson *et al.*, 1998). Such funding bodies are using bibliographic databases to monitor their output. The Research Outputs Database (ROD) set up by the Wellcome Trust is the main source of such data in the UK. It provides a detailed analysis of trends in the volume, type and effectiveness of UK research and relates these variables to inputs since 1988. The ROD uses acknowledgements in publications to identify the sources of research funding. Papers with a UK address from the Science Citation Index and the Social Sciences Citation Index in biomedical and relevant social science journals

or with a biomedical keyword in other journals are identified and examined for acknowledgements. It has been found that over 90% of papers acknowledge extramural support that has been given in significant quantity (Lewison *et al.*, 1995; Smith, 2001), but previous research has not included psychiatric journals. The psychiatry (mental health) subfield has recently been defined (by L.H. and Professor Graham Thornicroft) and the journals and keywords used provide a filter with a precision of 91% and a recall of 93% (G. Lewison, personal communication, 2003).

We examined all original research papers with a UK author to be published in the *British Journal of Psychiatry* in 2000 after the final draft of each paper had been accepted for publication by G.W. We recorded type of research (basic science, clinical drug trial, etc.), presence of acknowledgements of funding, and source of funding. Discrepancies between the investigators' ratings of the type of research were resolved by discussion. Corresponding authors for the sampled papers were contacted using a postal questionnaire after acceptance and before publication and asked for all details of funding. Non-respondents were sent the questionnaire a second time after 6 months. The questionnaire used the Wellcome Trust's classification of types of funding (intramural, extramural, personal support through fellowships, etc.) and sources of funding (foundation, government agency, industry, etc.) used for the ROD, and the Wellcome's classification for reasons for non-acknowledgement of funding sources (Table 1).

Previous work on editorial decision-making (Howard & Wilkinson, 1998) suggests that editorial policy is reasonably consistent; research published in 2000 is therefore probably representative of work found in the journal in other years. However, studies published in any one year usually reflect research funded several years

earlier. If acknowledgements in publications have become more accurate in recent years this could lead to a bias against those studies that have taken longer, exacerbated by our small sample size of 113 papers.

CHARACTERISTICS OF THE SAMPLE

Table 1 shows the characteristics of the 113 papers included. Nearly three-quarters (83) of the corresponding authors responded to the first questionnaire and a further 14 responded to the second, giving an overall response rate of 86%. Table 1 also shows the data derived from the authors' final drafts. Extramural funding is by far the most frequently cited source; 80 out of a total of 113 sources cited in the sample of 113 papers were of extramural funding. The proportions of types of sources acknowledged reflect the predominance of extramural sources in acknowledgements; the most frequently cited foundation was the Wellcome Trust, while the government agency most often acknowledged was the Medical Research Council. Half of the papers published concerned general adult psychiatry (51%), with learning disability (10%), child and adolescent (8%) and old age (7%) psychiatry contributing roughly equal shares. Other categories included psychotherapy (4%), basic science (4%) and 'other' (7%). The majority (81%) of papers were quantitative, of which case-control and cross-sectional designs were the most common (20% and 22% respectively).

UNACKNOWLEDGED SOURCES OF FUNDING

Table 1 also shows the extent to which unacknowledged sources were identified by the survey, as well as information thus derived on the accuracy of funding acknowledgements in each paper. Twenty-two respondents identified a funding source not acknowledged explicitly in their papers. Twelve of these 22 sources omitted were of extramural funding, compared with 80 extramural sources acknowledged in the 113 papers. Fifty-three respondents had no further sources to add; these papers are therefore regarded as accurate. Nine of

Table 1 Characteristics of papers with at least one UK-based author published in the *British Journal of Psychiatry* in 2000

