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Cost-utility of collaborative care for major depressive disorder in primary care in the Netherlands☆

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ABSTRACT

Objective: Major depression is a great burden on society, as it is associated with high disability/costs. The aim of this study was to evaluate the cost-utility of Collaborative Care (CC) for major depressive disorder compared to Care As Usual (CAU) in a primary health care setting from a societal perspective.
Methods: A cluster randomized controlled trial was conducted, including 93 patients that were identified by screening (45-CC, 48-CAU). Another 57 patients were identified by the GP (56-CC, 1-CAU). The outcome measures were TiC-P, SF-HQL and EQ-5D, respectively measuring health care utilization, production losses and general health related quality of life at baseline three, six, nine and twelve months. A cost-utility analysis was performed for patients included by screening and a sensitivity analysis was done by also including patients identified by the GP.
Results: The average annual total costs was €1131 (95% C.I., €−3158 to €750) lower for CC compared to CAU. The average quality of life years (QALYs) gained was 0.02 (95% C.I., −0.004 to 0.04) higher for CC, so CC was dominant from a societal perspective. Taking a health care perspective, CC was less cost-effective due to higher costs, €1173 (95% C.I., €−216 to €2726), of CC compared to CAU which led to an ICER of 53,717 Euro/QALY. The sensitivity analysis showed dominance of CC.
Conclusion: The cost-utility analysis from a societal perspective showed that CC was dominant to CAU. CC may be a promising treatment for depression in the primary care setting. Further research should explore the cost-effectiveness of long-term CC.
Trial registration: Netherlands Trial Register ISRCTN15266438

Introduction

Major Depressive Disorder (MDD) was ranked fourth in the list of diseases that cause the highest burden of disease in 2002, and in 2030 it is expected to be ranked second worldwide and first in high-income countries [1]. The costs associated with MDD, especially the costs for society, are high [2,3]. The productivity costs attributable to MDD amount to €242 per worker per year [4] and on average account for 60–70% of the total costs associated with depression [2,3].

Research into interventions that reduce the societal burden of MDD is therefore of paramount importance. A promising treatment for MDD is the collaborative care model [5–8] that is based on the World Health Organization (WHO)'s chronic care model. This system intervention aims to increase collaboration between health care professionals and patients, and actively monitors patients' prognoses. A recent study in the Netherlands [9] showed that for patients with MDD, CC is more effective at 3 months (response to treatment 41.9% CC group; 10.5% CAU group). This study compared Collaborative Care (CC) to Care As Usual (CAU) over one year in the primary care setting, including organizational measures, such as introducing a nurse-care manager in primary care, providing Problem Solving Treatment (PST), guided self-help, progress monitoring of the patient and structural availability of a consultant psychiatrist, as well as a web-based provider decision support system. There is an increasing role of economic evaluations in health care decision-making [10]. A review on the economics of CC for

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depression by Jacob et al. (2012) indicates that CC provides good economic value [11]. Another review of the cost-effectiveness of CC showed that CC was associated with high clinical benefits at a low increment in health care costs for older adults [10]. The estimated gains in Quality Adjusted Life Years (QALY) in this review were between 0.02 and 0.12. However, the quality of the studies in this review, as measured by the Consensus on Health Economic Criteria (CHEC) list [12], was low, and the studies had a maximum follow-up period of only 6 months. Another drawback of existing work is that production losses, which are responsible for more than 60% of the societal costs associated with depression, are often not included [2,10]. A recent study by Green et al. (2014) [13], who assessed the cost-effectiveness of collaborative care in a UK primary setting, indicated that collaborative care gained more effect at relatively low costs. Another recent study conducted in Spain [14], which did include productivity costs in their cost-effectiveness analysis, indicated that CC in primary care for depression was only slightly more expensive and induced a larger effect (0.045 QALY). However, the governmental perspective that was adopted was narrow and the costs for presenteeism were not included. In general, the cost-utility studies pertaining to CC for depression were conducted in the United States. This might affect generalizability of studies to other countries or health care systems. In the Netherlands, for instance, GP practices are most often small business units (1–5 GPs per practice, mean 2) with their own culture and rules [15,16]. In addition, in the Dutch health care system, as in the UK, the GP acts as the gatekeeper who refers patients to other professionals [17]. In the USA, primary care practices are generally centrally organized units that are relatively large, and have some form of central regulation in terms of availability of treatment and reimbursement. Specific aspects of differences between the USA primary care situation and the primary care situation in the Netherlands in relation to the development of the CC model are described extensively elsewhere [18].

