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Internet information-seeking in mental health

Population survey

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Background A major use of the internet is for health information-seeking. There has been little research into its use in relation to mental health.

Aims To investigate the prevalence of internet use for mental health information-seeking and its relative importance as a mental health information source.

Method General population survey. Questions covered internet use, past psychiatric history and the 12-item General Health Questionnaire.

Results Eighteen per cent of all internet users had used the internet for information related to mental health. The prevalence was higher among those with a past history of mental health problems and those with current psychological distress. Only 12% of respondents selected the internet as one of the three most accurate sources of information, compared with 24% who responded that it was one of the three sources they would use.

Conclusions The internet has a significant role in mental health information-seeking. The internet is used more than it is trusted.

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The internet is increasingly used as a source of information on health issues (Powell & Clarke, 2002; Baker *et al*, 2003). Previous work on the internet and mental health has examined the use of internet communities (Powell *et al*, 2003), developed and evaluated online interventions such as internet-based therapy (Christensen *et al*, 2004; Griffiths *et al*, 2004; Andersson *et al*, 2005) and assessed the quality of information on mental health websites (Griffiths & Christensen, 2000). There has been surprisingly little work measuring internet use to find mental health information; in particular, no previous study has investigated the prevalence of mental health-related internet use among the general population, and among people with mental health problems in the community. We therefore undertook a questionnaire survey of a representative sample of the population regarding their use of the internet for information related to mental health issues. Cross-sectional surveys are useful in quantifying the views of a large number of people in a relatively cheap and timely manner. Such surveys have been used successfully in previous research into information-seeking (Case, 2002).

METHOD

Survey method

A computer-generated random sample of individuals aged 18 years or over was selected from the database of Oxfordshire general practice patients. Ethical approval was obtained from the Oxford Psychiatric Research Ethics Committee and the host institution ethics committee, and patients' general practitioners were notified. A self-completion postal questionnaire was designed based on the results of a literature review and a qualitative interview study of 36 individuals concerning mental health information needs and use of the internet. Several questions investigated internet use, both in general and with respect to mental health issues. To investigate the relative frequency of use of the internet and its trustworthiness, respondents identified the three sources of mental health information they would be most likely to use, and the three sources that they regarded as the most accurate. This determined how many people listed the internet as one of their top three choices. The item responses for these lists were based on the interview results and literature review, and were refined during pre-testing. We avoided item response bias by reversing the item order in 50% of the surveys.

The survey also included demographic questions, a question on previous psychiatric history and the 12-item General Health Questionnaire (GHQ–12; Goldberg, 1972). This is a validated self-completion instrument to assess current mental health status, chosen for its brevity and validity. The layout and appearance of the questionnaire were informed by best practice in questionnaire design (McColl *et al*, 2001). It was brief, to encourage a high response rate (Edwards *et al*, 2002). Survey pre-testing and piloting were undertaken with purposive samples of the general population.

To detect a 25% difference in use of the internet for health information between those who did and those who did not have current experience of mental health problems, with 80% power and 5% significance, the survey sample required 1800 individuals (assuming that there is a 50% response rate, 45% use the internet, 60% of these have used it for health information and 25% have some current experience of mental health problems). It was therefore mailed to 1800 potential respondents. Two duplicate mailings and one postcard reminder were sent following the initial mailing, and respondents could opt to be entered in a prize draw.

Analysis

Data were double-entered. Responses were confidential and data for analysis were anonymised. The Statistical Package for the Social Sciences version 13.0 for Windows and StatsDirect version 2.4.5 (StatsDirect Ltd, Sale, Cheshire, UK; http://www.statsdirect.com) were used for data analysis. To determine health status the GHQ–12 scores of respondents were calculated using the standard GHQ scoring method (Goldberg & Williams, 1988); a

cut-off score of 2 or more indicated the presence of psychological distress (Goldberg, 1972). Univariate significance testing was carried out using chi-squared difference in proportions. Multivariate logistic regression explored the relationship between internet use, current mental health status (GHQ–12 score), past psychiatric history and socio-demographic variables. Except where stated, all P values refer to χ^2 comparisons of proportions.