Characteristic	n (%) ¹
Information from accepted papers (n=113)	
Number of sources acknowledged in paper	
0	34 (30)
1	56 (50)
2	14 (12)
3	7 (6)
4	2 (2)
Types of sources acknowledged in paper	
Charity	1 (1)
Foundation	25 (22)
Government agency	39 (35)
Government department	17 (15)
Hospital trustees	1 (1)
Industry – non-pharmaceutical	4 (4)
Subsidiary industrial organisation – non-pharmaceutical	0
Industry – pharmaceutical	11 (10)
Subsidiary industrial organisation – pharmaceutical	0
Local or regional authority	10 (9)
Not-for-profit organisation	1 (1)
Mixed collecting charity and endowment	0
Other	4 (4)
Types of funding acknowledged in paper	
Intramural	8 (7)
Extramural	80 (71)
Personal support	13 (12)
Other	2 (2)
Insufficient information to determine type of funding	10 (9)
Acknowledgements by survey respondents (n=97)	
Number of funding sources for study acknowledged	
0	17 (18)
1	59 (61)
2	13 (13)
3	6 (6)
4	2 (2)
Number of sources acknowledged in questionnaire and paper	
	74
Number of sources acknowledged only in questionnaire	
	22
Reasons for missing acknowledgements	
Paper was a review, not new research	5
Did not consider acknowledgement was needed	6
No guidance or reminder from journal	0
Funding body gave no guidance	0
Inadvertent omission of acknowledgement	2
Did not realise acknowledgement was expected	0
Level of funding was too low	3
Research not relevant to concerns of funding body	1
Thought acknowledgement not appropriate for this journal	0
Funding body asked for no acknowledgement to be given	0
Space limitations in the journal	1
Did not want to advertise the source of funding	0
Other ²	16
Papers compared with questionnaire responses	
All sources in questionnaire recorded in paper	53 (55)
Some sources recorded in paper, further sources given in questionnaire	5 (5)
No source recorded in paper, provided in questionnaire	17 (18)
No acknowledgement in paper, source recorded as 'none' in questionnaire	17 (18)
Source not acknowledged in paper but recorded as acknowledged in questionnaire	5 (5)

1. Percentages may not add up to 100, owing to rounding.

2. See text for examples of other reasons given.

the 22 sources further identified by questionnaire were of National Health Service (NHS) or Higher Education Funding Council (HEFC)/university funding. Seventeen authors stated that they had no funding in both paper and questionnaire. Although some might have been self-funding – for example in private practice or semi-retired – others were probably salaried by the NHS or HEFC, as NHS trust and university addresses were frequently given. This statement was therefore assumed to mean that no extramural funding was received. Funding by the NHS and HEFC, which by definition are largely intramural sources for those with clinical and academic posts respectively, was hardly ever mentioned explicitly in accepted papers. The Wellcome Trust's ROD does not record intramural funding, nor is it expected that NHS or HEFC funding should be acknowledged; rather, implicit acknowledgement is made by the inclusion of a trust or university address. However, explicit acknowledgement might clarify the funding source for those making decisions based on monitoring of research output.

Although some respondents endorsed reasons offered in the Wellcome Trust classification for lack of acknowledgements, many wrote statements such as 'no funding required' or 'done in own time'; these were classified as 'other' reasons by the researchers. There is clearly genuine uncertainty among authors about whether to acknowledge funding sources, but we would argue that it is better to be over-inclusive, as research bodies are interested in all research outputs.

Authors of 14 (12%) papers omitted to mention extramural sources, compared with the 5% found previously for a sample of biomedical papers not including psychiatric research articles (Lewison *et al*, 1995) and the 9% found in a recent survey of randomised controlled trials published by the *Annals of Internal Medicine*, *BMJ*, *JAMA*, *Lancet* and *New England Journal of Medicine* (Smith, 2001). All of these studies failed to assess independently the funding sources of the published studies, for example by contacting the finance department of trusts or by dealing with more than the corresponding author of the study. However, such methods would not provide a gold standard and might produce even less information on funding for research at a particular institution.

WHERE SHOULD ACKNOWLEDGEMENTS BE MADE?

There is an apparent lack of consensus about where authors should record their funding sources. The ROD includes funding information from any part of the paper. Although some use the 'declaration of interest' section, most use the 'acknowledgements' section. Others use the 'acknowledgements' section to thank individuals who helped with the research but are not authors. Although no author specified lack of direction from the journal as a reason for failure to record a funding source, the use of a heading 'sources of funding' might facilitate greater consistency and accuracy.

Most extramural sources of psychiatric research funding are therefore acknowledged, but the importance of acknowledgement to funding sources may not be fully recognised by authors. The Wellcome Trust already uses the information from the ROD on the output from its investments to determine funding priorities, and others are likely to follow suit. These methods may, however, underestimate researchers' output (Black & Davies, 1999), as some journals and other types of publication are not included on the ROD. We hope that other measures of research quality will be developed and evaluated to be used in conjunction with ROD data. The acknowledgement of sources of funding is also important because of the potential for conflict of interest, concern about which is intensifying, particularly with respect to the authors of randomised controlled trials (Davidoff *et al*, 2001). We agree with Richard Smith, editor of the *BMJ*, who

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has suggested that such conflicts of interest are almost universal in medicine, and that disclosure should be the main strategy for managing them (Smith, 2002).

DECLARATION OF INTEREST

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