Chronic care model for the management of depression: Synthesis of barriers to and facilitators of success

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CHRONIC CARE MODEL FOR THE MANAGEMENT OF DEPRESSION: SYNTHESIS OF BARRIERS TO AND FACILITATORS OF SUCCESS

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ABSTRACT

Depression is a socially and physically disabling condition. The chronic care model (CCM) was developed to promote better management of long-term conditions such as depression in primary care settings. The aim of the study was to identify barriers to and facilitators of success when implementing the CCM for the management of depression in primary care. A systematic search was conducted in electronic databases from January 2005 to December 2011. Thirteen articles met the inclusion criteria and were reviewed by means of a thematic analysis. The barriers were categorised under two themes, Lack of organisational, administrative and professional ability to change and implement the components of the CCM, and Lack of clarity pertaining to the responsibility inherent in the role of care manager (often a nurse) when it comes to promoting the patients' self-management ability. In terms of the facilitators of success, two themes emerged, Leadership support and vision and Redesigning the delivery system. When shaping an environment for organisational change, leadership and professionals must work towards a common goal and vision. Such processes require a care manager with a clear role and responsibilities in order for the health care system to meet the needs of the person with depression.

Key words; Barriers, chronic care model, facilitators of success, depression management, implementation.

INTRODUCTION

Depression is an important cause of disability and the 4th leading contributor to the global burden of disease in 2000 (WHO 2012). The rate of depression has increased markedly over the past decade (Compton *et al.* 2006). By the year 2020, depression is projected to reach 2nd place in the ranking for all ages and both sexes (WHO 2012). Patten (2009) found that the estimates in a community sample were nearly twice as high (l9.7%) as the lifetime prevalence reported in cross-sectional studies during the same time period. Late life depression is very common in primary care settings, affecting at least 5% to 10% of older primary care patients (Blazer 2003).

Depression is a socially and physically disabling condition associated with poor self-care, adverse medical outcomes, increased mortality and risk of suicide (Murray & Lopez l996, Unützer *et al.* 2001). It is difficult to find a universal definition of or generally accepted criteria for depression. Quality concerns have surfaced in the mental health arena, where less than 15 % of patients with chronic problems such as major depression, panic disorder or generalised anxiety disorder receive evidence-based treatment (Wang *et al.* 2000). Interest in evidence-based treatment and implementation issues has increased in the field of human services. According to Dawes *et al.* (2005 p. 1), 'evidence based practice (EBP) requires that decisions about health care are based on the best available, current, valid and relevant evidence'. Implementation can be related to the development of EBP and programmes as well as to the concern that consumers will not benefit unless such practices and programmes are correctly implemented (Johansson 2010).

Wagner *et al*. (2001) presented the chronic care model (CCM) to promote quality and management of long-term conditions such as depression by means of more integrated organisation of care. The thinking that underpins the CCM is that healthcare systems represent the main barrier. The CCM is not an explanatory theory, but an evidence-based

guideline and synthesis of the best available evidence. The model is intended to be flexible and open to change when new evidence emerges (Wagner *et al.* 2001). According to Wagner *et al.* (2001), the CCM consists of 6 components; 1) community resources and policy, 2) the health system and the organisation of health care, 3) self-management support, 4) delivery system design, 5) decision support and 6) clinical information systems.

There is a great deal of research on depression interventions in primary care. A meta-analysis of interventions to improve care for chronic illnesses including depression revealed that programmes with at least one CCM element had consistently beneficial effects on clinical outcomes and care processes across all conditions studied (Tsai *et al.* 2005). Several randomised control trials (RCTs) as well as other studies have incorporated elements of the CCM for depression management (Kilbourne *et al*. 2004). Reviews employing elements of the CCM have been conducted by Kristofco and Lorenzi (2007); Coleman *et al.* (2009) and Fuentes (2009). Kristofco and Lorenzi (2007) indicated that collaborative care was the most promising approach for quality improvement in the application of the CCM strategy. Coleman *et al.* (2009) suggested that the CCM can guide the redesign of practice, leading to improved care and better health outcomes. Fuentes *et al.* (2009) found a need for change in order to improve patient outcomes. However, none of these reviews identified the barriers to and facilitators of success when implementing one or all parts of the CCM in the management of depression. As stated by Solberg *et al.* (2006), there are no comprehensive examples of the implementation of the CCM that reveal the most effective changes. However, several barriers have been described in relation to which measurement system to use when validating the assessment of chronic illness care (Bonomi *et al.* 2002; Glasgow *et al.* 2005). Solberg *et al.* (2001) stated that the barriers to the implementation of the CCM should not be underestimated. The main problem was described as encouraging clinicians to adopt the model and commit to work environments characterised by limited resources and low morale

(Solberg *et al.* 2001). As suggested by Kilbourne *et al.* (2004)*,* future studies should focus on both barriers to and facilitators of good depression care, as well as on cost analyses and employment-related outcomes.

AIM

The aim of the study was to identify barriers to and facilitators of success when implementing the CCM for the management of depression in primary care.