RESULTS

Response rates

A total of 917 replies were received. After exclusion of patients who had died (n=13) and surveys returned unopened as 'not known at this address' (n=213), the adjusted response rate was 58.3% (917/1574). Respondents were significantly more likely to be female ($P<0.001$), older ($P<0.001$; unpaired t-test), and to come from less deprived areas ($P<0.001$; Mann–Whitney U-test) than non-respondents. The predominance of female respondents was more marked in younger age-groups.

Sample characteristics

The median age-group was 46–55 years for both men and women. There were 46.0% men and 54.0% women in the respondent sample. The mean GHQ–12 score was 1.8. Overall, 34.0% of respondents (n=312) had some evidence of current mental health disturbance (GHQ–12 scores of 2 or more) and 20.1% of respondents (n=184) had mental health disturbance rated as high or severe (GHQ–12 scores of 4 or greater). Of the sample, 18.2% had a self-reported history of significant mental health problems (166 out of 910 who answered this question), defined as a mental health issue or problem that had led to a consultation with a doctor or other health professional. There was a gender difference, with 15.7% of men (65/415) and 20.9% of women (101/484) reporting such history (P=0.039).

Internet use

Of the total sample, 58.8% reported ever having used the internet (539/917). There was no difference by gender, with 59.9% men (249/416) and 58.2% women (284/488) having used the internet (P=0.59). There was a large and significant difference by age, with 84.5% of respondents aged 45 years and under (299/354) reporting ever having used the internet $v.$ 42.9% (240/560) of those aged 46 years and over ($P<0.001$). There was also a large and significant difference by level of educational attainment, with 37.9% (153/404) of those who did not have qualifications at A-level standard or above having used the internet, compared with 85.0% (335/394) of those who had this qualification or above ($P<0.001$). Of the whole sample, 37.4% (343/917) had used the internet for general health information ('finding out about any aspect of health or healthcare'). This represented 63.6% of those who had ever used the internet. There was no relationship between general internet use or health-related internet use and either current mental health status (GHQ–12 score) or having a previous episode of mental illness, once the effects of age and educational attainment were controlled for using logistic regression. For all regression analyses the effects of GHQ–12 caseness and of past psychiatric history were examined separately, owing to the lack of independence of these variables.

Use of the internet to find out about a mental health issue

Of the whole sample, 10.6% (97/917) had used the internet to find out about mental health, representing 18.0% (97/539) of all people who had ever used the internet. The equivalent figures were 15.1% for respondents with GHQ–12 scores of 2 or more (22.8% of those who had internet access) and 20.5% for respondents with a past history of mental health problems (31.5% of those who had internet access). Differences by age and educational level disappeared after allowing for differential access to the internet. Differences by past psychiatric history and GHQ–12 status remained statistically significant after allowing for internet access once the effects of age, gender and educational level were controlled for (Table 1). This analysis showed that internet users with current experience of mental health distress were more likely to have used the internet to find information about a mental health issue than those without current mental health distress (OR=1.82, 95% CI 1.14–2.89, P=0.012) and those with a past history of a serious mental health problem were more likely to have used the internet for this purpose than those with no such history (OR=2.83, 95% CI 1.71–4.68, $P<0.001$).

Nine of the respondents had used the internet to chat (using live interaction in a chatroom or via instant messenger) with someone else about mental health issues (1.0% of the whole sample, 1.7% of internet users). These were four men and five women with a wide spread of age-group (18–75 years) and educational attainment (O-levels to degree). All nine had current mental health distress (GHQ–12 score of 2 or above) and five had experienced a serious mental health problem in the past.

