



Health beliefs and perceived need for mental health care of anxiety and depression—The patients' perspective explored

Marijn A. Prins^{a,*}, Peter F.M. Verhaak^a, Jozien M. Bensing^{a,b}, Klaas van der Meer^c

^a Netherlands Institute for Health Services Research, PO box 1568, 3500 BN Utrecht, The Netherlands

^b Department of Clinical and Health Psychology, Utrecht University, PO Box 80140, 3508 TC, Utrecht, The Netherlands

^c Department of General Practice, University Medical Center Groningen, Antonius Deusinglaan 1, 9713 AV Groningen, The Netherlands

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ABSTRACT

Patients' illness representations and beliefs about treatment for depression and anxiety, as well as their perceived needs, are important for treatment. A systematic review was conducted of 71 studies describing the beliefs or perceived needs of patients and non-patients. Patients give multi-dimensional explanations for depression and see both psychological and medication treatment as helpful. People who suffer from depression have more positive beliefs about biological etiology and medication treatment than healthy people, or those with less severe depressive symptoms. Anxiety patients view psychological interventions as their best treatment option. Between 49% and 84% of the patients with depression or anxiety perceive a need for treatment, mostly for counseling and medication. All patients prefer psychological treatment forms to medication. A majority of patients view antidepressants as addictive and many perceive stigma and see practical and economic barriers to care. The most vulnerable groups in terms of seeking and receiving mental health care for depression and anxiety seem to be minority groups, as well as younger and older patients. More research is required into the specific needs of anxiety and depression patients. Open communication between patient and provider could lead to valuable improvements in treatment.

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* Corresponding author. NIVEL, P.O. Box 1568, 3500 BN Utrecht, The Netherlands. Tel.: +31 30 2729849; fax: +31 30 2729729.

E-mail addresses: M.prins@nivel.nl (M.A. Prins), P.verhaak@nivel.nl (P.F.M. Verhaak), J.bensing@nivel.nl (J.M. Bensing), Klaas.van.der.meer@med.umcg.nl (K. van der Meer).

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1. Introduction

Anxiety and depression are debilitating conditions which are known to cause considerable emotional and physical suffering and which have social as well as economic consequences (Andrews & Henderson, 2000; Bijl & Ravelli, 2000). Anxiety and depression influence the mood, expectations and motivation of patients and are the most prevalent mental disorders, often unrecognized and untreated (Andrews & Henderson, 2000; Andrews, Henderson, & Hall, 2001; Bijl & Ravelli, 2000; Lemelin, Hotz, Swensen, & Elmslie, 1994; Verhaak, 1995). It is important, therefore, to improve the health care provision for these patients. Jorm et al. (1997b) found that the general public's beliefs about mental disorders and the best treatment options differ greatly from the beliefs of health professionals. This means that patients with depression and anxiety may have very different views from health practitioners about what interventions are helpful for them, what influences their help-seeking behavior and adherence to treatment. As a consequence, it would seem important to prioritize the patient's perspective.

The lifetime prevalence of all depressive disorders among adults in the community was 19.0% in the Netherlands in 1991, while the lifetime prevalence of all anxiety disorders was 19.3% (Bijl, Zessen, & Ravelli, 1997). A large number of patients in need of psychological help does not ask for this help, partly because they can cope with their problems, partly because they do not consider themselves as having psychological problems and—most importantly—partly because they do not see a reasonable chance of solving their problems (Verhaak, 1995). Furthermore, it is known that stigma (Craske et al., 2005; Nolan & Badger, 2005; Priest, Vize, Roberts, Roberts, & Tylee, 1996) and beliefs about a purely physical cause (Ogden et al., 1999; Riedel-Heller, Matschinger, & Angermeyer, 2005; van Voorhees, Fogel, Houston, Cooper, Wang, & Ford, 2005) influence people's help-seeking behavior. Although many people are in need of (psychiatric) treatment, few actually receive that treatment, especially where anxiety and depressive disorders are concerned (Bebbington, Marsden, & Brewin, 1997; Bebbington et al., 2000). This phenomenon has been discussed frequently, but mostly from a one-sided point of view, viz. the psychiatrist's (Verhaak, 1995). Therefore, it is important to assess the need for mental health care from the patient's perspective.

Health beliefs can be categorized following the scheme of illness representations of Leventhal, Nerenz and Steele (1984). They provide evidence that illness beliefs are structured around five themes or components, viz. identity, time-line, cause, consequences, and cure/control. This means that an individual's representation of a particular illness or symptoms is made up of his or her own answers to the following questions: what is it? (identity); how long will it last? (time-line); what caused it? (cause); how will it /has it affected me? (consequences); can it be controlled or cured? (cure/control) (Petrie & Weinman, 1997). Different illness representations will lead to different ways of coping with symptoms, such as neglect, denial or active help-seeking. People will seek help in medical, traditional or alternative directions or will seek no help at all, depending on their beliefs. In this review we will explore illness representations and beliefs about depression and anxiety as they are discussed in recent literature.

The research questions we will answer in this systematic review are the following:

1. What health beliefs do people have regarding depression and anxiety as mental health conditions classified by Leventhal's five themes? These are:
 - identity
 - causes
 - time-line
 - consequences
 - cure or control
2. Do patients and non-patients have different health beliefs of depression and anxiety?
3. Do patients with different socio-demographic backgrounds have different health beliefs?

2. Methods

Since the subject of this study is broad, both qualitative and quantitative studies can provide valuable answers to the research questions. The inclusion of both qualitative and quantitative studies made the assessment of the methodological quality of the studies seem complicated, but the search method, analysis and evaluation of results was implemented as systematically as possible.

2.1. Inclusion and exclusion criteria

To be included in this review, studies had to meet the following criteria:

- Studies should focus on (health) beliefs and ideas about psychological problems and about the different treatment options, or should focus on the perceived needs.
- Studies had to be written in English language.
- Studies had to be full length published articles in a peer-reviewed journal.

We excluded the following:

- Studies that explicitly were not focused on anxiety or depression, but on dementia, schizophrenia, substance-related disorders, attention deficit disorders with hyperactivity, learning disorders or eating disorders.
- Studies that concerned children or adolescents.
- Studies published before 1995.

2.2. Search strategy

A computer-assisted search of the databases PubMed, PsychInfo, EMBASE, Cinahl and the NIVEL catalogues was carried out for the period from January 1995 to December 2006. The databases were searched using several search terms and keywords related to depression and anxiety disorders, as well as the need for and attitudes to mental health care from the patient's point of view.

The search strategy was formulated in PubMed and adapted for use in other databases.

"mental disorders"[MAJR] OR "mental health services/utilization"[MAJR] OR "anxiety"[MAJR] OR "anxiety disorders"[MAJR] OR "depressive disorder"[MAJR] OR "depression"[MAJR]) AND ("patient attitude" OR "patients attitudes" OR "patients attitude" OR "patient attitudes") OR ("health care needs" OR health services needs) OR ("health beliefs" OR "treatment preferences" [Title/Abstract]) OR ("patient need" OR "patients needs" OR "patients need" OR "patient needs") NOT ("dementia"[MeSH] OR "schizophrenia"[MeSH] OR "substance-related disorders"[MeSH] OR "attention deficit disorder with hyperactivity"[MeSH] OR "learning disorders"[MeSH] OR "eating disorders"[MeSH]) AND ((has abstract[text]) AND (English[lang]) AND (adult[MeSH:noexp] OR middle age[MeSH] OR (middle age[MeSH] OR aged [MeSH]) OR aged[MeSH] OR aged, 80 and over[MeSH]) AND (Humans[Mesh]) AND ("1995/01/01"[PDat]; "3000"[PDat]))

We continued searching by means of the 'snowball method' (the reference lists of all relevant studies were scanned for potential articles).

2.3. Study selection

The study selection was performed in two stages. The first selection, based on titles and abstracts, was independently performed by two reviewers (MP and PV) who applied the inclusion criteria. The second step was performed by the same two reviewers, who independently applied the selection criteria stated above to the full text of the reports. Inclusion of a study commenced when both reviewers agreed that a study was eligible. The reviewers had doubts or disagreed in 7 cases and these problems were resolved by discussion.

2.4. Assessment of methodological quality

The methodological quality of the studies was assessed by the two reviewers using a standardized critical appraisal instrument from the System for the Unified Management, Assessment and Review of Information (SUMARI) package (Appendix 2). We used this instrument for both quantitative and qualitative studies, but as it is a checklist for assessing the validity of descriptive and correlational studies, some items were not applicable in qualitative (e.g., focus group) studies. Nevertheless, it appeared to be the best available instrument for this review, and gave an effective overview of the quality of the studies. The JBI levels of evidence were used to stratify the methodological quality of the studies included on three levels and the degrees of credibility were divided into unequivocal, credible and unsupported (Joanna Briggs Institute, 2006); see Appendix 3. Any disagreements that arose between the reviewers were resolved through discussion.