METHOD

This systematic review was inspired by Pope *et al.* (2007) and Dixon-Woods *et al.* (2006). According to Dixon-Woods *et al.* (2005)*,* current systematic review methods have tended to favour quantitative forms of evidence and often disregard qualitative evidence. Excluding any type of evidence on the grounds of its methodology could have potentially serious consequences (Dixon-Woods *et al.* 2005).

Literature search

We combined a number of strategies, including a systematic search of the following electronic databases; EBSCOhost/Academic Search Premier/CINAHL, OVID MEDLINE, PubMed, ProQuest and Cochrane, from January 2005 to December 2011. The search also included relevant theoretical papers as suggested by Dixon-Woods *et al.* (2006). The following search words were used in combination and separately; Chronic Care Model, primary care, depression. In addition, we conducted a manual search related to the topic. The searches revealed 797 abstracts, non-empirical, theoretical and empirical studies. However*,* the majority did not meet the inclusion criteria despite the low threshold intended to maximise the number of studies on the implementation of and/or theoretical discussion on the CCM.

Our intention was to prioritise papers that appeared relevant to the aim as opposed to particular types of study or paper that met specific methodological standards as suggested by Dixon-Woods *et al*. (2006). In view of the need to limit the number of papers in a synthesis, we decided to include 13 in this review.

Inclusion and exclusion criteria

A total of 65 studies and papers were read and 13 deemed appropriate as they met the inclusion criteria; published in English, implementation or use of the CCM, primary care and depression as one of the chronic illnesses covered. The exclusion criteria were; not using the CCM, chronic illnesses not including depression and reviews. Studies published in books and dissertations were also excluded.

Five quantitative, four qualitative and four theoretical studies were included in this review (Table 1).

Assessment of the quality of the studies

When assessing the quality of the studies, the researchers adapted a framework from both the qualitative and the quantitative research traditions (Evans & Kowanko 2000). According to Slade and Priebe (2006), EBP is associated with a particular understanding of what constitutes evidence. In the process of evaluating the evidence in the quantitative studies, the authors reviewed the methodological procedures related to implementation and design such as sample size, reliability, validity and transferability (Schneider *et al*. 2007). In the qualitative studies, the authors reviewed the use of methodology and concepts such as trustworthiness, credibility, confirmability, dependability and transferability (Lincoln & Guba 1985; Polit & Beck 2010). The evaluation included how the implementation process was described as well as its design and analysis.

Thematic analysis

The present review used thematic analysis to produce a synthesis, as described by Pope *et al.* (2007), for identifying, grouping and summarising findings. The thematic analysis included quantitative as well as qualitative data and was based on a narrative inductive approach in which the themes emerged from the analysis process. Themes were identified by reading and re-reading the studies in order to synthesise the findings, primarily on the basis of the use of words and text. By identifying patterns and concepts across the data, the authors searched for common meanings that could be considered expressions describing the barriers to the CCM and made a narrative synthesis of the data as suggested by Dixon-Woods *et al*. (2006) and Pope *et al*. (2007). The process explored the frequency of certain themes and was refined by the identification of key themes and sub-themes. The authors discussed the themes and sub-themes several times before finally reaching consensus on the labelling.

A thematic analysis can have some important limitations when exploring data (Pope *et al.* 2007). The intention was to identify how the studies described, expressed or understood important aspects of implementing the CCM. In order to ensure trustworthiness, the authors attempted to avoid bias by not focusing on one study at the expense of another, as recommended by Pope *et al.* (2007).

Determining quality

The authors reviewed the methodological procedures of the five quantitative studies in terms of; implementation, design, measurements, sample size, statistical analysis and generalisation (Schneider *et al.* 2007; Polit & Beck 2010). Demographic characteristics, ethical approval and context were evaluated in all of the empirical studies.

Please insert Table 1 about here

Implementation; Four of the quantitative studies were on the subject of implementation (Table 1).

Design; Three studies were surveys (Table 1). One was part of a larger evaluation (Pearson *et al.* 2005) and one had a time-series design (Katzelnick *et al.* 2005).

Sample size and response rate; Four of the studies had a small sample (Table 1). One study had a low response rate (Pearson *et al*. 2005), while another reported a high response (Schmittdiel *et al.* 2006).

Measurements; One study recommended using more sensitive, reliable and valid tools (Solberg *et al.* 2006). Four studies employed self-reported measurements (Katzelnick *et al.* 2005; Pearson *et al*. 2005; Meredith *et al.* 2006; Schmittdiel *et al*. 2006). Two studies stated that the validity of the measures used was uncertain (Schmittdiel *et al.* 2006; Solberg *et al.* 2006).

Statistical analysis; The analysis is described in Table 1.

Validity; It was explained in one study that construct validity could be related to how well the concepts employed correlated with the CCM (Schmittdiel *et al.* 2006). Four of the studies had no methodological evaluation or description of validity (Katzenick *et al.* 2005; Pearson *et al.* 2005; Meredith *et al*. 2006; Solberg *et al.* 2006).

