

## Understanding depression associated with chronic physical illness:

a Q-methodology study in primary care

### Abstract

#### Background

Detection of depression can be difficult in primary care, particularly when associated with chronic illness. Patient beliefs may affect detection and subsequent engagement with management. Q-methodology can help to identify viewpoints that are likely to influence either clinical practice or policy intervention.

#### Aim

To identify socially shared viewpoints of comorbid depression, and characterise key overlaps and discrepancies.

#### Design and setting

A Q-methodology study of patients registered with general practices or community clinics in Leeds, UK.

#### Method

Patients with coronary heart disease or diabetes and depression from three practices and community clinics were invited to participate. Participants ranked 57 statements about comorbid depression. Factor analyses were undertaken to identify independent accounts, and additional interview data were used to support interpretation.

#### Results

Thirty-one patients participated; 13 (42%) had current symptoms of depression. Five accounts towards comorbid depression were identified: overwhelmed resources; something medical or within me; a shameful weakness; part of who I am; and recovery-orientated. The main differences in attitudes related to the cause of depression and its relationship with the patient's chronic illness, experience of shame, and whether medical interventions would help recovery.

#### Conclusion

There are groups of patients who do not perceive a relationship between their depression and chronic illness; they may not understand the intention behind policy initiatives to identify depression during chronic illness reviews. Tailoring detection strategies for depression to take account of different clusters of attitudes and beliefs could help improve identification and personalise management.

#### Keywords

chronic disease; depression; general practice; illness beliefs; screening.

### INTRODUCTION

Comorbid depression in chronic physical illness is associated with increased mortality, symptom burden, functional impairment, and use of health care. It also undermines self-care and adherence to treatment.<sup>1,2</sup>

National guidance in the UK recommends systematic case-finding and the Quality Outcomes Framework (QOF; a pay-for-performance scheme for primary care),<sup>3</sup> formerly incentivised case-finding, in all patients with a diagnosis of coronary heart disease (CHD) or diabetes, for depression. However, dissatisfaction with case-finding<sup>4,5</sup> led to the discontinuation of this incentive leaving a dilemma: the problem of comorbid depression is widely recognised, but the appropriate service-level response in primary care remains unclear.

One factor influencing detection is how people with chronic illness understand depression.<sup>6</sup> For example, patients do not consistently talk about depression as an illness-like disorder and are unsure about seeking medical help. They feel a personal responsibility to overcome depression. Efforts to engage patients need to accommodate beliefs about how people view themselves, their own responsibility for improvement, and negative views of medical treatment.

Q-methodology has been used to study health beliefs,<sup>7-9</sup> and can usefully explore and uncover viewpoints on an illness.

Understanding such viewpoints can help individualise care. Therefore, this study aimed to characterise socially-shared viewpoints on comorbid depression and chronic physical illness.

### METHOD

Invitations were posted to patients from three practices and community clinics in Leeds who had depression within the previous 5 years and one or both of CHD or diabetes. Participants were selected to ensure a diversity of age, sex, ethnic group, and illness type factors known to influence beliefs.<sup>6,10</sup> Sample size is normally small in Q-methodology, but as diverse as possible.<sup>11</sup> Patients were excluded who were actively suicidal or terminally ill, or those with dementia, learning difficulties, or were unable to read and speak English. Participants completed Hospital Anxiety and Depression Score questionnaires.

Q-methodology requires participants to rank a set of statements (the 'Q-set'). The Q-set of 57 statements was developed from a systematic review<sup>10</sup> and an interview study,<sup>6</sup> which explored patients' understanding of depression associated with chronic illness. Participants ranked the statements from +5 (strongly agree) to -5 (strongly disagree) on a grid (the 'Q-sort') that forces participants to prioritise their opinions. The Q-sort process took place at the participant's GP surgery or home with the researcher present, followed immediately by an audiotaped post-sort

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## How this fits in

Depression associated with a chronic physical illness increases mortality and morbidity from both conditions. Patients may hold beliefs about depression associated with chronic physical illness that are incompatible with screen and treat models. Identifying socially-shared viewpoints can help to improve provision of individualised care and concordance with management plans.

interview to explore reasons for the placing of statements.