2.5. Data extraction

Data were extracted from the studies included, summarized by one of the reviewers (MP), and tabulated (see Appendix 1). No standard data extraction form was used, because it did not suit our various study designs. The information from each study was classified by first author, country, some characteristics of the study population (number, age, respondents, clinical status) and measurements used to identify clinical status or patients' beliefs or needs. Studies were also grouped by study design and focus (e.g. questionnaire study about causes of depression), the latter 'focus' category corresponding to the different headlines in the results section.

2.6. Data analysis and synthesis

The information from Appendix 1 was used for a descriptive analysis of studies and study populations, including clinical status and research methods. Interesting results were further collected by subject. The following subjects were differentiated:

- Causes: beliefs about causes of depression or anxiety,
- Time-line: beliefs about prognosis,
- Consequences: perceived stigma, and
- Cure and control:
 - perceived need for treatment,
 - beliefs about treatment for depression,
 - beliefs about treatment for anxiety,
 - treatment preferences,
 - barriers to treatment.

Results of all studies included were summarized under one or more of the above-mentioned subjects. Because only studies which were rated as 'credible' (evidence that is, although an interpretation, plausible in light of the data and theoretical framework. The interpretation can be logically inferred from the data, because the findings are essentially interpretive, they can be challenged), were included, no differentiation was made regarding the weight of the findings. Results were obtained by means of vote-counting and conclusions were formulated.

3. Results

3.1. Selection of studies

The search strategy resulted in a list of 1327 studies that had assessed the beliefs and needs for mental health care from the patient's perspective. Table 1 shows the distribution per database and Fig. 1 presents the results of the selection procedure in a flow chart, which includes the main reasons for the exclusion of potentially relevant studies. Seventy-one articles fulfilled all selection criteria, were rated as being of 'credible' quality, and were included in our review study as a consequence. Three studies excluded were rated as 'unsupported' and not one study reached the level of 'unequivocal' (evidence beyond reasonable doubt, which may include findings that are matter of fact, directly reported/observed and not open to challenge). Appendix 1 presents the relevant characteristics of the studies included.

3.2. Description of studies

Most studies were from the USA (35), followed by the UK (12) and Australia (10) and some from Canada (5), Germany (5), Ireland, Denmark, the Netherlands and Malaysia (1 each). The number of participants differed greatly and ranged from 16 to 10.962, on account of different research methods. The research methods used were self-report questionnaires (42 studies), fully structured interviews with vignettes of depression (10 studies), semi-structured interviews (7 studies) and telephone interviews (7 studies); two studies used focus group discussions, one used existing data and one used a screening instrument on the internet.

Table 1
Results of database searches

Source	Hits total	Included
NIVEL full catalogue	132	2
PsychInfo	527	32
PubMed	478	27
Embase	163	21
Cinahl	14	0
Handsearch	13	10
Total	1327	71*

*Some articles were found in more than one database.

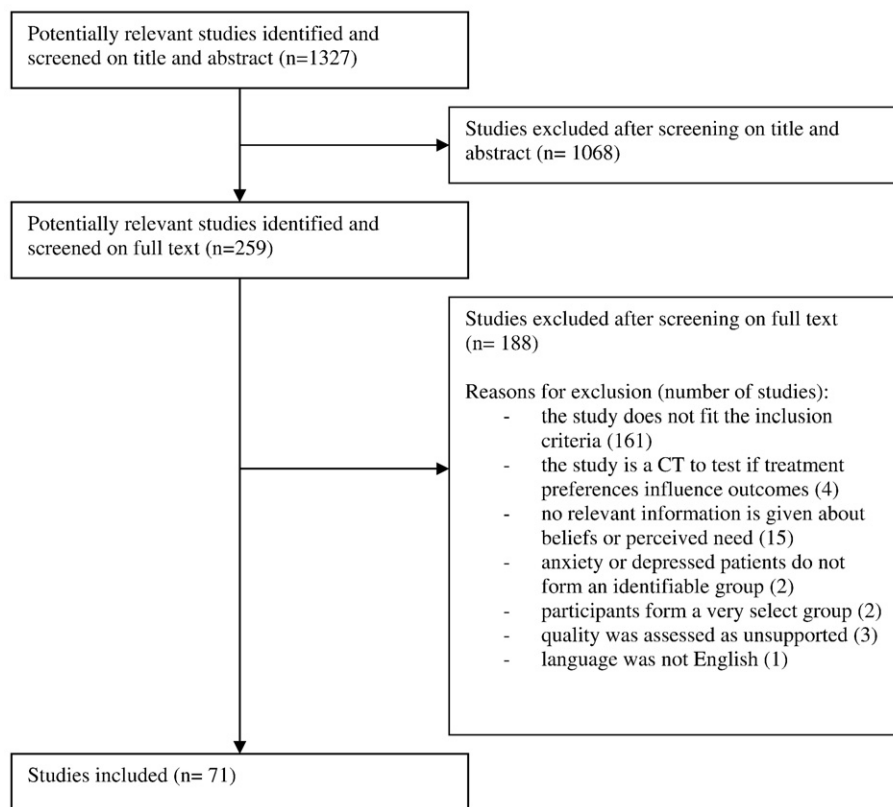


Fig. 1. Flow chart of inclusion procedure.

One systematic review was also included. The respondents from the studies differed in clinical status and comprised clinically depressed patients and patients with an anxiety disorder (according to DSM criteria) in primary and secondary care, patients with a presumable depression or anxiety disorder (measured by instruments that are not real diagnostic measurements) and general practice attendees with subgroups of mentally distressed patients and healthy ones. General population samples were used in addition.

3.3. Identity

The identity dimension of Leventhal's Self Regulation Model (SRM) assesses what the individual thinks the problem is, and this dimension has been sub-divided into the signs and symptoms experienced by individuals and the label that they give to these (Lobban, Barrowclough & Jones, 2003). In many studies where these issues were measured, the focus was on perceived causes of depression or on specific needs for treatment. These studies indirectly contain information about what people think the problem (cause) is or what kind of action (treatment) would help best, but no studies were found that measured purely the 'identity' aspects.

3.4. Causes

In eight studies that surveyed the beliefs of depressed patients about the causes of depression, most authors concluded that the majority of patients see a non-biological, psychological or environmental cause for their depression (Addis, Truax, & Jacobson, 1995; Bann, Parker, Bradwejn, Davidson, Vitiello, & Gadde, 2004; Goldstein & Rosselli, 2003; Löwe, Schulz, Grafe, & Wilke, 2006; Srinivasan, Cohen, & Parikh, 2003; Thwaites, Dagnan, Huey, & Addis, 2004; Tully, Parker, Wilhelm, & Malhi, 2006; Wall & Hayes, 2000). Three other studies, however, found that depressed people regard their depression as a stable characteristic and see physical and biological reasons for depression (Addis et al., 1995; Thwaites et al., 2004; van Voorhees et al., 2005). General practice patients mainly believed that depression is a reaction to external problems (Churchill et al., 2000) and people in the general public mainly saw stressful life events (Barry, Doherty, Hope, Sixsmith, & Kelleher, 2000; Fortune, Barrowclough, & Lobban, 2004; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999; Priest et al., 1996) and interpersonal difficulties (Barry et al., 2000; Fortune et al., 2004; Priest et al., 1996) as causes of depression. Patients who had been depressed were found to attach significantly greater importance to medical/biological causes than patients who had not been depressed (Ogden et al., 1999; Thwaites et al., 2004), which was also found to apply to women (compared with men) (Srinivasan et al., 2003). Non-melancholic depressed patients were

more likely than melancholic depressed patients to rate non-biological causes of their depression (Tully et al., 2006). More younger than older family practitioner attenders felt that biological changes can cause depression (Zeitlin, Katona, D'Ath, & Katona, 1997), but older patients were more likely to endorse cognitive attributional styles as etiologically relevant (Srinivasan et al., 2003). Most people in depressed and non-depressed samples gave a multi-dimensional explanation for depression (Addis et al., 1995; Srinivasan et al., 2003), a finding that is supported by all the studies mentioned above.

3.5. Time-line

With reference to the beliefs people have about how long their experiences were likely to last, it seems that depressed patients have more negative beliefs about the prospects of their complaints and disease than healthy people do. This latter group mostly sees positive prospects of recovery. One study found that currently depressed women had a stronger belief in a chronic time-line and serious consequences where their depression was concerned, than women with a history of at least mild depression in the last 2 years who have no current depressive symptoms (Fortune et al., 2004). The majority of lay people saw positive prospects of recovery from depression (Jorm et al., 1997a; Barry et al., 2000). Primary care patients mainly believed that they should see some benefits from depression treatment within 1 month (51%), 24% thought they should see them within 1 week, 19% within 6 months and 6% within 1 year (Lang, 2005).