Generalisation; It was stated in one study that the diverse sample of organisations might preclude generalisation of the findings to all primary care contexts (Meredith *et al.* 2006). Another study focused on the small sample size that might limit generalisation of the findings (Schmittdiel *et al.* 2006). Three studies with small samples had no evaluation of whether or not and how the findings could be generalised to a broader population (Katzelnick *et al.* 2005; Pearson *et al.* 2005; Solberg *et al.* 2006).

Future studies; It was reported in two studies that the implementation of the CCM could guide future efforts to examine the measures of implementation performance (Meredith *et al.* 2006; Pearson *et al.* 2005). Two studies described the need for more research to estimate changes in the CCM process (Katzelnick *et al*. 2005; Solberg *et al.* 2006). Solberg *et al.* (2006) claimed that the findings must be considered preliminary and tentative.

In order to determine the quality of the methodology in the *qualitative studies,* we focused on implementation, design, trustworthiness and analysis.

Implementation; Three of the qualitative studies were on the subject of implementation (Belnap *et al.* 2006; Hroscikoski *et al.* 2006; Nutting *et al.* 2007).

Design; Of the qualitative studies, three were described as case studies, (Bachman *et al.* 2006; Belnap *et al.* 2006; Hroscikoski *et al.* 2006), one was based on grounded theory (Henke *et al.* 2008), while a further four were theoretical (Solberg *et al.* 2005; McEvoy & Barnes 2007; Suter *et al.* 2008; Fortney *et al.* 2010).

Trustworthiness; In one study it was stated that *credibility* was enhanced by the research team's experience (Hroscikoski *et al.* 2006). In another, it was suggested that reliability could be strengthened by a team member manually coding the transcripts (Henke *et al.* 2008). In three studies (Bachman *et al.* 2006; Belnap *et al.* 2006; Henke *et al.* 2008), no mention was made of the concepts of trustworthiness, validity or reliability as recommended by Lincoln and Guba (l985).

Analysis; Three studies did not describe the type of analysis used (Table 1). In one study it was stated that the analysis was described elsewhere (Hroscikoski *et al.* 2006).

Generalisation; In one study it was suggested that generalisation could be improved by using a large health care system in one region (Hroscikoski *et al.* 2006).

Evaluation, demographic and socio-economic characteristics, ethical approval and contextual aspects

Demographic and socio-economic characteristics. Three of the quantitative (Meredith *et al.* 2006; Schmittdiel *et al.* 2006; Solberg *et al*. 2006) and two qualitative studies (Belnap *et al.* 2006; Hroscikoski *et al.* 2006) described the demographic characteristics of the participants.

Context. The participants in the studies were from different primary care institutions (Table 1).

SYNTHESIS OF THE FINDINGS

Barriers

The barriers identified were categorised under two themes, Lack of organisational, administrative and professional ability to change and implement the CCM components and Lack of clarity pertaining to the responsibility inherent in the role of care manager (often a nurse) when it comes to promoting the patients' self-management ability. In terms of the facilitators of success, two themes emerged; Leadership support and vision and Redesigning the delivery system.

Lack of organisational, administrative and professional ability to change and implement the components of the CCM

A barrier to implementing the CCM was the challenge of persuading an organisation's administrative and professional staff to change. Four studies revealed that professionals were unwilling to implement changes, thus making this the most common barrier, mainly on the part of primary care providers (Solberg *et al.* 2005, Hroscikoski *et al.* 2006, Meredith *et al.* 2006, McEvoy & Barnes 2007). Solberg *et al.* (2005) described how primary care physicians needed to change their approach when treating patients with chronic diseases. Meredith *et al.*

(2006) explained the problem of encouraging physicians to accept and implement changes. McEvoy and Barnes (2007) discussed how to develop a care plan where leadership helped to overcome resistance to change. It was explained in three studies that lack of ability to change was related to size, as it could be difficult to distribute information to every member of a large organisation (Hroscikoski *et al.* 2006, Meredith *et al.* 2006, Schmittdiel *et al*. 2006). Meredith *et al.* (2006) emphasised that change was inconsistent with the model's objective of achieving a successful outcome across all six components. Pearson *et al.* (2005) explained the difficulty involved in improving all components of the CCM within the space of one year. Hroscikoski *et al*. (2006) revealed that implementation was not equally divided across all six components. Schmittdiel *et al.* (2006) reported that only l.3% of the participants implemented all of the 6 CCM components.

Lack of clarity pertaining to the responsibility inherent in the role of care manager (often a nurse) when it comes to promoting the patients' self-management ability.