The Q-sorts were entered into Q-methodology software (PQMethod, version 2.09). Q-methodology uses factor analytic techniques to identify how individuals' viewpoints cluster together by an inversion of the usual factor analytic approach.<sup>12</sup> The first stage involves calculation of pair-wise correlations between all the statement scores for each Q-sort; the resultant data matrix was then subjected to a centroid factor analysis followed by orthogonal Varimax rotation, and then a by-hand rotation. Scree tests, Eigenvalues, study variance, and factor correlation were all used as decision-making criteria to determine the number of factors to include. The aim was for the final solution to include as many Q-sorts as possible. A 5-factor solution which explained 42% of the total variance was found to produce the best fit in terms of producing interpretable accounts recognisable from comments made during the sorting procedure.

After rotation, exemplar Q-sorts were identified. Only Q-sorts with a loading of 0.34 ( $P < 0.01$ ) or higher on one factor were retained.<sup>12</sup> For each factor, the total weighted scores for each statement in the Q-set were converted to z-scores, giving a list of statements ranked in size order, and from this an ideal factor array was produced for each factor.

Interpretation of each factor array began with identifying the statements that were ranked most positively and negatively, and the statements that were ranked in a significantly different fashion compared with the other factors. This identified the important issues about which factor is polarised and how it is polarised relative to the other factors. The post-sort interview data were coded and used to help interpret the factor arrays. Bipolar factors were interpreted from both the positive and negative poles. Statements that did not

distinguish between factors (consensus statements) were also identified.

## RESULTS

Of the 47 people who responded to the invitation, 31 met the inclusion criteria and were recruited; 28 from general practices and three from community clinics (Table 1).

Two statements did not distinguish significantly between any pair of factors and therefore reflected common points of view. All groups rated 'Being around me will make others depressed' as 0 or +1, reflecting a belief that no group felt strongly about. All groups ranked 'The best thing for my depression is to see a health professional' as slightly agree (scores of +1 and +2). Appendix 1 provides the statements and factor array results for each account.

### Account 1: overwhelmed resources

This factor had eight defining sorts (4 male, 4 female) and the largest age range (31–80 years). Participants were white British, and a mixture of working and non-working people. They had none-to-mild symptoms of depression and viewed their depression as a non-blameworthy illness; anyone who had experienced what they had would become depressed. Their physical illnesses were the main cause but against a background of a difficult life. Their finite resources had been overwhelmed:

*'At this time my mother were poorly, she had Alzheimer's so I went to see somebody and sort of tell them about me mam which is part of, when you look back there are a lot of little things that, what's it called? The straw that broke the camel's back and I just burst out crying.'* (Participant 24, male)

Their resources included support from friends and while they had previously considered suicide, they did not act on those thoughts. They were not prone to depression and did not consider themselves weak for having depression; they therefore did not perceive any stigma:

*'In my darkest times, I just felt like driving the car off a bridge, ending it all, life's not worth it, but then I've got my daughters and my wife and I thought that's just stupid, you don't want to do anything like that.'* (Participant 29, male)

Despite the external cause of their depression, this group preferred to manage depression themselves and saw it as partly under their own control. They had found therapies such as antidepressants and

**Table 1. Demographic details of participants taking part in the Q-sort**

Attribute	n (%)
<b>Sex</b>	
Male	15 (48)
<b>Age group, years</b>	
18–30	0 (0)
31–50	7 (23)
51–64	11 (35)
65–80	10 (32)
>81	3 (10)
<b>Ethnic group</b>	
White British	29 (94)
Asian Pakistani	1 (3)
Black Caribbean	1 (3)
<b>Working status</b>	
Employed	6 (19)
<b>Chronic physical illness</b>	
Diabetes	17 (55)
Coronary heart disease	8 (26)
Both	6 (19)
<b>HADS</b>	
None	18 (58)
Mild	5 (16)
Moderate	8 (26)
Severe	0 (0)

HADS = Hospital Anxiety and Depression Score.

psychotherapy beneficial, but believed these alone would not cure their depression.