3.6. Consequences

This dimension assesses what consequences individuals believe having mental health problems will have for their lives. In one study, depressed primary care patients mainly expected negative consequences for employment (67%), obtaining health insurance (59%) and for friendships (24%) (Roeloffs, Sherbourne, Unutzer, Fink, Tang, & Wells, 2003). Younger people and older people were found to have contrasting perceptions. Younger patients (17–34 years) had less concern about stigma affecting future employment than the older age groups (Roeloffs et al., 2003), while other studies found that younger depressed patients reported higher levels of perceived stigma than older patients (Sirey et al., 2001a; 2001b). The former results were based on a study among 1187 depressed primary care patients, the latter on 134 psychiatric outpatients. van Voorhees et al. (2005) found that the majority of a young (16–29 years) internet sample believed their employers should not know about their depression. Healthy older adults (60+) had more positive attitudes towards seeking help than younger adults (18–47), were less concerned about stigma associated with seeking mental health treatment, and had more confidence in the competence and usefulness of mental health professionals (Rokke & Scogin, 1995). Contrasting results were also found for the influence of gender and race; women reported higher stigma tolerance than men in one study in a healthy group (Rokke & Scogin, 1995), but women in a depressed group were more concerned about stigma affecting employment than men in the same group were (Roeloffs et al., 2003). Apparently, if women are depressed, they experience more stigma than men. Recently depressed African-American patients perceived more stigma than Caucasian patients (Cooper-Patrick et al., 1997) but in another study more Latinas (42%) endorsed stigma barriers than female Caucasian (24%) or African American (16%) patients did (Alvidrez & Azocar, 1999). The former study is based on two focus groups, the second on 105 patients. At this point, there cannot be concluded whether African-Americans perceived more stigmas or not. The word 'psychiatrist' carried connotations of stigma and even fear in the general population in 1991 (Priest et al., 1996), while some years later the general public reacted mainly with pity and empathy towards depressed people and fear or anger were the least common reactions. The general population, nevertheless, feels a desire to keep their distance from depressed people (Angermeyer & Matschinger, 2004).

3.7. Cure and control

This dimension assesses beliefs about how the problem can be controlled, personally or by treatments. Most of the studies we found of this dimension measured beliefs about treatment for anxiety and depression. Specifically, we describe the different perceived needs for treatment, perceived helpfulness of depression and anxiety treatments, the beliefs about antidepressant drugs, and the preferences for different forms of treatment.

3.8. Perceived need

Seven studies measured how many patients with a mental disorder (such as anxiety or depression) experience a need for treatment and we found this to range between 49% and 84% (Boardman, Henshaw, & Willmott, 2004; Brody, Khaliq, & Thompson, 1997; Cooper et al., 2003; Craske et al., 2005; Meadows et al., 2000; Meadows, Liaw, Burgess, Bobevski, & Fossey, 2001; Mojtabai, Olfson, & Mechanic, 2002). The Australian National Survey of Mental Health and Well-being (NSMHWB) found that, of all people with a mental health problem, 56.1% had a perceived need for treatment, 28.9% had unmet needs for information, 46.2% for counseling, 13% for social interventions and 7.6% for skills training (Meadows et al., 2001). Australians saw counseling as their most frequent need for mental health care. Among patients who only see their family practitioner, only 16% had unmet needs for medication, while 50% had unmet needs for counseling. Among patients who consulted other health care providers (not their family practitioner) more counseling needs were fully met (73%) (Meadows et al., 2000, 2001). One study found that co-morbidity of anxiety and affective disorders increased the likelihood of perceiving a need for treatment (Lin & Parikh, 1999). In addition to psychiatric variables, a positive attitude toward mental health help-seeking, physical conditions, marital loss, female gender, younger age (15–24) and middle adulthood (25–44 years), physical or sexual abuse during childhood, maternal psychopathology, chronic difficulties in the primary social network, and insurance coverage were also found to have a positive correlation with the

perceived need for professional help (Lefebvre, Lesage, Fournier, & Toupin, 2000; Meadows et al., 2002; Mojtabai et al., 2002; Rokke & Scogin, 1995). Women specifically were found to have less need for social interventions and skills training than men and were more likely to have a perceived need without a DSM diagnosis. Young adults showed lower rates of perceived need for medication and counseling, while older adults had less need of information, counseling, social interventions and skills training. The very young adults (18–24 years) were more likely to have a DSM diagnosis without a perceived need for mental health care (Meadows et al., 2002; Sareen, Stein, Campbell, Hassard, & Menec, 2005a). Older age and being currently married were associated with increased rates of specialized mental health care use and use of psychotropic medication, while never being married was associated with lower rates of any type of treatment in patients with panic attacks (Goodwin & Andersen, 2002).

3.9. Perceived helpfulness of depression treatment

Depressed patients found psychotherapy and counseling to be the best treatment options in two studies (Cooper et al., 2003; Löwe et al., 2006), but other studies found that depressed patients believed more in the helpfulness of antidepressant drugs (Bann et al., 2004; Jorm, Christensen, Medway, Korten, Jacomb, & Rodgers, 2000). Learning new coping mechanisms or learning how to change thinking patterns, and dealing with stress or difficult relationships were also viewed as helpful in treating depression (Bann et al., 2004; Cooper et al., 2003). General practice patients perceived psychological treatment, preferably given by their family practitioner, as being most helpful for depression and perceived antidepressants as less helpful (Allen, Walker, Shergill, D'Ath, & Katona, 1998; Brody et al., 1997; Lang, 2005). People from the general population regarded psychological treatment such as counseling and psychotherapy to be most helpful (Angermeyer & Matschinger, 1996; Angermeyer, Matschinger, & Riedel-Heller, 1999; Jorm et al., 1997c; Priest et al., 1996), and medical treatment as harmful. Their beliefs about antidepressants have become more positive throughout the years (Angermeyer & Matschinger, 1996; Angermeyer et al., 1999; Jorm, Christensen, & Griffiths, 2006; Rokke & Scogin, 1995). One study found that depressed and non-depressed patients saw family and friends as more helpful than psychiatrists or psychologists, although this perception was stronger in the depressed patients. Counselors and social workers were seen as most helpful in both groups (Goldney, Fisher, Wilson, & Cheok, 2002). Depressed patients and family practitioners regarded medication as a better option than non-depressed patients did (Lang, 2005; Ogden et al., 1999), which was also the belief of patients with depression who had sought help, compared with those who had not sought help (Jorm et al., 2000). African-Americans and Hispanics were less likely than Caucasians to find antidepressant medication acceptable. Individuals who found counseling acceptable were younger, more likely to be separated, divorced or widowed, and were more likely to have had previous treatment (Cooper et al., 2003). Among the general public, older adults seemed to be more skeptical about treatment of any kind than younger adults were (Allen et al., 1998; Rokke & Scogin, 1995) and had a stronger belief in the helpfulness of the family practitioner (Angermeyer et al., 1999). The under-40 age group was more likely to recommend talking to someone close (Barry et al., 2000). Women reported more confidence in mental health professionals than men (Rokke & Scogin, 1995).

One last important finding was that depressed patients all seem to value good interpersonal skills in their caregivers and see the patient-provider relationship as a core aspect of good depression care (Cooper-Patrick, Powe, Jenckes, Gonzales, Levine, & Ford, 1997; Cooper et al., 2000; Gask, Rogers, Oliver, May, & Roland, 2003).

3.10. Beliefs about antidepressant drugs

Many studies found that depressed patients have concerns about their antidepressant medication, or believe that the body can become addicted (Allen et al., 1998; Bultman & Svarstad, 2000; Brown, Battista, Bruehlman, Sereika, Thase, & Dunbar-Jacob, 2005; Cooper et al., 2003; Givens et al., 2006; Kendrick, King, Albertella, & Smith, 2005; Kessing, Hansen, Demyttenaere, & Bech, 2005; van Voorhees et al., 2005; Zeitlin et al., 1997), or that it would seriously reduce their alertness (Nolan & Badger, 2005). One study showed that the general public also seems to view antidepressants as being addictive (Priest et al., 1996).

Men believed more in the addictiveness of antidepressants than women did (Churchill et al., 2000) and African Americans were less willing to use antidepressants and have more negative ideas about efficacy and side-effects when compared with Caucasians (Schnitker, 2003).

Two studies showed that many depressed primary care patients have ambivalent beliefs about medication. Brown et al. (2005) found that patients commonly believe their current or future health depends on antidepressant medication, but they also think that doctors prescribe too many medicines. Aikens, Nease, Nau, Klinkman and Schwenk, (2005) differentiated dimensions of 'perceived need' and 'perceived harmfulness' in a depressed sample and saw the following distribution: 'skeptical' people saw low necessity (need) and high concerns (harm) ($n=24$), 'ambivalent' people saw high necessity and high concerns ($n=18$), 'indifferent' people saw low necessity and low concerns ($n=19$), and finally, 'accepting' people saw high necessity and low concerns ($n=20$).

3.11. Perceived helpfulness of anxiety treatment

Patients with an anxiety disorder (of whom almost half had a co-morbid depressive or other anxiety disorder) generally perceived psychological forms of treatment for anxiety (CBT, psychotherapy) as more positive, acceptable and effective than medication (Deacon & Abramowitz, 2005; Wagner et al., 2005), at least in the long-term (Deacon & Abramowitz, 2005).