In this theme four of the studies (two qualitative and two theoretical) described lack of clarity pertaining to the role and responsibilities of the care manager as the greatest barrier to CCM implementation (Belnap *et al.* 2006, Solberg *et al.* 2005, Henke *et al.* 2008, McEvoy & Barnes 2007). Belnap *et al.* (2006) stated that the care manager is responsible for providing patients with support and encouragement, monitoring their depressive symptoms and teaching them self-management skills. Thus in order to overcome barriers, patients must be involved as active partners in the management of their condition (McEvoy & Barnes 2007; Henke *et al.* 2008). Suter *et al.* (2008) suggested integrating theories from fields other than medicine, for example, adult education and social psychology, in order to contribute knowledge that seems to have been neglected in the past. Bachman *et al.* (2006) recommended self-management programmes to structure the care manager's encounters with depressed individuals by

developing written action plans for tracking their current stage of change and goals. Henke *et al.* (2008) revealed that one important part of the care manager's role is educating patients as a means of overcoming resistance and providing information on the cause, symptoms and history of depression, treatment risks, benefits, outcomes and early warning signs of relapse. In two studies it was stated that once the person is ready to make a change, improved self-efficacy and self-management become evident when using an Internet evidence-based guideline (Suter *et al.* 2008; Fortney *et al.* 2010).

Facilitators

Leadership support and vision

In the CCM framework, Pearson *et al.* (2005) found changes in proactive follow-up, where leadership support received the greatest focus in terms of quantity and depth. Meredith *et al.* (2006) reported that leadership support, structure and location were the most frequently reported facilitators for implementing improvements. Hrosciskoski *et al.* (2006) revealed that leadership should be spread over multiple levels from clinical leaders to various professional categories. New forms of teamwork were described as developing trust, communication and stable, self-reinforcing work relationships and it was essential to have a shared vision of enhanced care and change among the leadership and clinicians at practice level (Hrosciskoski *et al.* 2006). Hrosciskoski *et al.* (2006) described the importance of a few strong clinical leaders, such as the head physician and nursing managers, who envisaged the specific changes needed and of supervisors who supported their vision. Solberg *et al.* (2006) explained that the CCM seemed to help leaders to adjust to certain constraints and options resulting from organisational priorities.

Redesigning the delivery system

During implementation it may be necessary to redesign the delivery system, which requires focus on proactive follow-up, organisational characteristics and the care manager's role (Pearson *et al.* 2005¸ Meredith *et al.* 2006).X Hroscikoski *et al.* (2006) reported that change required major alterations and time. McEvoy and Barnes (2007) discussed how to redesign organisational systems and change the emphasis from reactive to planned care and prevention. In total, nine studies described coordination and teamwork as facilitators of success when implementing the CCM (Katzelnick *et al*. 2005; Pearson *et al*. 2005; Solberg *et al*. 2005; Solberg *et al.* 2006; Belnap *et al.* 2006; Hroscikoski *et al*. 2006; Meredith *et al.* 2006; Henke *et al*. 2008; Fortney *et al.* 2010). Pearson *et al*. (2005) pointed out that a team approach aimed at improving care coordination should include telephone follow up of patients, the implementation of planned home visits and walk-in appointments. Solberg *et al.* (2005) stated that a team approach is especially helpful for depressed patients who are less likely to adhere to treatment recommendations. In two studies it was stated that the role of the nurse on the team included care coordination, symptom monitoring and informational support to ensure compliance and efficacy in achieving self-care (Hroscikoski *et al.* 2006; Henke *et al.* 2008). When redesigning the delivery system, the implementation of the CCM was related to information systems (Katzelnick *et al*. 2005; Pearson *et al.* 2005; Meredith *et al.* 2006; Solberg *et al*. 2006; Suter *et al*. 2008). Two of the above-mentioned studies described changes in information systems as a major success factor (Pearson *et al*. 2005; Meredith *et al.* 2006).

DISCUSSION

The aim of the study was to identify barriers to and facilitators of success when implementing the CCM for the management of depression in primary care. The barriers identified were categorised under two themes; Lack of organisational, administrative and professional ability to change and implement the CCM components, and Lack of clarity pertaining to the responsibility inherent in the role of care manager (often a nurse) when it comes to promoting the patients' self-management ability. In terms of the facilitators of success, two themes emerged; Leadership support and vision and Redesigning the delivery system.

The possibility of facilitating change in practice seemed to be an important factor in the implementation of the CCM. However, according to Melnyk and Fineout-Overholt (2005), lack of administrative support in the implementation process makes implementation impossible. Efforts to bring about change seemed limited and were met by several forms of resistance on the part of professionals (Meredith *et al.* 2006), described as resistance in an organisation (Prochaska *et al.* 2001). Resistance could be the result of a poorly planned implementation and the main reason for the failure of an implementation initiative. According to Melnyk and Fineout-Overholt (2005), attempts to change a system can lead to scepticism. Evidence alone cannot change practice, as the barriers can pose significant challenges (*cf.* Melnyk and Fineout-Overholt *et al.* 2005) and should not be underestimated (McEvoy & Barnes 2007). Even the best strategic plans can go awry due to barriers to implementation, which seemed difficult if the goal was to cover all six components of the CCM. One could overcome these barriers using one component, for example self-management support, described as a solution in three of the studies (Solberg *et al.* 2006, Meredith *et al*. 2006, Schmittdiel *et al.* 2006). Lack of resources such as time, money and personnel constitutes a significant barrier (*cf.* Pearson *et al.* 2005, Meredith *et al*. 2006). However, Wagner *et al.* (2001) revealed that the CCM could serve as a guide to changing the

organisation and health care system and finding solutions to resolve financial problems. As the professionals seemed overburdened with paperwork and administrative tasks**,** they had difficulty allocating time to help depressed persons.