This study is the first cost-effectiveness study in the Netherlands for CC that is taken from a societal perspective. The higher expected effect of treatment in this study is mainly captured through reduced workplace absences and not through reduced health care expenses for other health care providers.

Usual care for major depression in primary care in the Netherlands includes prescription of antidepressants or referral to psychotherapy [19]. In the CC model, a depression care manager (DCM), usually a qualified nurse, collaborates with a GP and a liaison psychiatrist in order to provide and guideline more structured and adherent depression treatment in primary care. Forty per cent of patients with a diagnosis of a current depressive or anxiety disorder in the primary care setting requesting treatment are treated in accordance with clinical guidelines [20]. Guideline adherence is significantly associated with increased care use but also with corresponding costs [21]. We therefore expect the costs that are associated with CC to be higher compared to usual care. However, as the effect of treatment is also expected to be higher compared to CAU, the additional costs for other health care providers may decrease over time causing the intervention to be cost-effective or even dominant. Dominance indicates a combination of lower costs and higher effects for the treatment under study.

The primary objective of this paper was to assess the cost utility of CC in primary care compared to CAU for MDD in the Netherlands. In the Netherlands, it is compulsory that a cost-effectiveness analysis is performed from a societal perspective, meaning that not only direct medical costs but also productivity costs due to absence from work and presenteeism are taken into account.

Methods

Randomization and recruitment

The cost-utility analysis was conducted along a cluster-randomized controlled trial (RCT), evaluating the effectiveness of CC versus CAU in the primary care setting. Results of this RCT on the effectiveness of CC and design and methodological details of this study have been described elsewhere [9,22]. Computer-generated randomization took place at the level of 18 primary care centers. Each general practice randomized to the CC condition assigned a practice nurse; the DCM. Patients of the respective practices could enter the trial in two ways: either by screening or after identification by their GP. These two ways were used in order to keep selection bias as low as possible. In this study, in order to evaluate possible differences between the group selected by screening and the group selected by the GP, a sensitivity analysis was performed. Screening was done as follows: patients who had consulted the GP in the past six months received the Patient Health Questionnaire [23] (the PHQ-9), and were asked for informed consent by mail. If they scored screen-positive (PHQ9 score ≥ 10), the Mini-International Neuropsychiatric interview (MINI) was administered by telephone. If patients were classified with MDD according to the MINI and were over 17 years old, they were included. Patients were excluded if they were suicidal as established during the MINI and a subsequent doctor interview, had psychotic symptoms, suffered from dementia, drug or alcohol dependence, had insufficient mastery of the Dutch language or if they were already under specialty mental health treatment, as the trial provided treatment in primary care.

Study oversight

The study protocol was approved by the Medical Ethics Committee (METC) of the VU University Medical Center (protocol number 2006/158). This RCT was part of the Depression Initiative, a national initiative to improve depression management in the Netherlands [24]. The study was monitored by the Board every three months.

Interventions

CC

The integrated intervention consisted of problem solving treatment (PST), manual guided self-help, and, if necessary, antidepressants. The DCM provided manual guided self-help (ZHM) and PST, and the GP prescribed antidepressant medication. Remission (PHQ9 < 5) after 18–24 weeks of treatment was the target. Every two weeks monitoring by PHQ9 checked if the score had dropped at least 5 points; if this was not the case, a switch to more intensive treatment, like adding antidepressant medication to PST (or switching to other medication or increasing the dosage of the antidepressant), was advised. The DCM discussed the progress of the patients with the GP and consulted the GP if medication issues would arise. At the occurrence of adverse events, suicidality, or lack of progress, or if remission was not achieved between 18 and 24 weeks and referral to specialty mental health care was seriously considered, the consultant psychiatrist would be consulted. The care manager, the GP and the consultant psychiatrist all had access to a web-based tracking system to monitor and follow the protocol. The web-based tracking system is a secured website with a separate file for each patient. This is accessible to the care manager, the GP and the consultant psychiatrist of the patient. The tracking system instructs the care manager about the steps that need to be taken according to the collaborative care treatment algorithm. If the care manager fails to follow important instructions within a set time period, the consultant psychiatrist and the researchers are notified by e-mail. The researchers also use this information during their weekly phone calls with the care manager, in which the researcher stimulates adherence to the collaborative care protocol. Furthermore, every six weeks a meeting with other care managers is organized for PST supervision based on PST sessions that have been audiotaped with patients' permission.

GPs in primary care centers randomized to the CC condition received training in the CC model, the use of the web-based tracking system and got acquainted with the consultant psychiatrist. DCMs received training

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