#### **Account 2: something medical or within me**

This factor had four defining sorts (2 male, 2 female), one of which was negatively correlated. They were all white British, aged >65 years, with no current symptoms of depression.

Unsure why they had become depressed with no precipitating life event, they therefore turned to internal causes such as a chemical change in their brains or their personality. Physical health problems were not seen as related to their depression.

The internal cause meant the depression was partly under their control and they preferred to manage things themselves, although had all seen a GP about it. At the time of the study all felt that the depression had resolved. The diagnosis was not important but medication was helpful. Psychotherapy made their problems worse; partly because they did not have any issues they needed resolving. Unlike Account 1, they did not have much social support and felt they had to cope with things on their own, although suicide was not seen as an option:

*'Cause doctor did say it was something that my brain wasn't making so that's why she put me on that. It does keep me on a pretty even keel.'* (Participant 17, female)

The negatively-correlated person in this factor believed adverse life events, including physical illness, had contributed to their depression, but unlike Account 1, they did not understand why they had depression. It was not under their control and they preferred to seek help to manage it:

*'Well, I'd not long been made redundant so I had plenty of money in the bank behind me so there was no reason for it. All the family were well and healthy, so just couldn't feel any reason for it.'* (Participant 21, female)

#### **Account 3: a shameful weakness**

Just three sorts (2 male, 1 female) defined this factor. This group were all aged >51 years, not working, and white British. Current symptoms of depression ranged from none to moderate.

Unlike the previous groups, this group had suffered previous episodes of depression and did not view depression as an illness, but rather a weakness that they could not control and of which they were ashamed:

*'I am ashamed; I am, because I've always been so strong-minded so strong-willed.*

*And I shouldn't have got to this state. I shouldn't have allowed myself to get to this state.'* (Participant 9, female)

They had seen health professionals and taken medication but it had not helped. Despite this, they still wanted professional input. The internal weakness meant that treating the cause was not an option. Talking to a therapist did help; however, their depression would never be cured. This group found depression stigmatising and kept the diagnosis hidden. They had considered suicide and felt that lack of support was the reason.

#### **Account 4: part of who I am**

This factor comprised five sorts (2 male, 3 female). The group included one participant of Asian Pakistani origin, and all were aged between 31 and 80 years. Three participants were working, and current symptoms of depression ranged from none to mild.

Compared with the first two accounts, this group of people thought they were prone to depression; it was part of who they are. Unlike Account 3, it was hidden but not out of stigma but because it was out of character. They therefore managed the depression on their own and struggled to seek help:

*'People they see me as alright, but if they knew what went on behind my back they wouldn't, they'd be sorry for me but I don't want people to be sorry for me because they've their own lives to lead.'* (Participant 2, male)

Their depression was a result of both personality and life events, but, distinct from Account 1, they did not believe others would become depressed in similar situations. Unlike Account 3, they were not weak for having depression, seeing it as an illness they might have inherited. They had a close supportive social network which protected them from suicidal ideas, believing they had too much to live for, although they felt depression changed how others viewed them and upset their family:

*'People say he's a nice guy, he's so social but it's like an outburst, cause otherwise you would retreat into the background and be worried that people would wonder what was wrong with this guy, I can do that quite easily, but I'm not as good at disguising things now as when I was younger.'* (Participant 23, male)

Medical intervention was seen as a helpful adjunct to self-management.

Although incurable, their depression was cyclical and manageable.

**Account 5: recovery-orientated**

Factor 5 is bipolar, with two sorts positively correlated (1 female and 1 male) and three negatively (2 female and 1 male). All participants were aged >51 years, and the group included one participant of black Caribbean origin. Those with positive correlation had no current symptoms of depression, whereas those with negative correlation had mild to moderate depression.