The responsibility and role of the care manager seem important for the implementation of the CCM (*cf.* Solberg *et al.* 2005) and appear to need clarification (*cf.* Belnap *et al.* 2006). In order to facilitate clarification, one could initiate a discussion about how practice should include cooperation, relationships and information flow (*cf.* Henke *et al.* 2008) and how to make guidelines available to patients (Pearson *et al.* 2005). Building a personal relationship through face-to-face contact should be one of the most important aspects of the care manager's role in line with the more client-centred approach suggested by Bachman *et al.* (2006). Such an approach highlights the fact that change is an individualised process, consistently meeting the patient 'where she/he is' and adopting a non-directive, non-judgmental attitude (*cf.* Bachman *et al.* 2006). Care managers could engage the patient in problem-solving in order to address the latter's barriers and positively reinforce change (Bachman *et al*. 2006), which represents an existential view of human beings' different needs. Wagner *et al.* (2001) stated that in order to achieve self-management, the focus must shift from a didactic education to encouragement and support. This view is relatively new and underdeveloped in primary care settings. The care manager might need to reflect on the individuals' need to be seen as human beings. A reflective way of being and acting is based on theories that focus on values, emotions and recognises each person's courage to live and act as suggested by Tillich (1994). A sense of strength can enhance human accomplishment and personal well-being.

Leadership has an essential role, as the results revealed the need to involve health professionals in creating a plan that facilitates their commitment to the project (*cf.* Melnyk & Fineout-Overholt 2005). According to Melnyk and Finout-Overholt (2005), communication is

the key to successful organisational change. Leadership could shift from using the whole CCM to a few focused concepts (Hroscikoski *et al.* 2006). Facilitators of success seemed to include leadership, key policy and care management (Belnap *et al*. 2006). Leadership must be visible and communities as well as professionals should collaborate in the planning and design of the programme prior to its implementation. However, the most important aspect seemed to be involvement by all parties. Melnyk and Fineout-Overholt (2005) suggested that the narration and sharing of real life examples within EBP can make a difference. A key to success could be developing leadership in the team, often comprising a nurse, psychologist, primary care physician or psychiatrist. Vision is described as important for leadership, and it is essential to communicate visions that appeal to people's emotions.

Redesigning the delivery system was described as a success factor (Pearson *et al.* 2005; Meredith *et al*. 2006; Hroscikoski *et al.* 2006; McEvoy & Barnes 2007). In order to be successful, one has to make some far-reaching changes in the way in which care is provided for depressed persons. One method could be to reorganise the management of depressed patients. However, such redesigning seemed to require new attitudes to and awareness of the value of relationships, coordination and teamwork, mentioned in one way or other in the majority of the included studies. Wagner *et al.* (2001) explained that the delivery system should provide high-quality care and every depressed person must have a practice team that organises and coordinates it. Success seemed to be related to the care management contribution, especially the decisions made by key policy and opinion leaders (*cf.* Belnap *et al.* 2006). Most organisations today have electronic records for coordinating care as well as an established registry of patients diagnosed with depression (*cf.* Solberg *et al.* 2005; Schmittdiel *et al.* 2006). The study by Pearson *et al.* (2005) might already be out-of-date in this regard, with its comments about the learning of computer skills.

Limitations of the reviewed studies

The implementation of all CCM components in the quantitative studies seemed to be a methodological limitation related to measurements (*cf.* Pearson *et al*. 2005). To avoid methodological limitations, a conceptual framework for interventions and change-related activities could be developed, in addition to procedures, interview protocols and a rating system to improve the implementation methodology, as suggested by Polit and Beck (2010). Implementation can be deficient across all CCM components and the measurements subject to bias. As demonstrated by Solberg *et al.* (2006), when depression was the focus of the improvement effort, the main components of the quality of depression care seemed to remain the same.

CONCLUSION

These findings highlight the need to adopt the CCM to enhance the management of depression in mental health nursing. The evidence demonstrated that due to barriers, implementation of the CCM in primary care settings is not an easy task. Change in the practical setting can face many challenges such as resistance on the part of mental health nurses. Leadership needs a vision that appeals to mental health nurses' emotions. Redesigning the delivery system requires a mental health nursing leadership and management that are aware of the value of relationships, coordination and teamwork. Building a personal relationship by means of an existential view of the human being's various needs appears to be one of the most important aspects of the care manager's role. Another crucial aspect can be encouraging the team to collaborate with the health care system in primary and specialist care.

Conflict of interest statement

There is no conflict of interest related to this systematic review.