Relative importance of the internet as a source of mental health information

Respondents were asked to select three sources they believed provided the most accurate information on mental health issues. Table 2 shows that 12.1% selected the internet as one of the top three most accurate sources of information on mental health issues. For the whole population and for those with and without current mental health problems, the results clearly demonstrate the trust put in health professionals, with mental health workers and general practitioners being rated the most accurate sources. There was no major difference by GHQ–12 caseness (χ^2=11.74, d.f.=12, P=0.47). Third place was taken by leaflets produced by the National Health Service (NHS) or by voluntary organisations and charities. Fourth ranking was 'someone else with the same mental health problems', and this received relatively more votes from people with mental health problems. The internet was ranked eighth overall, and sixth by people with mental health problems, although the scoring between the fifth- and eighth-ranked sources was very close. There was a gender difference (χ^2=31.76, d.f.=12, $P<0.01$), explained by mental health professionals being ranked ahead of general practitioners by women, whereas men ranked general practitioners slightly ahead of mental health professionals.

Respondents were also asked to indicate which three sources of information they would be most likely to use if they were seeking information on a personal mental health issue. Table 3 shows that 24% of both the general population and those with current mental health distress indicated that the internet was one of the three sources they would use, suggesting

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Table 1 Use of the internet for information on health issues and on mental health issues: logistic regression investigating explanatory variables among internet users (n=539)

	Use of internet for health information		Use of internet for mental health information	
	Odds ratio (95% CI)	*P*	Odds ratio (95% CI)	*P*
Analysis with variables GHQ–12 score, age, gender and educational level				
Age 45 years or under	1.11 (0.75–1.65)	0.59	0.94 (0.58–1.53)	0.81
Male	0.82 (0.56–1.20)	0.31	0.77 (0.48–1.24)	0.28
Educated to A-level or above	1.57 (1.05–2.34)	0.03	1.11 (0.67–1.85)	0.68
GHQ–12 score ⩾2	1.03 (0.70–1.52)	0.87	1.82 (1.14–2.89)	0.01
Analysis with variables past psychiatric history, age, gender and educational level				
Aged 45 years or under	1.14 (0.78–1.68)	0.52	1.05 (0.64–1.71)	0.86
Male	0.84 (0.57–1.24)	0.38	0.83 (0.51–1.36)	0.46
Educated to A-level or above	1.57 (1.05–2.34)	0.03	1.17 (0.70–1.94)	0.56
Previous consultation for mental health problems	1.32 (0.82–2.12)	0.25	2.83 (1.71–4.68)	<0.001

GHQ–12, 12-item General Health Questionnaire.

Table 2 Proportion of respondents identifying sources of information providing the most accurate information on mental health issues

Rank	Source of information	All respondents (n=917) %	Respondents scoring 2 or more on GHQ–12 (n=312) %
1	Mental health professional	59.7	60.6
2	General practitioner	53.8	52.9
3	Leaflets from NHS or voluntary organisations or charities	29.8	29.5
4	Someone else with the same mental health problem	15.3	17.9
5	Television or radio programmes	15.0	15.1
6	Friend or family member	13.4	12.5
7	Newspaper or magazine articles	13.1	12.8
8	Internet	12.1	13.1
9	Charity or voluntary organisation telephone helpline	7.6	9.3
10	Home medical encyclopaedia or similar books	7.1	8.0
11	NHS Direct telephone helpline	6.8	6.1
12	Other	4.1	2.6
13	Alternative or complementary therapist	3.5	5.1

GHQ–12, 12-item General Health Questionnaire; NHS, National Health Service.

the internet is used more than it is trusted as an accurate medium. Table 3 also shows that general practitioners and mental health workers not only were considered the most accurate sources, but also were the most likely to be used. The internet was rated fourth overall and third equal by those with mental health problems: there was no major difference by GHQ–12 caseness (χ^2=9.72, d.f.=13, P=0.72).

DISCUSSION

The internet is playing a significant part in mental health information-seeking. It has been used as a source of mental health information by over 10% of the general population and by over 20% of those with a history of mental health problems. Eighteen per cent of those who had ever used the internet had used it for mental health information. The relative importance of the internet was demonstrated by 24% of the study population identifying it as one of the top three information sources they would use if they were to have a mental health problem. This contrasts with the 12% of the study population who regarded the internet as one of the top three sources providing the most accurate information. Other work has also found that the internet is ranked higher as a source to use than as a source to trust, and supports the primacy of health professionals as the most used and the most trusted sources of information for health problems (Pennbridge *et al*, 1999).