This group focused on the various methods they could access to get better rather than the cause. As well as treating the physical illness, they had multiple ideas regarding recovery, including their religious faith. They preferred self-management and

tried to carry on with normal life. Medication and talking therapies were useful, but they did not need a formal diagnosis. Their depression started quickly with the onset of ill health and they saw it as resolving quickly too.

They had a close supportive network that helped them cope and so did not consider suicide. They had many explanations for the depression and struggled to pin it down to one coherent explanation:

*'I do feel better, I do definitely for I'm planning what I'm going to do, I'm going to play snooker more often for its exercise having to bend over a table, bending up and down, nice gentle exercise and then the fellas there we all sit and put the world to right. It is good.'* (Participant 20, male)

Conversely, the negatively-correlated participants did not see illness as a cause; it was a result of adverse childhood life events which shaped who they are. They had sought medical help many times but had found medical interventions ineffective and there was nothing they could do to help themselves recover; however, they still focused on what they could do next:

*'My depression started a very long time ago when I started to know what was happening to me. And it was trying to cope with it. From being abused, that's when it started.'* (Participant 10, female)

They felt unsupported by family and friends who became fed up with their frequent depressive episodes, and experienced stigma. They were ashamed and had attempted suicide to end their distress:

*'They can't accept the depression but they can accept the other things. They were all there in the hospital when I had my heart attack and they said that I might die, all my family were there. When I went into hospital with depression and feeling suicidal none of them were there.'* (Participant 27, female)

**DISCUSSION**

**Summary**

This study found five accounts about depression associated with chronic illness. Three important characteristics of these viewpoints were identified. First, the role chronic illness had in depression varied from being an overwhelming problem to having no relation to it, with depression explained by childhood trauma, chemical imbalance or personality. Second, differing

**Table 2. Suggested approaches for detection and treatment of depression associated with chronic physical illness by factor array**

Group	Main features to aid detection	Preferred treatment options
<b>Account 1: overwhelmed resources</b>	Sense of overwhelmed coping, physical illness the last straw Concerns regarding dependency on others in the future Good supportive network, less suicidal intention	Self-management and treating the physical illness preferred Uses their supportive network Willing to accept depression diagnosis and label Medical intervention helpful but does not cure the depression
<b>Account 2: something medical or within me</b>	Not chronic illness or life event-related, so prefers explanation regarding chemical imbalance Tries to cope with things on their own, little family support but not suicidal	Self-management preferred but accepts medication help with the chemical imbalance Psychotherapy not helpful Struggles to accept depression diagnosis and label
<b>Account 3: a shameful weakness</b>	Feelings of shame and self-dislike Believe they have a weak personality which leads to the depression Poor support network and considers suicide Worries about the stigma of a depression diagnosis	Prefers medical intervention but may have tried several treatments without success Talking therapies preferred to manage their personality which they see as the cause Depression label seen as stigmatising
<b>Account 4: part of who I am</b>	Hidden depression, will not admit their distress to those around them Feelings of this is not who they are as a person Has good supportive network and has things to live for	Supportive network helpful and will continue to socialise Medication and talking therapies seen as helpful but not curative Depression likely to come and go over time
<b>Account 5: recovery-orientated</b>	Multiple reasons for depression, including worrying about dying early with physical ill-health Prefers to talk about managing depression rather than reasons behind the depression Those who believe it is a result of childhood trauma are at risk of suicidal attempts	Self-management important but also accepting of medical interventions and faith as helping Does not want depression diagnosis as not helpful in recovery rather than worries about stigma Those who believe it is a result of childhood trauma may have tried many treatments without success and feel hopelessness regarding treatments

beliefs were noted about the role of medical intervention. Most accounts found medication helpful as it addressed their perceived cause or it helped with coping. However, some did not but were willing to try further treatments. Some accounts preferred self-management as well as accepting medical intervention. Third, the accounts differed in the importance they gave to supportive networks and not feeling shame, which appeared to protect some accounts from suicidal feelings. In contrast, two accounts from participants felt unsupported and ashamed and had considered suicide as a means of stopping the distress.