REFERENCES

*Backman, J., Swenson, S., Reardon, M.E. & Miller, D. (2006). Patient self-management in the primary care treatment of depression. *Administration and Policy in Mental Health and Mental Health Services Research, 33* (1), 76-85.

*Belnap, B.H., Kuebler, J., Upshur, C. *et al.* (2006). Challenges of implementing depression care management in the primary care setting. *Administration and Policy in Mental Health and Mental Health Services Research, 33* (1), 65-75.

Blazer D.G. (2003). Depression in late life: Review and commentary. *Journal of Gerontology: Medial Sciences 58A,* 249-265.

Bonomi, A.E., Wagner, E.H., Glasgow, R.E. & VonKorff, M. (2002). Assessment of chronic illness care (ACIC): a practical tool to measure quality improvement. *Health Service Research, 37,* 791-820.

Coleman, K., Austin, B.T., Brach, C. & Wagner, E.H. (2009). Evidence on the chronic care model in the new millennium. *Health Affairs, 28* (1), 75-85.

Compton, W., Conway, K.P., Stinson, F.S. & Grant, B.F. (2006). Changes in the prevalence of major depression and comorbid substance use disorders in the United States between 1991-1992 and 2001-2002. *American Journal of Psychiatry, 163* (12), 2141-2147.

Dawes, M., Summerskill, W., Glasziou, P. *et al.* (2005). Sicily statement on evidence-based practice. *BMC Medical Education, 5* (1), 1-7.

Dixon-Woods, M.D., Agarwal, S., Jones, D., Young, B. & Sutton, A. (2005). Synthesizing qualitative and quantitative evidence: a review of possible methods. *Journal of Health Service Research Policy, 10* (1), 45-53.

Dixon-Woods, M., Cavers, D., Agarwal, S. *et al.* (2006). Conducting a critical interpretative synthesis of the literature on access to healthcare by vulnerable groups. *BMC Medical Research Methodology, 6* (35), 1-13.

Evans, E. & Kowanko, I. (2000). Literature reviews: evolution of a research methodology. *Australian Journal of Advanced Nursing, 18* (2), 33-38.

Fixsen, D.L., Naoom, S.F., Blasé, K.A., Friedman, R.M. & Wallace, F. (2005). *Implementation Research: A Synthesis of the Literature.* Tampa, FL: University of South Florida.

*Fortney, J.C., Pyne, J.M., Christopher, A. *et al.* (2010). A web-based clinical decision support system for depression care management. *Administrative Journal of Management Care, 16* (11), 849-854.

Fuentes, L.A. (2009). Depression in primary care: The evidence supporting the need for system change. *Internet Journal of Advanced Nursing Practice, 19* (2), 1-11.

Glasgow, R.E., Wagner, E.H., Schaefer, J., *et al*. (2005). Development and validation of the patient. Assessment of chronic illness care (PACIC). *Medical Care, 43***,** 436-444.

Graneheim, U.H. & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today, 24*, 105-112.

*Henke, R.M., Chou, A.F., Chanin, J.C., Zides, A.B. & Hudson Scholle, S. (2008). Physician attitude toward depression care interventions: Implications for implementation of quality improvement initiatives. *Implementation Science, 3* (40), 1-10.

*Hroscikoski, M.C., Solberg L.I., Sperl-Hillen, J.M. *et al.* (2006). Challenges of change: A qualitative study of chronic care model implementation. *Annals of Family Medicine, 4* (4) 317-326.

Johansson, S. (2010). Implementing evidence-based practices and programmes in the human services: lessons from research in public administration. *European Journal of Social Work, 13* (1), 109-125.

*Katzelnick, D.J., Von Korff, M., Chung, H., Provost, L.P. & Wagner, E.H. (2005). Applying depression-specific change concepts in a collaborative breakthrough series. *Journal on Quality and Patient Safety, 31* (7), 386-397.

Lincoln, Y.S. & Guba, E.G. (l985). *Naturalistic Inquiry.* Newbury Park, CA: Sage.

Kilbourne, A.M., Schulberg, H.C., Post, E.P. *et al.* (2004). Translating evidence-based depression management services to community-based primary care practices. *Milbank Quarterly, 82,* 631-659.

Kristofco, R.E. & Lorenzi, N.M. (2007). How quality improvement interventions can address disparities in depression. *Journal of Continuing Education in the Health Professions, 27* (1), 33-39.

*McEvoy, P. & Barnes, P. (2007). Using the chronic care model to tackle depression among older adults who have long-term physical conditions. *Journal of Psychiatric and Mental Health Nursing, 14,* 233-238.

Melnyk, B.M. & Fineout-Overholt, E. (2005). *Evidence-Based Practice in Nursing & Healthcare - A Guide to best Practice*. Philadelphia: Lippincott Williams & Wilkins.

*Meredith L.S., Mendel P., Pearson M. *et al.* (2006). Implementation and maintenance of quality improvement for treating depression in primary care. *Psychiatric Services, 57* (1), 48-55.