Caucasian patients had more favorable views of both psychotropic medication (Bystritsky, 2005; Wagner et al., 2005) and psychotherapy than non-Caucasian patients did (Wagner et al., 2005). More positive beliefs about medication for anxiety were associated

with older age (Bystritsky et al., 2005) and with the experience or current taking of medication for anxiety (Bystritsky et al., 2005; Deacon & Abramowitz, 2005). Those who reported recent CBT demonstrated more positive beliefs about psychotherapy (Bystritsky et al., 2005).

3.12. Treatment preferences

Nine studies specifically measured treatment preferences, viz. four studies of depressed patients (Dwight-Johnson, Sherbourne, Liao, & Wells, 2000; Dwight-Johnson, Unutzer, Sherbourne, Tang, & Wells, 2001; Gum et al., 2006; Lin et al., 2005; Thacher, Morey, & Craighead, 2005), one of primary care patients who had had a recent panic attack (Hazlett-Stevens, Craske, Roy-Byrne, Sherbourne, Stein, & Bystritsky, 2002), one of primary care patients who were distressed compared to non-distressed patients (Lang, 2005), two studies of people from the general population (Ng, Fones, & Kua, 2003; Riedel-Heller, Matschinger, & Angermeyer, 2005) and one systematic review of treatment preferences (van Schaik et al., 2004).

Depressed patients mainly preferred counseling or psychotherapy to medication treatment, which is confirmed by the literature review carried out by van Schaik et al. (2004), who found that the majority of depressed primary care patients in all available studies preferred psychotherapy. Factors associated with preferring counseling to medication were female gender, greater knowledge of counseling or prior treatment experience with this, paid sick leave, and no recent antidepressant treatment. In a mainly male sample (Lin et al., 2005), 15% preferred medication, 24% psychotherapy and 61% preferred both.

The influence of ethnicity showed contrasting results. Dwight-Johnson et al. (2000) found African-Americans to prefer counseling more often than Caucasians, but minority status was not found to be predictive of treatment preference in Gum et al. (2006). The latter study however, was performed among elderly patients (>60) while the former study used a sample of patients aged >17 years old. Age could have been a confounder in this case. Treatment preferences seem to vary among depressed patients (Thatcher et al., 2005) and three classes can be identified that differ in their sensitivity to treatment costs and effects. One class cared primarily about treatment effectiveness, while side effects and the cost of treatment had little impact on this class's treatment decisions. Another class was highly sensitive to cost and side effects, and a third class was between the other two. Group membership seemed to be a function of age and gender; younger or male patients were more likely to be sensitive to treatment costs and side effects.

In a group of primary care patients who had had a recent panic attack, 64% were willing to take medication for panic disorder, but 88% of this group was also willing to consider psychological treatment. Willingness to consider medication treatment was associated with higher age and lower education level (Hazlett-Stevens et al., 2002). Distressed and non-distressed primary care patients preferred treatment for depression which involved them understanding the cause of their feelings, learning to manage their moods, and having someone to talk to (Lang, 2005).

Lay people recommended turning to a health professional in the event of depression (Riedel-Heller et al., 2005). They preferred to seek help from psychotherapists (22.4%), psychiatrists (21.2%) and family physicians (20.1%), and their treatment recommendations were dominated by psychotherapy (53.7%). If this were to fail, psychotropic drugs (36.8%) and relaxation (18.3%) were suggested. A study among Malay, Chinese and Indian people produced very different results. Only an estimated 37% of these people living in Singapore would seek professional help if they experienced a serious emotional or mental problem, and 89.6% of those who actually preferred to seek help did not in fact do so. General practitioners were the most commonly preferred caregivers in this study (49.3%). High GHQ score, a positive attitude toward professional help and Malay ethnicity were the most significant predictors of use of mental health services.

3.13. Barriers to treatment

Practical barriers, such as high costs and lack of time, were perceived as the most important barriers to seeking professional care by patients with a depressive or anxiety disorder, while emotional barriers, like fear of embarrassment, rejection or stigma were perceived as less important (Alvidrez & Azocar, 1999; Craske et al., 2005; Mohr et al., 2006; Mojtabai et al., 2002). General practice patients saw another reason for not seeking help for a mental problem, which was that they thought they could work it out by themselves (Lang, 2005; Lefebvre et al., 2000). This seemed to apply less to distressed people, however (Lang, 2005). People in the general population also 'preferred to manage by themselves,' while other barriers were 'did not get around to it' and 'did not know how to get help' (Sareen, Cox, Afifi, Clara, & Yu, 2005b).

Depression was found to be associated with increasingly frequent perception of barriers to psychotherapy, and 74% of depressed patients reported one or more barriers versus 51% of non-depressed patients (Mohr et al., 2006). Women reported a greater number of barriers than men (Mohr et al., 2006), as did people with a higher educational level (Barry et al., 2000). Older adults (60+) were much more likely to hold a belief in self-reliance when compared with younger (<60 years) adults, while younger adults more frequently identified time concerns (Wetherell, Kaplan, Kallenberg, Dresselhaus, Sieber, & Lang, 2004). Besides, there seems to be high non self-attribution in the elderly (Allen et al., 1998) and people of all ages have problems in recognizing depression in older people (Davidson & Connery, 2003).

4. Discussion

Our aim was to explore the illness representations or beliefs of patients and non-patients regarding mental health care for anxiety and depression, and their perceived needs. A computer-assisted search of the recent literature identified seventy-one relevant studies carried out from 1995 to 2006 that met the inclusion criteria. Many more articles were found that described depressive disorders than described anxiety disorders. In terms of the five themes of Leventhal's Self Regulation Model, most studies focused on beliefs about causes for depression and different treatment options, i.e. the cure and control component.

4.1. Discussion of results

Many respondents believe in external causes for depression. Biological explanations become more acceptable when one turns into a patient. For depressed patients, the expectancy of recovery is negative. These illness beliefs often do not reflect reality and may interfere with treatment. This is expressed in the negative evaluation of psycho-pharmacological treatment, especially among patients who never experienced a mental disorder before. Both depressed patients and anxiety patients perceive psychological treatment as their best treatment option. Patients are highly concerned about becoming addicted when taking medication like antidepressants. Studies have demonstrated patients' general aversion to medicines (Britten, 1994; Townsend, Hunt, & Wyke, 2003). This applies for general practice patients but even stronger for chronically ill patients. Besides, if one thinks the cause of the problem is a non-biological one, medication treatment would look like a remedy to suppress the symptoms. An anxiety disorder often has a clearer behavioral cause or solution than depression. A specific dog phobia, for example, may exist because of one traumatic event and taking medication for that will easily feel like a suppression of symptoms and less like solving the problem. A generalized anxiety disorder (GAD) on the other hand is less clear in its etiology and solution, so medication may then seem more appropriate.

A qualitative study by Haslam, Brown, Atkinson, and Haslam (2004) states that many sufferers from anxiety and depression experienced side effects from medication and felt poorly informed about these. They believed they were not given sufficient information regarding mechanisms by which the medication works and the possible side effects. This study found that people who were given accurate information were more likely to comply with the treatment regimen, which is consistent with another important finding of this review, viz. that communication and good interpersonal skills on the part of the health professional are perceived as the most important aspects of depression care. Many patients with an anxiety or depressive disorder view their family practitioner as a focal point for help, but find it difficult to disclose their distress (Kadam, Croft, McLeod, & Hutchinson, 2001). These patients would like more proactive information and 'permission' to disclose mental health problems, which means there is much to be gained in the general practice setting.

The finding that general practice patients have more unmet needs for counseling than for medication, while patients who use other services had their counseling needs more often met, might be explained by the fact that family practitioners may have different conceptions of their task than specialized mental health providers and may therefore behave in a more biomedical way (Ring, Dowrick, Humphris, Davies, & Salmon, 2005). Family practitioners do not lightly decide to prescribe antidepressants and apply decision rules based on clinical and social criteria. The prime rule is to 'wait-and-see' and decision-making is shaped by organizational constraints (lack of time and access to psychological services), the family practitioner's professional responsibility, his or her opinions, and patient attitudes (Hyde, Calnan, Prior, Lewis, Kessler, & Sharp, 2005). Family practitioners need to have readily accessible alternatives for antidepressants, since this medication would otherwise be their only treatment option.

There is a gap between people's beliefs about different treatment options for depression and their perceived needs, and the existing guidelines on what action professionals should take. The Dutch general practice and multidisciplinary guidelines for depression and anxiety describe a more prominent role for antidepressant medication than patients prefer (NHG, 2003, 2004; Trimbo's instituut, 2005). Medication treatment is recommended in cases of moderate to severe depression if complaints exist for at least 3 months without improvement, if other forms of help (psycho-education, bibliotherapy, problem-solving therapy, or wait-and-see) do not result in better outcomes, or if the patient prefers this kind of treatment. The National Institute for Clinical Excellence (NICE) has issued guidelines for the National Health Service (NHS) in the UK on treatment and care of people with depression and anxiety. The recommendations in these guidelines are presented within a stepped care framework that aims to match the needs of people to the most appropriate services, depending on the characteristics of their illness and their personal and social circumstances (CG23 Depression: Quick reference guide (amended), 2007). This stepped care model seems to fit better to patients' needs, as this model provides more alternatives for medication. The titrated treatments include guided self-help and short-term psychological treatment for example. Key points in the guidelines for depression are the explicit recommendation to consider patient preference when deciding on treatment and the emphasis on shared decision making. The strong recommendation for (a combination with) psychological interventions in all steps seems to fit our finding of patients' preferences for treatment.

