Journal of Affective Disorders 174 (2015) 665–671

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research report

Do patients' illness beliefs predict depression measures at six months in primary care; a longitudinal study

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ARTICLE INFO

Article history:
Received 30 August 2014
Received in revised form
1 December 2014
Accepted 2 December 2014
Available online 11 December 2014

Keywords:
Depression
Illness beliefs
Longitudinal study
Primary care

ABSTRACT

Background: Depressive disorders are prevalent and costly but there is a lack of evidence on how best to select treatments for mild to moderate depression in primary care. Illness beliefs have been shown to affect the outcome from physical illness, but there is limited information on the beliefs of patients who are depressed.
Aims: To measure patients' beliefs about depression at baseline and determine whether these relate to depression severity at six months.
Methods: Primary care patients with a recently diagnosed episode of depression completed the Beliefs about Depression Questionnaire and depression severity scores at baseline. The primary outcome was the change in depression severity score on the Hospital Anxiety and Depression Scale after six months.
Results: 227/292 (78%) participants completed follow-up questionnaires. Initial severity of depression at baseline, and particular beliefs about the causes, consequences and timeline of depression predicted poorer outcomes, whereas a belief in using exercise or keeping busy to treat depression predicted improved outcomes. Prescription of antidepressants did not appear to mediate these relationships.
Limitations: This was an initial study using a new validated questionnaire and it cannot be predicted whether these results are representative or would be reproduced in other populations. Although participants were primary care patients whose GP (General Practitioner) had coded as having a new incident episode of depression in the preceding six months, 43% of participants stated they had been depressed for more than a year. Sufficient participants were recruited to ensure the study was adequately powered but participation rate was 30%, raising the possibility of response bias.
Conclusions and clinical relevance: Illness beliefs may help to predict outcomes in depression and therefore assessing and addressing patients' beliefs about their depression may enhance treatment.

1. Introduction

Depressive disorders are prevalent and costly (McManus et al., 2009). In the UK 80–90% of patients are treated entirely by their General Practitioner (GP) (Layard, 2004). Costs are rising (Prescriptions Pricing Authority, 2005), in part due to year on year increases in the number of patients on long term repeat prescriptions of antidepressants (Moore et al., 2009). Illness beliefs have been shown to affect the outcomes of physical illnesses (Hagger and Orbell, 2003) and therefore could also affect outcomes in depression. However to date only a limited amount of work has been published on beliefs and outcome in depression, with inconsistent findings (Brown et al., 2001; Cabassa et al., 2008; Fortune et al., 2004). Qualitative interviews revealed that beliefs about the causes and the perceived efficacy of treatments for depression can vary widely between patients and are often very different to the beliefs of their GPs (Johnston et al., 2007). In a previous cross-sectional study using a USA (United States of America) questionnaire, we found that beliefs predicted a substantial proportion of adherence to antidepressants (Lynch et al., 2006). The primary aim of this longitudinal study was to determine whether patients' beliefs measured using the validated Beliefs about Depression Questionnaire (BDQ) (Lynch et al., 2011) predicted severity of depression at six months follow-up, after adjusting for depression at baseline. Secondary aims were to determine whether beliefs about depression at baseline predicted

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http://dx.doi.org/10.1016/j.jad.2014.12.005
0165-0327/

anxiety levels, social functioning, medication use, and use of GP services.

Hypothesis: Patients' beliefs about depression influence outcome from depression, either directly or via adherence to medication.

2. Methods

2.1. Participants

Participants were recruited from 21 general practices in the South of England who were members of the National Institute for Health Research (NIHR) Primary Care Research Network (PCRN). Inclusion criteria were all registered patients aged between 18 and 65 years with a recorded new diagnosis of depression in the previous six month. Patients were identified via computerized records systems and individual practices were asked to identify the search terms most relevant to their coding practices. Exclusion criteria were patients who were terminally ill, currently in hospital, unable to understand written English, or, in the GP's opinion, likely to be distressed by receiving an unsolicited questionnaire about mental health. Patients with co-morbid anxiety or other mental disorders were not excluded unless the GP believed they would be distressed by receiving questionnaires.