Murray, C. & Lopez, A. (1996). *The Global Burden of Disease. A Comprehensive Assessment of Mortality and Disability from Diseases, Injuries and Risk Factors in 1990 and Projected to 2020.* Cambridge, MA: World Health Organization and the World Bank.

Patten, S.B. (2009). Accumulation of major depressive episodes over time in a prospective study indicates that retrospectively assessed lifetime prevalence estimates are too low.*BMC Psychiatry,* 9-19. Doi:10.1186/1471-244X/9/19. Available from: http://www.biomedcentral.com/1471-244X/9/19 Assessed: 31 January 2012.

*Pearson, M.L., Wu, S., Schaefer, J. *et al.* (2005). Assessing the implementation of the chronic care model in quality improvement collaborative. *Health Research and Educational Trust, 40* (4), 978-996.

Pope, C., Mays, N. & Popay, J. (2007). *Synthesizing qualitative and quantitative health evidence: A guide to methods.* England: McGraw-Hill Open University Press.

Polit, D.F. & Beck, C.T. (2010). *Essentials of Nursing Research: Appraising Evidence for Nursing Practice.* Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins.

Polit, D.F. & Beck, C.T. (2012). *Nursing Research Generating and Assessing Evidence for Nursing Practice.* Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins.

Prochaska, J.M., Prochaska, J.O. & Levesque, D.A. (2001). A transtheoretical approach to changing organizations. *Administration and Policy in Mental Health, 28 (*4), 247-261.

*Schmittidel, J.A., Shortell, S.M., Rundall, T.G., Bodenheimer, T. & Selby, J.V. (2006). Effect of primary health care orientation on chronic care management. *Annals of Family Medicine, 4* (2), 117-123.

Schneider, Z., Whitehead, D., Elliott, D., Lobiondo-Wood, G. & Haber, J. (2007). *Nursing & Midwifery Research Methods and Appraisal for Evidence-based Practice.* New York: Mosby, Elsevier.

Slade, M. & Priebe, S. (2006). *Choosing Methods in Mental Health Research. Mental Health Research from Theory to Practice.* London: Routledge Taylor and Francis Group.

Solberg, L.I., Fischer, L., Wei, F. *et al.* (2001). A CQI intervention to change the care of depression: a controlled study. *Effective Clinical Practice, 4,* 239-249.

*Solberg, L.I., Trangle, M.A. & Wineman, A.P. (2005) Follow-up and follow-through of depressed patients in primary care: The critical missing components of quality care. *Journal of American Board of Family Practice, 18,* 520-527.

*Solberg, L.I., Crain, A.L., Sperl-Hillen, J.M. *et al.* (2006). Care quality and implementation of the chronic care model: A quantitative study. *Annals of Family Medicine, 4* (4), 310-316.

*Suter, P., Hennessey, B., Harrison, G. *et al.* (2008). Home-based chronic care. An expanded integrative model for home health professionals. *Home Healthcare Nurse, 26* (4), 222-229.

Tillich, P. (1962). *The Courage to Be.* London: Collins Clear-Type Press.

Tsai, A.C., Morton, S.C., Mangione, C.M. & Keeler, E.B. (2005). A meta-analysis of interventions to improve care for chronic illnesses. *The American Journal of Managed Care, 11,* 478-488.

Unützer, J., Katon, W., Williams, J.W jr. *et al*. (2001). Improving primary care for depression in late life: the design of a multicenter randomized trial. *Medical Care, 39,* 785-799.

Wagner, E.H., Glasgow, R.E., Davi, C. *et al.* (2001). Quality improvement in chronic illness care: A collaborative approach. *Journal on Quality Improvement, 27,* 63-79.

Wang, P.S., Berglund, P. & Kessler, R.C. (2000). Recent care of common mental disorders in the United States: prevalence and conformance with evidence-based recommendation. *Journal of General Intern Medicine, 15,* 284-292.

World Health Organization (2012) *Mental Health Depression.* http://www.who.int/mental_health/management/depression/definition/en/# Accessed: 31 January 2012.

Table 1 An overview of the studies on the Chronic Care Model (CCM) in the management of depression in primary care

1st author, year, reference, Country	Method, design, analysis, sample	Context	Summary of the outcome
1.Bachman *et al.* 2006 USA	CCM Qualitative. Case studies. No analysis described.	A focus group of experts met to discuss the key components of self-management programmes.	Six key components emerged; (1) implement behavioural change interventions, (2) plan for crisis and relapse prevention, (3) reestablish personal meaning, (4) attend to patients' experience, context and community, (5) build a patient-clinician partnership and (6) create an integrated self-management support structure.
2.Belnap *et al.* 2006 USA	Implementation of CCM. Qualitative. Case studies. No analysis described.	Municipal employees in Michigan and Massachusetts.	It is important to clarify the scope of care management services when using the CCM. It is necessary to develop, evaluate and compare the quality and value of health care services. It might not be feasible to locate care managers in primary care practices. Quality supervision should be provided for professionals who work as care managers. It can be difficult to find a reliable method for identifying patients who would benefit from a depression care management program.
3.Fortney *et al.* 2010 USA	Theoretical study	Net-DSS in the University of Arkansas.	The Net-DSS has been used to provide evidence-based depression care management to more than 1,700 primary care patients. Intervention protocols can be successfully converted to Web-based decision support systems that facilitate the implementation of evidence-based CCM in routine care with high fidelity.
4.Henke *et al.* 2008 USA	Implementation of CCM. Qualitative. Grounded theory. An analysis based on the grounded theory approach. N=23	17 physicians working in primary care were recruited from three health care organizations in the Southeast, West, and Mid-Atlantic regions.	Six barriers emerged from the interviews: difficulty diagnosing depression, patient resistance, fragmented mental health system, insurance coverage, lack of expertise as well as competing demands and other responsibilities of a primary care provider. A number of