We believe that this is the first study to investigate the population prevalence of internet use for mental health information and the relative importance of the internet as a mental health information source. There has been work on internet use for general health matters, which shows similar findings to our survey with approximately 40% of internet users having accessed health information (Baker *et al*, 2003).

Limitations of the study

Cross-sectional sampling can only identify the views and reported behaviour of respondents at one point in time. Further work observing actual behaviour or following individuals prospectively might be helpful. The response rate was moderate despite the use of duplicate mailings, postcard reminders and entry into a prize draw.

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Non-respondents to the GHQ–12 are known to have a higher prevalence of psychiatric morbidity than respondents (Williams & Macdonald, 1986). Because of the nature of the NHS, general practice registers in the UK are generally considered to provide adequate population samples; however, they are known to suffer from 'list inflation', whereby people who have been registered with a general practice can remain registered after dying or moving away (Carr-Hill & Roberts, 1999). On average non-responders were 5.5 years younger, from areas with slightly higher deprivation scores, and were more likely to be male. These are known associations with population survey non-respondents (Purdon & Nicolaas, 2003). However, it is difficult to judge what effects non-response bias might have had on the findings: for example, internet use is more common in younger age-groups (over-represented among non-respondents) but also in less deprived groups (under-represented among non-respondents). For generalisability, it is reassuring that the prevalence of general internet use is in line with the findings of other UK population surveys (Dutton *et al*, 2005).

Implications

Most people with minor mental health problems seek help from family and friends rather than professionals (Oliver *et al*, 2005). Practitioners and policy makers must also take note of the role of the internet in help-seeking behaviour. Almost a third of internet users with a history of psychiatric disorder had used the internet to seek mental health information. A few respondents had used the internet for live chat with others about mental health issues and this is an area likely to see future expansion. As an information source the internet has advantages of privacy, anonymity and widespread accessibility at low or no cost (Cline & Haynes, 2001). However, it appears that the public also recognises the frequently expressed concern of professionals regarding the accuracy of online information (Christensen & Griffiths, 2000). The internet is mostly unregulated, but there are voluntary initiatives to encourage quality assessment of health information sites (Risk & Dzenowagis, 2001; Griffiths & Christensen, 2005). However, poor-quality information has always existed in various forms, and there have been only a few isolated case reports of individuals coming to harm from online information (Crocco *et al*, 2002). The need is for a better understanding of how individuals actually use the internet, what they do with the information they find and how internet help-seeking relates to other help-seeking behaviour. By examining the role of the internet in meeting information needs, psychiatric services and practitioners could harness the internet as a tool to educate and support patients. This is particularly important in mental health, where the internet may have a role in supporting those for whom stigma inhibits help-seeking through more traditional routes (Berger *et al*, 2005).

Table 3 Proportion of respondents identifying sources of information on mental health issues that they would be most likely to use

Rank	Source of information	All respondents (n=917) %	Respondents scoring 2 or more on GHQ–12 (n=312) %
1	General practitioner	74.2	73.1
2	Mental health professional	57.1	57.1
3	Leaflets from NHS or voluntary organisations or charities	27.7	24.0
4	Internet	23.6	24.0
5	Friend or family member	18.0	18.3
6	Someone else with the same mental health problem	13.0	13.8
7	Home medical encyclopaedia or similar books	11.7	9.9
8	Charity or voluntary organisation telephone helpline	8.8	9.3
9	NHS Direct telephone helpline	7.0	8.0
10	Newspaper or magazine articles	6.3	8.0
11	Alternative or complementary therapist	5.5	6.4
12	Television or radio programmes	3.5	3.5
13	Other	1.3	0.6

GHQ–12, 12-item General Health Questionnaire; NHS, National Health Service.

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REFERENCES

Andersson, G., Bergström, J., Holländare, F., *et al* (2005) Internet-based self-help for depression: randomised controlled trial. *British Journal of Psychiatry*, **187**, 456–461.