The consensus statements suggest that participants did not worry about bringing other people down and all accounts agreed that seeing a health professional was somewhat important.

### Strengths and limitations

Many participants had current symptoms of depression so the viewpoints expressed relate to current experience. The development of the Q-set from multiple sources ensured that the statements were as comprehensive as possible.

There were three main study limitations. First, recruiting from one city potentially limits generalisability, although it is difficult to identify any particular participant characteristics that are likely to be substantially different in populations elsewhere. Second, there were few non-white British participants. However, the two ethnic minority participants both had defining sorts for factor arrays, suggesting that the inclusion of more ethnic minority participants would not necessarily produce different viewpoints. The study included equal numbers of males and females of a range of ages. Most were not working, which is to be expected with significant current depression symptoms, physical ill health, and age. Third, the results on seeing health professionals as beneficial are not surprising given participant recruitment from practices with a diagnosis of depression.

### Comparison with existing literature

Q-methodology has been shown to be useful where there are conflicting priorities between doctors and patients. It can help identify where there is consensus and where there are likely to be barriers to either recommended clinical practice or policy intervention.<sup>13-15</sup> Bower *et al* found that individuals recognised synergies and antagonisms between comorbid conditions

and their management.<sup>16</sup> The present study also found participants accounts that viewed their comorbidities as interlinked and participants accounts that shared the viewpoint of having separate, unrelated illnesses. This may explain why those who do not perceive a connection may not understand the intention behind depression case-finding in chronic illness reviews.<sup>17</sup>

All viewpoints recognised that seeking help from a GP was only part of the solution, despite most having received treatment. Rogers *et al* found that although help was sought by depressed participants, medical intervention was found to be of relatively little significance when set against the magnitude of experienced problems.<sup>18</sup> The present study also suggests that people welcome self-management advice, recommended by NICE, to retain a sense of personal control.

Previous research has shown that older patients are resistant to antidepressant use.<sup>19-21</sup> The present study found most patients had taken medication, and saw it as helpful but did not see it as a cure.

### Implications for research and practice

Diagnosis of depression had associated stigma for some participants accounts, whereas others found it helpful to access help and social support. Clinicians may find it helpful to identify how patients feel about the label of depression being applied to them and use alternative language to increase detection. Identifying the support network appears to be important in terms of suicidal intent. By identifying those most at risk of suicide, extra support can be offered to those who most need it.

Table 2 shows the suggested optimal approaches to detection and preferred treatment options for each account. By asking questions regarding beliefs, it may be possible to determine which viewpoint a patient potentially identifies with and therefore tailor treatment, and to identify those at greater suicide risk and those at risk of a more chronic course to their depression.

Distinctive sets of viewpoints were found to be shared by patients with comorbid depression. The accounts differed in their beliefs on the cause, experience of shame and support, and what would help them recover. Q-methodology permits contextualisation of these beliefs in different clusters of like-mindedness that exist within primary care. To improve identification of depression in primary care, detection and treatment strategies must be tailored to these clusters to provide individualised care.

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### Ethical approval

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### Provenance

Freely submitted; externally peer reviewed.

### Competing interests

The authors have declared no competing interests.

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## Appendix 1. Q-set statements