When concerning people's beliefs on treatment for anxiety disorders, they seem to come closer to the clinical guidelines in the Netherlands. The recommended treatment for anxiety disorders is psychological or behavioral in the first place, and only supported by medication if the patient suffers from a severe co-morbid depression, or agoraphobia, and again if the patient prefers this form of treatment (Trimbo's instituut, 2003). The NICE guidelines for anxiety (panic, with or without agoraphobia, and GAD) (CG22 Anxiety: Quick reference guide (amended), 2007) recommend that patients should be offered any of 1) Psychological therapy, such as CBT, 2) Medication, such as an SSRI, or 3) Self-help, such as bibliotherapy based on CBT principles. Here again, patients' preferences are seriously taken into account. Besides, for both anxiety and depression, there is a clear preference for treatment in primary care settings to outwith stigmatized mental health settings.

Collaborative care models used in primary care in the US is a useful help to improve treatment in depression and anxiety. It appeared to improve adherence to (medication) treatment, increased patient satisfaction with depression care, and improve depression outcome compared with usual care by general practitioners alone (Katon et al., 1997). The success of this, on evidence based, structured type of treatment, lays in the collaboration between mental health care providers and the general practitioner.

4.2. Differences between patients and non-patients

We can answer the question "Do patients and non-patients have different illness representations about depression and anxiety?" in the affirmative—for some aspects at least. Depressed patients believe more in a biological etiology and have more trust in medication than non-depressed patients. Multiple explanations seem possible for this interesting finding. Firstly, depressed

patients have lost the sense of being in control and think some biological changes are the cause. Secondly, patients' beliefs about causes may switch to the biological end by processes of cognitive dissonance while taking medication. Thirdly, the experience of being depressed can change people's views about treatment; and fourthly, depressive symptoms can cause a more pessimistic belief in the power of one's own curative abilities, or lack of energy may cause a preference for (easy) medication treatment rather than facing difficulties in life. The finding that depressed patients mostly have negative expectations of recovery from depression and see a more chronic time-line, while healthy people see more positive prospects, is obvious. This can be a reasonable result of the mental condition. General practice patients and people from the general population more frequently prefer to manage their problems alone than distressed people do. This latter group probably feels worse and therefore prefers not to manage its problems alone. Apart from the differences, however, there are similarities between patients and non-patients, in that both see antidepressants as being addictive in some way and prefer psychological treatment for their complaints. The general public also regards this kind of treatment as the best first choice.

4.3. *What role socio-demographic factors play?*

Gender, age and ethnicity are important predisposing characteristics influencing beliefs and perceived needs in anxiety and depression patients and non-patients. Women seem to attach greater importance to biological causes of depression than men do and believe less in the addictiveness of antidepressants. They seek help more easily and experience a need for treatment about two times more often than men.

The most vulnerable groups found in this review are younger, older and minority-group patients, on the respective bases of a low perceived need, failure to recognize a mental disorder in themselves, and negative beliefs about treatment. It is conceivable that younger people do not readily want to seek professional help for their problems; young or adolescent people may feel they have to cope with difficulties alone, because that is part of growing up. They can also hesitate to show their problems or 'weaknesses', because they feel embarrassed or think they are failing in some way. Diagnoses can more easily be missed in older people whose life circumstances are accompanied by distressing feelings, since the chances of losing loved ones and experiencing physical decline increase greatly as people grow older. In addition, people's daily tasks decrease when they retire from working life and these radical changes put an extra strain on people, but are seen as normal life events. Both patients and family practitioners think depression is an understandable product of all of these and family practitioners are reluctant to actively treat these patients as a result (Burroughs, Lovell, Morley, Baldwin, Burns, & Chew-Graham, 2006). People from minority groups are often found in economically disadvantaged groups as well. These disadvantaged groups are known to have a higher prevalence of anxiety and depressive disorders (Bijl et al., 1997) and it is also conceivable that they have different needs and beliefs about treatment for mental disorders. A review of recent literature (Scheppers, van Dongen, Dekker, Geertzen, & Dekker, 2006) also identified a great number of potential barriers to the use of general health services by ethnic minorities, and demographic variables, health beliefs and attitudinal factors were found to be important barriers to seeking care. Underutilization of services and poor quality of mental health care is due to less-than-favorable illness and treatment beliefs among depressed and anxiety patients from minority groups (Schraufnagel, Wagner, Miranda, & Roy-Byrne, 2006).

4.4. *Considerations and limitations of present research*

The results found on 'causes' of depression, 'perceived need', 'perceived helpfulness of depression treatment', 'treatment preferences' among depressed patients and on 'barriers to treatment' are quite robust. Depressed patients were most often used in these studies and conclusions point in the same direction. The most valid conclusion in this review is the one about 'beliefs about antidepressant drugs': depressed patients have concerns about antidepressant medication. All these findings seem to have unequivocal evidence. The results on 'time-line' and 'perceived helpfulness of anxiety treatment' are less robust since very few studies have measured this. Some results in 'consequences' are based on studies that contain conflicting outcomes. Here we have taken into account the size and representativeness of the sample, to decide what study more value is attached to. Findings on specific subgroups (women, older people, minority groups etc.) are mostly based on one or two studies. These results should thus be handled with care.

Findings related to minority groups come primarily from studies in the USA. Studies from the USA dominate this review on the whole and conclusions cannot be generalized to all countries as a consequence. All studies included were of the 'credible' level of evidence according to the Joanna Briggs Institute (2006) standards, which means that evidence from the study is, although an interpretation, plausible in light of the data and theoretical framework, and the interpretations can be logically inferred from the data but, because the findings are essentially interpretive, they can be challenged. We searched for descriptive or observational studies, of what you can hardly expect more. The studies differed greatly in sample type, size and measurements. This made results difficult to compare. It is possible that results are somewhat distorted by third factors, such as co-morbidity or health status. Unfortunately, we have no detailed overview on all these possible confounders. Besides, studies have not sufficiently differentiated between first and relapse episodes in depression patients. We therefore cannot draw conclusions about its effect on patients' beliefs and needs. Nevertheless, our conclusions are supported by general findings from multiple studies.

4.5. *Future research directions*

In summary, we can see some general patterns in patients' beliefs about anxiety and depression. It is important, however, to bear in mind that patients do have different ideas about and preferences for treatment. Many factors play a role and each individual is unique in his or her needs. In this review we restricted our searches to the adult population for practical reasons. Nevertheless,

the youth should not be overlooked. Especially for conditions like anxiety and depression, research on their beliefs and needs is needed too. This also counts for multicultural oriented investigations. Cultural background can have a strong influence on health perceptions and help-seeking behavior. Illness representations and (health) beliefs are very important in health behavior, the utilization of health services, and outcomes. Beliefs about causes, time-line, consequences, perceived helpfulness of different treatment options, stigma and other barriers to care have a significant influence on the utilization of health care services. The majority of patients with anxiety or depressive symptoms do experience a need for treatment, however, although what exactly is needed to optimize the utilization of services, and outcomes, is not entirely clear as yet. The Perceived Need for Care Questionnaire (PNCQ) of Meadows et al. (2000) has measured need in an Australian population and has started to specify patients' needs (Meadows et al., 2001, 2002), but more research like this is required and should also identify factors that predict needs for treatment, so that (mental) health care providers have more information to provide help that is adapted to patients' specific needs. The pre-condition for success in this situation is good communication between patient and provider. Mental health care providers and family practitioners will have to question patients explicitly on the subject of their beliefs and preferences for treatment and search together for a satisfactory fit in their personal situations.

Acknowledgment

We would like to thank Noor Breuning, employee of the NIVEL library, for her help with the database searches.