Baker, L., Wagner, T. H., Singer, S., *et al* (2003) Use of the internet and e-mail for health care information: results from a national survey. *JAMA*, **289**, 2400–2406.

Berger, M., Wagner, T. H. & Baker, L. C. (2005) Internet use and stigmatized illness. *Social Science and Medicine*, **61**, 1821–1827.

Carr-Hill, R. & Roberts, D. (1999) Population figures for capitation formulas need to be designed differently. *BMJ*, **318**, 1145.

Case, D. O. (2002) *Looking for Information. A Survey of Research on Information Seeking, Needs, and Behaviour.* San Diego: Academic Press.

Christensen, H. & Griffiths, K. (2000) The internet and mental health literacy. *Australian and New Zealand Journal of Psychiatry*, **34**, 975–979.

Christensen, H., Griffiths, K. M. & Jorm, A. F. (2004) Delivering interventions for depression by using the internet: randomised controlled trial. *BMJ*, **328**, 265.

https://doi.org/10.1192/bjp.bp.105.017319 Published online by Cambridge University Press

Cline, R. J. & Haynes, K. M. (2001) Consumer health information seeking on the internet: the state of the art. *Health Education Research*, **16**, 671–692.

Crocco, A. G., Villasis-Keever, M. & Jadad, A. R. (2002) Analysis of cases of harm associated with use of health information on the internet. *JAMA*, **287**, 2869–2871.

Dutton, W. H., Di Gennaro, C. & Millwood Hargrave, A. (2005) *The Internet in Britain: The Oxford Internet Survey (OxIS)*. Oxford: Oxford Internet Institute.

Edwards, P., Roberts, I., Clarke, M., *et al* (2002) Increasing response rates to postal questionnaires: systematic review. *BMJ*, **324**, 1183.

Goldberg, D. P. (1972) *The Detection of Psychiatric Illness by Questionnaire*. London: Oxford University Press.

Goldberg, D. P. & Williams, P. (1988) *A User's Guide to the General Health Questionnaire*. Windsor: nferNelson.

Griffiths, K. M. & Christensen, H. (2000) Quality of web based in formation on treatment of depression: cross sectional survey. *BMJ*, **321**, 1511–1515.

Griffiths, K. M. & Christensen, H. (2005) Website quality indicators for consumers. *Journal of Medical Internet Research*, **7**, e55.

Griffiths, K. M., Christensen, H., Jorm, A. F., *et al* (2004) Effect of web-based depression literacy and cognitive–behavioural therapy interventions on stigmatising attitudes to depression: randomised controlled trial. *British Journal of Psychiatry*, **185**, 342–349.

McColl, E., Jacoby, A., Thomas, L., *et al* (2001) Design and use of questionnaires: review of best practice applicable to surveys of health service staff and patients. *Health Technology Assessment*, **5**, 31.

Oliver, M. I., Pearson, N., Coe, N., *et al* (2005) Help-seeking behaviour in men and women with common mental health problems: cross-sectional study. *British Journal of Psychiatry*, **186**, 297–301.

Pennbridge, J., Moya, R. & Rodrigues, L. (1999) Questionnaire survey of California consumers' use and rating of sources of health care information including the internet. *Western Journal of Medicine*, **171**, 302–305.

Powell, J. & Clarke, A. (2002) The WWW of the World Wide Web: who, what, and why? *Journal of Medical Internet Research*, **4**, e4.

Powell, J., McCarthy, N. & Eysenbach, G. (2003) Cross-sectional survey of users of internet depression communities. *BMC Psychiatry*, **3**, 19.

Purdon, S. & Nicolaas, G. (2003) *Trends in Non-response on Social Surveys – The Survey Context for the One Number Census*. London: National Centre for Social Research.

Risk, A. & Dzenowagis, J. (2001) Review of internet health information quality initiatives. *Journal of Medical Internet Research*, **3**, e28.

Williams, P. & Macdonald, A. (1986) The effect of non-response bias on the results of two-stage screening surveys of psychiatric disorder. *Social Psychiatry*, **21**, 182–186.

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