Item wording	F1	F2	F3	F4	F5
1 I feel it's a sign of weakness to be depressed	-2	-1	5	-4	-2
2 People would blame me if they knew I was depressed	-2	-1	2	-3	1
3 My depression is due to a physical change in my brain	1	4	-4	1	3
4 I do not know why I am depressed	-1	3	-3	0	-3
5 I think that there is a religious explanation for my depression	-4	-1	-3	-5	1
6 My depression is hereditary	-4	1	-4	-1	2
7 I'm depressed because I've had too much to cope with	3	-2	-2	1	-4
8 The way I think about things has caused my depression	1	3	0	0	-1
9 I am the sort of person who is prone to depression	-3	0	-1	4	2
10 My physical health problems have caused my depression	3	-4	0	-2	4
11 The stress of being physically unwell has caused my depression	5	-2	0	-1	0
12 I knew about the risk of depression when I was diagnosed with my physical health problem	0	-2	-4	2	1
13 I am depressed because I have to cope with things on my own	0	2	1	-1	0
14 My depression makes me feel out of control	0	3	2	3	-2
15 Everybody can see I have depression	-2	0	-5	-3	-1
16 It upsets my family or friends when I'm depressed	4	-2	1	2	-5
17 Being around me will cause others to become depressed	-1	0	0	-1	0
18 I would be frightened to tell an employer about my depression	-1	-2	-2	1	3
19 My depression makes me want to be on my own	0	1	4	5	-3
20 People do not want to see me when I am depressed	-2	2	4	0	-1
21 I have missed out on part of my life while being depressed	3	3	4	-1	-4
22 Being depressed will affect my general physical health	2	2	2	3	-1
23 Depression will make the effects of my physical illnesses worse	0	-1	-2	2	0
24 My depression is under my own control	2	0	-2	0	4
25 Treating the cause of my depression is the only thing that will help	2	0	0	0	-1
26 My family and friends will help me get over my depression	4	1	-3	0	5
27 The best thing for my depression is to see a health professional	1	1	1	2	2
28 I prefer to manage things myself if I get depressed	4	5	1	1	2
29 I think medication would help my depression	0	2	1	3	3
30 My depression will never be cured	-4	-3	-1	1	1
31 There's nothing I can do to cure my depression	0	-3	-1	0	-5
32 Treating my physical health problems will help my depression	1	1	2	1	5
33 More support for my physical illnesses would help my depression	1	-2	1	-1	2
34 I find that my faith helps me with my depression	-1	0	-2	-5	1
35 I think talking to a therapist would help my depression	0	0	3	1	4
36 Talking about my problems just makes me feel worse	-1	0	0	-2	-2
37 Being depressed tends to make me more depressed	2	5	0	3	0
38 Being depressed is part of who I am	-3	4	-1	5	0
39 I see myself differently now that I have had depression	1	-1	3	1	2
40 Depression defines me as a person	-3	1	-2	-2	0
41 I became depressed when I gave in to feeling miserable	0	2	1	0	-2
42 The word depression best describes my mood	-1	1	0	2	0
43 It is important for doctors to give me a diagnosis of depression	1	-1	-2	-1	0
44 My depression is not an illness	-2	-1	2	-2	1
45 Other people would be depressed if they were in the same situation as me	0	-4	-2	-3	0
46 Depression always makes you feel suicidal	-5	-5	-1	-4	-4
47 I need to tell you the story of my life for you to really understand my depression	5	0	1	0	-1
48 Worrying about dying causes me to be depressed	-2	-4	0	-2	1

... continued.

## Appendix 1 continued. Q-set statements

Item wording	F1	F2	F3	F4	F5
49 Symptoms of my physical health problem can overwhelm me into depression	<b>3</b>	-3	0	-3	0
50 I feel ashamed that I am depressed	<b>-3</b>	4	5	-1	-2
51 Depression has changed how others see me	-1	0	3	2	-1
52 Suicide is a means of stopping the distress of depression	<b>-5</b>	-3	<b>-1</b>	-4	-3
53 I think my depression is going to last a long time	-1	-5	0	<b>4</b>	-3
54 My depression started quickly	0	1	<b>-5</b>	0	1
55 My depression comes and goes	2	<b>0</b>	3	4	3
56 I'm depressed because I'm worried about my future	<b>2</b>	-1	-3	-2	-1
57 I understand what the word depression means	1	2	2	0	-2

*Red = Significant statement at  $P < 0.05$ . Red & Bold = Significant statement at  $P < 0.01$ . Blue = Not significant (consensus) statement at  $P > 0.01$ . Blue & Bold = Not significant (consensus) statement at  $P > 0.05$ .*