Appendix 1. Characteristics of included studies

First author	Country	Age	Number of participants	Respondents	Clinical status	Measurements	Study design and focus
Addis et al., 1995	USA	20 (mean age=37.8 yrs)	602 133	Undergraduate students and individuals seeking participation in a depression treatment study, 59% and 76% female resp.	Non-depressed students and clinically depressed patients.	Reasons for depression questionnaire (RFD), BDI, HRCD, SCID.	Questionnaire study about causes of depression.
Aikens et al., 2005	USA	≥18	81	Primary care patients who were on antidepressants for depression for 12 weeks or more, 79% female, 90% white.	Depressed primary care patients.	Beliefs about medication scale, PHQ, SF-12.	Questionnaire study about beliefs about antidepressants.
Allen et al., 1998	UK	18–64 ≥65	80 80	Patients in two age groups admitted via the Accident and Emergency department of a district hospital, 51% and 57% female resp.	Hospital inpatients with a presumptive depression and non-depressed patients (32.5% resp. 30%).	Attitudes to depression questionnaire (ADQ), the Goldberg and the Geriatric depression scale (GDS).	Questionnaire study about beliefs about treatment, antidepressants and barriers to care.
Alvidrez & Azocar, 1999	USA	19–53	105	Low educated women from a women's clinic at San Francisco General Hospital. 25% white, 62% Latina or African American.	Hospital outpatients 66% of whom had major depression and 24% an anxiety disorder.	The PRIME-MD.	Interview with questions about perceived barriers to treatment and stigma.
Angermeyer & Matschinger, 1996	Germany	≥18	2118	People living in private households and who participated in this survey (1990).	General population.	Fully structured interviews.	Vignette study to assess perceived helpfulness of treatment for depression and panic disorder with agoraphobia.
Angermeyer et al., 1999	Germany	≥18	1564	People living in private households.	General population.	Fully structured interviews.	Vignette study to assess perceived helpfulness of depression treatment.

Appendix 1 (continued)

First author	Country	Age	Number of participants	Respondents	Clinical status	Measurements	Study design and focus
Angermeyer & Matschinger, 2004	Germany	≥18	5025	People living in private households and who participated in this survey (2001 compared to 1990).	General population.	Fully structured interviews.	Vignette study to assess recognition of depression and perceived stigma.
Bann et al., 2004	USA	≥18	340	Patients with major depression from 12 academic or community psychiatric clinics, 66% female.	Depressed outpatients.	Explanatory model for depression (EMD) questionnaire, SCID-Hypericum, HAM-D, GAF, BDI.	Questionnaire study measuring perceived helpfulness of depression treatment and causes of depression.
Barry et al., 2000	Ireland	≥15	1014 100	People from four rural communities. Sub-sample of 2 of the communities; 61% and 62% female resp.	General population.	An interviewer-administered questionnaire and a depression vignette method.	Interview questionnaire measuring beliefs about prognosis, causes of depression and perceived barriers to care.
Boardman et al., 2004	UK	17–65	336	General practice attenders with ≥1 (non-psychotic) psychiatric disorder, 66% female.	General practice patients with an axis-I psychiatric disorder.	NFCAS-C, GHQ, SCID.	An interview and questionnaire study measuring perceived need.
Brody et al., 1997	USA	15–75	403	General practice patients from 5 practices, 75% female, 51% white.	General practice patients 8% of whom had a presumptive diagnosis of major depression, 9% of minor depression.	A self-administered version of the PRIME-MD, MOS SF-20 and questions about the importance of being helped by the GP and their expectations.	Questionnaire study measuring perceived need and helpfulness of depression treatment.
Brown et al., 2005	USA	≥18	192	General practice patients who had been prescribed an antidepressant for treatment of depression in the preceding 2 weeks, 71% female.	General practice patients with mild to moderate symptoms of depression (86% according to the PRIME-MD).	PRIME-MD, BDI, BMQ (patients views on antidepressants) and the Morisky Medication Adherence Scale.	Questionnaire study measuring beliefs about antidepressant drugs for depression.
Bultman & Svarstad, 2000	USA	≥18	100	Individuals who have a newly prescribed antidepressant (from 23 pharmacies). 76% female.	Depressed patients.	Individuals were telephone interviewed for 30–45 min. at the beginning of their treatment and again 2 months later.	Telephone interviews about beliefs about antidepressants.
Bystritsky et al., 2005	USA	≥18	388	Patients from 6 university-affiliated primary care clinics, 61% female.	Patients with an anxiety disorder. About half were also depressed.	Self-report screening on anxiety and depression, a telephone diagnostic interview and CIDI.	A questionnaire and telephone study about influencing factors of perceived helpfulness in anxiety treatment.
Churchill et al., 2000	UK	Mean age of women was 42, of men 40 years.	895	Adult patients attending 20 general practices, 68% female.	General practice patients 32% of whom had a depression (BDI).	A self-completion questionnaire: BDI, preferred treatment options if depressed, experience and knowledge of/attitudes to depression.	Questionnaire study measuring beliefs about causes of depression and antidepressants.
Cooper et al., 2000	USA	18–64	76	Attenders of an urban university-based primary care clinic. 72% female.	Patients with depression and mixed anxiety/depressive conditions.	CES-D, a self-administered survey about their opinion on the importance of good quality of care for depression.	Questionnaire study measuring beliefs about (what is important in) depression treatment.
Cooper et al., 2003	USA	≥18	829	Primary care patients (659 non-Hispanic whites, 97 African Americans, 73 Hispanics) 73% female.	Patients with a depressed mood or loss of interest in the last week and a major depressive episode in the last year.	CES-D, MOS SF-12 and questions about disability, treatment experience, social support, life events and beliefs about care.	Telephone survey about perceived need for and beliefs about depression treatment.

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Appendix 1 (continued)

First author	Country	Age	Number of participants	Respondents	Clinical status	Measurements	Study design and focus
Cooper-Patrick et al., 1997	USA	≥ 18	16	Patients with a recent episode of depression (8 whites/ 8 blacks), 62.5% female.	Depressed patients.	2 focus group discussions (stratified by race)	Focus group discussions concerning beliefs about (what is important in) depression treatment and perceived stigma.
Craske et al., 2005	USA	18–70	231	Patients from two university-affiliated primary care clinics, who were willing to accept a combination of drug and cognitive-behavior therapy. 67% female.	Patients with a current panic disorder with or without agoraphobia, with at least one panic attack in the last week.	A telephone diagnostic interview: CIDI, SF-12, CES-D, NEO-PI, WHODAS and questions about 'perceived needs'.	Telephone survey about perceived need and barriers to depression treatment.
Davidson & Connery, 2003	UK	18–64 versus ≥ 65	269	122 'younger' and 147 'older' adults from a large city in Scotland. 62% and 80% female resp.	General public.	A questionnaire with 11 questions about their beliefs about a 30-year old man and a 70-year old man with depressive symptoms.	Vignette study to assess beliefs about depression in different age groups and barriers to care.
Deacon & Abramowitz, 2005	USA	Mean age 35.4 years, SD = 12.1	103	Patients seeking treatment in an outpatient setting offering both medication and CBT. 53.4% female, 90.3% white.	Patients with an anxiety disorder (32% OCD, 21% panic disorder, 19% social phobia, 12% specific phobia, 11% GAD, and 5% other).	A semi-structured diagnostic interview, MINI, BDI, STAI-T and TPQ was taken.	Questionnaire study measuring beliefs about treatment for anxiety.
Dwight-Johnson et al., 2000	USA	> 17	1187	Primary care patients from 46 clinics in 7 geographic regions. 71% female.	All had depressive symptoms, 55.9% met criteria for a depressive disorder (major depression, dysthymia or both).	Brief screening instrument (CIDI items), and a self report mailed patient assessment questionnaire (PAQ) or telephone interview.	Questionnaire study combined with a telephone interview measuring if there is need for help and treatment preferences.
Dwight-Johnson et al., 2001	USA	> 17	742	Primary care patients from 46 clinics in 7 geographic regions. 74% female	All met criteria for current major depression, dysthymia or lifetime history of depressive disorder with current symptoms.	Brief screening instrument, full CIDI affective disorders section, and a self report mailed patient assessment questionnaire (PAQ) or telephone interview.	Questionnaire study combined with a telephone interview measuring if there is need for help and treatment preferences.
Fortune et al., 2004	UK	Mean age 33 years, SD = 5.5	101	Socio-economically disadvantaged women with a history of at least mild depression in the last 2 years. All have children and live in Manchester.	Mean BDI score of 17.48, SD = 10.58. 56% had a BDI score of ≥ 15, indicating depressed mood. 16% were on antidepressant treatment.	Home interviews with the illness perception questionnaire (IPQ) and BDI.	Questionnaire study measuring beliefs about depression treatment, prognosis and causes.
Gask et al., 2003	UK	≥ 18	27	Primary care patients who were currently receiving care for depression from 10 GPs. 70% female.	Patients with mild to moderate depression, not otherwise defined by their general practitioner.	Semi-structured home interviews about experience and understanding of "depression", and its treatment by the general practitioner.	Qualitative study using interviews measuring beliefs and experiences about depression treatment.
Givens et al., 2006	USA	≥ 60	42	Primary care patients who expressed reluctance or refusal to use antidepressant medication. 64% female.	Patients with major depression (60%), minor depression, depression NOS and dysthymia.	Semi-structured home interviews about experiences of and beliefs about depression treatment.	Qualitative study using interviews measuring beliefs about antidepressants.
Goldney et al., 2002	Australia	≥ 15	2769 205	Respondents without and respondents with major depression. 50 had suicidal ideation (20 male, 30 female).	General public versus depressed patients.	Vignettes from Jorm et al. (2000) were used. Depression and suicidal ideation was assessed by the PRIME-MD.	Vignette study to assess beliefs about depression treatment.