			interventions were deemed helpful for addressing these barriers – including care managers, mental health integration, and education - while others received mixed reviews. Mental health consultation models obtained the least endorsement. Two system-related barriers, the fragmented mental health system and insurance coverage limitations, did not appear to be fully addressed by the interventions.
5. Hroscikoski *et al.* 2006 USA	Implementation of the CCM. Qualitative. Case study. The analysis is described in another study. N=45	A large 600 physician multispecialty group in Minneapolis-St. Paul.	The change process failed to achieve a satisfactory outcome. Several barriers were identified, including too many competing priorities, lack of specificity and agreement about the changes desired in the care process and little involvement on the part of physicians.
6. Katzelnick *et al.* 2005 USA	CCM Quantitative survey. A standard l-5 scale analysis. N=20	Fifteen of 20 teams were from community health centers funded by the Bureau of Primary Health Care in the United States.	Seventeen of the 20 organizations obtained a faculty assessment of at least 4 (5 indicates significant improvement). Patients had the following outcomes: 56% had a significant change in their depressive symptoms at 12 weeks, 87% completed follow-up assessments, 54% continued antidepressant medication for at least 10 weeks and 90% completed a structured diagnostic assessment before treatment.
7.McEvoy & Barnes 2007 UK	CCM Theoretic study.		This study illustrated the difference made by adopting the CCM. Radical changes in work practices may be required to implement the model. There was sufficient evidence to justify a shift in emphasis from research to dissemination and implementation.
8.Meredith *et al.* 2006 USA	Implementation of the CCM. Quantitative. Univariate and network analyses. N=17	Of the 23 organizations 17 were included, of which 11 were community health centers supported by the Health Resources and Services	Despite several challenges, there was evidence of success in terms of implementation and maintenance of quality improvement in depression treatment in primary care.

		Administration's Bureau of Primary Health care in the United States.	
9.Pearson *et al.* 2005 USA	Implementation of the CCM. Quantitative. Descriptive statistics. N=24 N=18	Teams from health care organizations worked together in three learning sessions to improve performance in a specific clinical area in the United States.	Participants were able to implement a large number of diverse QI change strategies, with high CCM fidelity and a modest depth of implementation. QI collaboration is a useful method for promoting change in real world settings.
10.Schmittdiel *et al.* 2006 USA	Implementation of the CCM. Quantitative survey. Regression analysis. N=957	All US medical groups and independent practice associations with 20 or more physicians.	6 of 8 primary care orientation measures were associated with physician organizations' adoption of 11 different attributes related to the 6 components of the CCM. Organizations that adopted 6 core attributes of primary care, representing comprehensive health service delivery and a commitment to overall patient health appeared to use more chronic care management practices.
11.Solberg *et al.* 2005 USA	CCM Theoretical study.		Physicians and clinics that decided to convert to a systematic care management approach for patients with depression and other chronic diseases found the transition difficult. The differences between such an approach and usual care are large for physicians, nurses and patients.
12.Solberg *et al.* 2006 USA	Implementation of the CCM. Quantitative survey Correlation analysis N=17	A 600 physician multispecialty group in the Minneapolis-St.Paul metropolitan region.	Use of new antidepressants did not change, but more patients had follow-up visits. Despite implementation of the CCM and improvements in quality measures for 3 chronic diseases, there were few significant correlations. Demonstrating such a relationship might require greater changes, a larger number of clinics, alterations in other CCM elements, or a more-sensitive measurement tool.
13.Suter *et al.* 2008 USA	CCM Theoretical study		Chronic care coordination assistance and disease management belong within the remit of home-based healthcare

			and should be central in home-based care delivery. The HBCCM is grounded in the CCM and maximizes the potential for successful disease self-management.

Assessing Chronic Illness Care (ACIC), Bipolar collaborative chronic care model (B-CCMs), Chronic Care Model (CCM), (Health-Related Quality of Life (HRQL), Chronic care quality improvement (QI); Home-Based Chronic Care Model (HBCCM), Innovative Care for Chronic Conditions (ICCC) ,The Net Decision Support System (NetDSS); Voluntary chronic care improvement (CCI-I), Three component model (TCM).