At baseline, anonymized data were collected from the practice computerized medical records on age and gender for all those invited to take part. Sample size for ANCOVA (analysis of covariance) was calculated with 90% power, 1% (two sided) significance, recruitment from 10 general practices and an estimated intraclass correlation coefficient of the outcome measure of 0.1. This resulted in a minimum of 30 patients needing to be recruited overall. However, the same sample was used to verify the validity and reliability of the questionnaire (Lynch et al., 2011) and hence the overall sample size was calculated for this comparison, presuming 95% significance, 80% power and a sample correlation of 0.2 giving a sample size of 194 participants (Centre for Clinical research and Biostatistics, www.cct.cuhk.edu.hk 2014).

2.2. Data collection

Self-complete questionnaires were mailed to potential participants at baseline and after six months, along with an invitation letter from the practice, a patient information sheet, a consent form and a reply paid envelope. All completed questionnaires were identified by code numbers only, to protect patient anonymity. Reminders were sent out to non-responders after one month. To encourage participation a £1 high street shopping voucher was sent with the initial packs, and a further £5 voucher on completion of the six month questionnaires.

Predictor measures

i) *The Beliefs about Depression Questionnaire (BDQ)* (Lynch et al., 2011). This recently validated questionnaire was developed specifically to measure beliefs about depression and consists of 36 items conceptualized along the causes, cure/control, timeline and consequence dimensions of Leventhal's Common Sense Model (CSM) of illness representations (Leventhal et al., 2003). Individual items were grouped into the subscales derived during the development of the BDQ. Subscale scores were calculated for each individual participant by calculating mean scores of all the items related to that subscale e.g. the subscale score for *past events* is the mean of: 'Unresolved problems from the past', 'Problems from childhood', and 'Problems with relationships (family, partner or friends)'. There were 16 subscales in total, five describing perceived causes for depression, two timeline, six describing different cure/control beliefs and three describing perceived consequences. Subscales for *bereavement* as a causal factor and *control through GP medication* consisted of a single item only, all other subscales were made up of between two and four items. The CSM dimensions for perceived illness identity and emotional representations were not used in this analysis as it was considered that they would be confounded with severity of depression. The BDQ was derived from the Illness Perception Questionnaire-Revised (IPQ-R), but is a specific questionnaire adapted to measure specific illness beliefs as suggested by the original authors of the IPQ-R (Moss-Morris et al., 2002) and answers the criticism that a generic questionnaire will not give sufficient detail for a specific illness (French and Weinman, 2008).

ii) *A bespoke demographic questionnaire* was administered at baseline only, including questions on participants' age, gender, social situation (partner, children, work) and self-reports of current depression status, treatment and well-being, using questions from the Centres for Disease Control Health Days Measure (Centers for disease control and prevention, 2000).

Measures at six months

i) *Hospital Anxiety and Depression Scale (HAD)* (ZIgmond and Snaith, 1983). The depression subscale of this measure (HAD-D) was the primary outcome, and the anxiety subscale (HAD-A) was a secondary outcome. Assessed at baseline and six months.

ii) *Patient Health Questionnaire (PHQ-9)* (Ogden, 2004). This second validated measure of depression severity, which has a greater emphasis on somatic symptoms than the HAD-D, was included to allow comparison with other studies. Assessed at baseline and six months.

iii) *Work and Social Adjustment Scale (WSAS)* (Sherwood et al., 2007). This five item validated scale for assessing the impact of illness on work and social functioning was used as a secondary outcome measure. Assessed at baseline and six months.

iv) *Use of Services Questionnaire.* This was used at the six months follow up only. It was adapted from Knapp's Client Services Receipt Inventory (2012) (Kendrick et al., 2009a), and included questions on participants' use of GP services and other services, their use of medication, and on what they felt had helped their depression. The Healthy Days Measure (Centers for disease control and prevention, 2000) was repeated as part of this questionnaire.

v) Practice clerical staff also collected information from computerized records over the six months of the study on numbers of participant contacts with the practice, numbers of antidepressant prescriptions issued, and numbers of referrals for psychiatric or psychological assessment or treatment.

2.3. Statistical analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS Inc., 2008) version 17 (SPSS Inc., 2008).

Demographic data and depression scores

Descriptive statistics were used to characterize the data, including frequencies, means and histograms to check for normality. Chi-squared and independent *t*-tests were used to determine any changes in the demographic profile of respondents at six months compared to baseline.