Appendix 1 (continued)

First author	Country	Age	Number of participants	Respondents	Clinical status	Measurements	Study design and focus
Goldstein & Rosselli, 2003	USA	18–22	66	College students from Wesleyan University 67% female.	44% identified themselves as having 'had' depression and 17% as being currently depressed.	Self-formulated questionnaire.	Questionnaire study measuring beliefs about depression: cause, treatment and stigma.
Goodwin & Andersen, 2002	USA	15–54	498	Individuals from the National Comorbidity Survey with a panic disorder. Around 68% female.	Patients with a panic disorder and many had another axis-I disorder.	CIDI (DSM-III-R) interview and questions about treatment use.	Existing data from the NCS were used to identify factors associated with treatment use for panic attacks.
Gum et al., 2006	USA	≥60 (mean age=71.1 years)	1602	Primary care patients from 18 clinics who expressed a preference for one of the two active treatments (antidepressants or counseling). 67% female.	Major depression, dysthymia and a comorbidity of both was respectively 17%, 30% and 52%. 30% had anxiety based on a screener.	Computer-assisted personal interview including SCID, SCL-20, SCL-90, treatment preferences (medication, counseling, no treatment).	Computer-assisted personal interview measuring depression treatment preferences.
Hazlett-Stevens et al., 2002	USA	Mean age=39.7	1043	Primary care patients recruited from 5 academic medical center primary care clinics. 73.3% female.	All had a recent panic attack episode.	Screening questionnaire on recent panic attacks, 2 additional questions about willingness to take medication for it or to meet with a specialist.	Questionnaire study measuring willingness to receive treatment: treatment preference.
Jorm et al., 1997a	Australia	18–74	1010	A representative national sample of adults. 56% female, 74% Australian-born.	General public.	Structured home interviews, based on a vignette of a person suffering from major depressive disorder.	Vignette study to assess beliefs about depression: prognosis.
Jorm et al., 1997b	Australia	18–74	2031 872 1128 454	A representative national sample of adults, and General Practitioners Psychiatrists Clinical psychologists	General public and health care providers.	A case vignette describing a person with depression. Questions about perceived helpfulness of various types of help.	Vignette study to assess beliefs about helpfulness of different forms of depression treatment.
Jorm et al., 1997c	Australia	18–74	2031	A representative national sample of adults.	General public.	A principal component analysis of the ratings of helpfulness of professional and other treatment strategies.	Factor analysis study of structure of beliefs about depression treatment.
Jorm et al., 2000	Australia	20–59	3109	Community sample from a region of New South Wales.	23% had a history of treated depression, 15% with untreated depression and 61% with no history of depression.	A case vignette describing a person with depression, questions about help-seeking and Goldberg Depression Scale.	Questionnaire (postal) study to explore how public beliefs may vary with experience of depression and having sought help.
Jorm et al., 2006	Australia	18–74	910	A representative national sample of adults.	General public.	A case vignette describing a person with depression.	A vignette survey carried out in 1995 is compared with one 8 years later: beliefs about depression and its treatment.
Kendrick et al., 2005	UK	≥18	502 (318 resp.184 from phase 1 and 2, 3 years apart)	General practice patients from 7 practices who returned the questionnaire. 62% resp. 56% female.	Patients who were not currently taking antidepressants or receiving other psychiatric treatment. 13% and 16% resp. were depressed according to the HADS.	Screening (HADS) in the waiting room and a questionnaire.	Questionnaire (postal) study measuring beliefs about treatment with antidepressants.

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Appendix 1 (continued)

First author	Country	Age	Number of participants	Respondents	Clinical status	Measurements	Study design and focus
Kessing et al., 2005	Denmark	Mean age = 43.8 years	493	Psychiatric patients from the Danish Psychiatric Central Research Register who are treated in hospital settings. 53% female.	50% had a depressive disorder and 50% a bipolar disorder, mean number of admissions was 2.44.	Antidepressant Compliance Questionnaire (ADCQ) was mailed to patients.	Questionnaire (postal) study measuring beliefs about antidepressants.
Lang, 2005	USA	≥ 18	298	General practice patients from waiting rooms of a VA facility (26%) and university-affiliated clinics.	45% were distressed (BSI-score ≥ 63), 88 reached 'caseness' on the depression scale and 61 on the anxiety scale.	BSI-18 to assess anxiety, depression, somatization and general distress, and a set of questionnaires.	Questionnaire (postal) study measuring beliefs about treatment preferences for depression, perceived prognosis and barriers to care.
Lefebvre et al., 2000	Canada	Mean age around 35 years.	82	Pre-selected subjects from an original community sample of Montreal residents.	19.5% had a current psychiatric disorder, 52% a lifetime one and 28% no psychiatric disorder.	DISSA, SCL-90, SAS-SR, NFCAS-C.	Questionnaire study measuring beliefs about (barriers to) treatment for psychiatric disorders.
Lin & Parikh, 1999	Canada	15–64	341 4369	Respondents from the OHS with a Major Depressive Disorder and healthy residents.	Most of the MDD patients had a single episode followed by severe/psychotic forms.	UM-CIDI, need for service measures were MDD recency and severity, physical and psychiatric comorbidity, disability and risk factors.	Questionnaire study measuring beliefs about help-seeking for depression (comparing healthy, untreated depressed and treated depressed persons).
Lin et al., 2005	USA	24–84 (mean age = 57 yrs)	335	Patients from a Veterans Affairs primary care setting. All had a treatment preference. 95.5% men.	They had a diagnosis of depression, dysthymia or both.	A computer-assisted telephone interview.	A computer-assisted telephone interview measuring treatment preference and attitudes and beliefs about depression.
Link et al., 1999	USA	≥ 18	1444	General Social Survey. Adults living in non-institutional settings.	General public.	Interview.	Vignette study to assess recognition of mental illnesses and beliefs about the causes of depression.
Löwe et al., 2006	Germany	Mean age = 41 years.	178	Patients from 7 internal medicine outpatient clinics and 12 family practices in Heidelberg. Selected from prior research.	87 depressed and 91 non-depressed patients. (66% and 67% female resp.)	Telephone interview including the SCID, PHQ-9 and questions about attitudes toward emotional problems and their treatment. ICD-10 codes from the GP.	Telephone survey measuring beliefs about causes of depression and its treatment.
Meadows et al., 2000	Australia	≥ 18	10,641	Respondents from a clustered probability sample of the National Survey of Mental Health and Well-being (NSMHWB).	General public 9.7% of which suffers from an anxiety disorder and 5.8% from an affective disorder.	Perceived Need for Care Questionnaire (PNCQ) and CIDI interview.	Questionnaire study measuring the perceived need for mental health care.
Meadows et al., 2001	Australia	≥ 18	10,641	Respondents from a clustered probability sample of the NSMHWB.	See Meadows, 2000.	PNCQ, CIDI interview and self-reported service utilization and demographic variables.	Questionnaire study measuring the perceived need for mental health care and influencing factors.
Meadows et al., 2002	Australia	≥ 18	10,641	Respondents from a clustered probability sample of the Australian NSMHWB.	General public 9.7% of which suffers from an disorder and 5.8% from an affective disorder.	PNCQ, CIDI interview and self-reported service utilization, and questions on demographic variables.	Questionnaire study measuring the perceived need for mental health care and influencing factors.

Appendix 1 (continued)

First author	Country	Age	Number of participants	Respondents	Clinical status	Measurements	Study design and focus
Mohr et al., 2006	USA	≥18 (mean age=52.6 years)	290	Primary care patients from one university clinic who had seen their general practitioner ≤18 months ago. 58.6% female.	54.8% (159) had a ICD-10 diagnosis of depression or a prescription for antidepressants and 131 patients had not.	PHQ-9, SF-36, the Perceived Barriers to Psychotherapy (PBP) and history of psychotherapy were measured.	Questionnaire study (postal) measuring beliefs about barriers to psychotherapy.
Mojtabai et al., 2002	USA	15–54	1792	Participants in the National Comorbidity Survey from non-institutionalized households. 55% female	Patients with a 12-month DSM-III-R mood, anxiety, or substance disorder.	CIDI and questions about perceived need for help with emotional problems and help-seeking behavior.	Questionnaire study measuring the perceived need for mental health care and barriers.
Ng et al., 2003	Malaysia	13–64	2947	Chinese (38%), Malay (34%) and Indian (27%) subjects from the general population in Singapore.	16.9% had a high GHQ-28 score.	A structured questionnaire and the GHQ-28 were taken by interview.	Face-to-face interview study using a questionnaire measuring treatment preference and actual utilization of services in the past month.
Nolan & Badger, 2005	UK	24–67 (mean age 42 years)	60	Primary care patients from 4 practices. 62% female.	Patients were treated with antidepressants for a first episode of depression within the previous 18 months.	Semi-structured interviews at the patient's home or practice of their general practitioner.	Qualitative interviews collected data on perceptions of patients of their beliefs about medication treatment for depression.
Ogden et al., 1999	UK	≥16	681 90	Patients of 9 general practitioners, from different practices in London, Brighton, Swindon and Shrewsbury.	42.7% of the general practitioners and 60.5% of the patients reported personal experience of depression.	Questionnaire with questions about recognition, treatment and causes of depression	Questionnaire (postal) study measuring beliefs about depression (treatment) and perceived causes.
Priest et al., 1996	UK	≥18	2003	People from the general population (from 143 places around the UK).	55% had either suffered from depression themselves or been in contact with someone who had.	8 group discussions, with eight people on each panel and door-to-door survey with 143 sampling points.	A combined qualitative and quantitative survey measuring beliefs about depression: causes, treatment and stigma.
Riedel-Heller et al., 2005	Germany	≥18	5015	People from the general population who were living in private households. 56.2% female.	General population.	Fully structured face-to-face interviews with vignettes of major depression or schizophrenia.	Interviews with vignettes of major depression or schizophrenia. Treatment preferences, label of the problem, beliefs about the etiology, possible causes and prognosis of mental distress were measured.
Roeloffs et al., 2003	USA	≥18 (mean age=44 years)	1187	Primary care patients from 46 clinics associated with 6 managed care organizations 73% female.	Depressed patients: 40% with a 12 month status, 60% lifetime/symptoms only status.	CIDI and a baseline PAQ was taken. Stigma was assessed by a measure devised by the author.	Questionnaire study measuring perceived stigma.
Rokke & Scogin, 1995	USA	18–47 60–97	135 116	95% University students (50% female), the rest volunteered when recruiting older adults (79% female) from the community.	General population: younger and older people.	BDI, Attitudes toward Seeking Professional Psychological Help scale, credibility questionnaire and TEL.	Questionnaire study measuring perceived need, perceived helpfulness of treatment and stigma.
Sareen et al., 2005a	Canada	15–64	8116	Population-based sample of residents from Ontario	General population with different psychiatric disorders.	UM-CIDI, GWB, perceived need and QoL was measured by several self-made questions.	Questionnaire study measuring perceived need.

(continued on next page)

Appendix 1 (continued)

First author	Country	Age	Number of participants	Respondents	Clinical status	Measurements	Study design and focus
Sareen et al., 2005b	Canada	≥15	36816	Data from the Canadian Community Health Survey. 55% female.	General population with different psychiatric disorders (+/- 12%).	CIDI, suicide, chronic physical disorders, QOL, social support and help-seeking behavior. n/a	Questionnaire study measuring perceived need and barriers to care.
van Schaik et al., 2004	The Netherlands	n/a	n/a	6 studies (9 articles) were about treatment preferences.	n/a		Systematic review of treatment preferences for depressive disorder in primary care.
Schnittker, 2003	USA	Unknown ≥18?	1387	Respondents of the General Social Survey (GSS) 1998. Blacks (African American) and whites.	General population.	Willingness to use, benefits and side-effects of psychiatric medication were measured	Questionnaire study measuring beliefs about antidepressant drugs.
Sirey et al., 2001a	USA	≥18 18–64 65+	92 63 29	Outpatients seeking treatment from a psychiatric outpatient clinic (multi-service academic setting).	All had a major depressive disorder.	CES-D, SCID, Ham-D, GAF, CDS, IIP and Stigma coping scale were taken.	Questionnaire study measuring beliefs about perceived stigma.
Sirey et al., 2001b	USA	≥18	134	Outpatients newly admitted for treatment in 6 psychiatric outpatient clinics. 61% female	Depressed patients who had been taking an antidepressant medication for at least one week.	CES-D, SCID, Ham-D, GAF, CDS, IIP, PEOT and Stigma coping scale were taken.	Questionnaire study measuring beliefs about perceived stigma.
Srinivasan et al., 2003	Canada	21–72	102	Patients who were referred to the psychiatric outpatient clinic of a community general hospital. 65.7% female.	83% unipolar depression, 14% bipolar depression, 3% dysthymia.	9-item self-report questionnaire on perceptions of the cause(s) of depression.	Questionnaire study measuring beliefs about causes for depression.
Thacher et al., 2005	USA	≥18 (mean age=40 years)	104	Patients seeking treatment for a new episode of major depressive disorder at an HMO mental health clinic. 75% were women.	The sample included individuals with major depression, 45% were seeking treatment for the first time, others were previously treated individuals.	Patients filled out a survey that included 10 attitudinal questions about their preferences for the elements of depression treatment programs	Questionnaire study measuring treatment preferences. A latent-class model was also used to identify and characterize groups who share similar attitudes towards treating depression.
Thwaites et al., 2004	UK	17–67 17–63	123 105	Clinical sample: attenders from 2 NHS centers. Non-clinical sample: recruited from 3 FE colleges & social service center. (54.5% and 80% female resp.)	82.2% had BDI scores of mild-severe depression. 36.5% had BDI scores of mild-severe depression.	BDI (depression), CFSEI-2 (self-esteem) and RDF were taken (self-report).	Questionnaire study measuring reason giving for depression=beliefs about causes of depression.
Tully et al., 2006	Australia	16–82	196	Outpatients of a tertiary referral mood disorders unit at a teaching hospital. 59% female	30% melancholic and 70% non-melancholic depression. 23% had a first episode of depression.	BDI, a questionnaire examining beliefs about causes of depression and Ham-D.	Questionnaire study measuring beliefs about causes of depression.
van Voorhees et al., 2005	USA	16–29	10,962	Young adults 75.9% female.	12.7% had a CES-D score above 16, indicating a moderate to greater likelihood of having major depression.	Internet-based screening test for depression, CES-D and questions about acceptance of a diagnosis of depression, and beliefs/social norm.	Internet-based screening test for depression measuring beliefs about and attitudes to depression: causes, treatment and stigma.

Appendix 1 (continued)

First author	Country	Age	Number of participants	Respondents	Clinical status	Measurements	Study design and focus
Wagner et al., 2005	USA	Unknown ≥ 18?	342	Primary care patients from 5 university- affiliated primary care clinics. 62% female.	80% (273) had a current diagnosis of an anxiety disorder and 20% (69) with no disorder. 45% was depressed.	Screening in waiting rooms and a telephone diagnostic interview, CIDI and questions about beliefs about medication and psychotherapy.	Telephone survey measuring beliefs about psychotropic medication and psychotherapy for anxiety.
Wall & Hayes, 2000	USA	17–49	160	Students who sought help at the counseling center of a university. 78% female.	31% was depressed, 37% 'dysphoric', 32% asymptomatic.	HCOM-C, CDSII and BDI were taken. Structured clinical interviews at intake.	Questionnaire study measuring beliefs about causes of depression.
Wetherell et al., 2004	USA	18–59 ≥ 60	217	Primary care patients from 4 medical clinics: 3 university- affiliated and 1 VA health care-affiliated.	Younger and older patients had a treatment history in 29% and 51% resp.	Patients were asked to fill out a set of questionnaires in the waiting room and at home.	Questionnaire study measuring beliefs about perceived barriers to treatment.
Zeitlin et al., 1997	UK	18–64 65–86	80 100	Younger and older general practice attenders from one practice in London. 64% and 75% female resp.	31% of the younger and 21% of the older patients were 'depression cases'.	GDS15 (for the old), GDS (for the young) and the Attitude to Depression Questionnaire (ADQ).	Questionnaire study measuring beliefs about causes of depression and antidepressant drugs.

Appendix 2. SUMARI package validity checklist for assessing the validity of descriptive/correlational studies

Reviewer:	Date:			
Author:	Year:			
Observational Studies	Yes	No	Unclear	N.a.
Is the study based on a random or pseudo-random sample?				
Is the sample of adequate size and representative of the population? The population is				
Are the criteria for inclusion in the sample clearly defined?				
Were hypotheses linked to explicit theoretical framework?				
Did measures have acceptable reliability? Instruments were				
Did measures have acceptable validity? Instruments were				
If comparisons are being made, was there sufficient description of groups?				
Was an appropriate statistical analysis used?				
Were the findings statistically or clinically significant?				
Were findings linked to theoretical framework?				
Are the findings generalisable?				
Total				

Reviewers Comments:

From: The JBI-Meta Analysis of Statistics Assessment and Review Instrument (JBI-MASARI), The Joanna Briggs Institute, Adelaide, 2003.

Appendix 3. Degrees of credibility

Unequivocal [E]: evidence beyond reasonable doubt, which may include findings that are matter of fact, directly reported/observed and not open to challenge.

Credible [C]: evidence that is, although an interpretation, plausible in light of the data and theoretical framework. The interpretations can be logically inferred from the data but, because the findings are essentially interpretive, they can be challenged.

Unsupported [S]: when none of the other level descriptors apply and when, most notably, findings are not supported by the data.

These three levels of evidence are incorporated into the Joanna Briggs Institute System for the Unified Management of the Assessment and Review of Information (JBI-SUMAI) software, The Joanna Briggs Institute, Adelaide, 2003.

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