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How is depression valued?

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Chapter 7

General Discussion

This thesis centres on the application of valuation methodology in depression, with a special focus on depression when co-occurring with a somatic condition. The observation that valuation methodology, which is increasingly being used in research in people with somatic conditions, is much less applied in the area of mental health conditions was the motivation to start our research. Given that valuations are currently recommended as outcome measures in the evaluation of health care interventions (Drummond, Sculpher, Torrance, O'Brien, & Stoddart, 2005), it is easily understood that lagging evidence accumulation on the benefits of psychological interventions may have consequences for policy decision making. Given the increased prevalence and burden of depression in the general population (Kessler et al., 2003), and even more in patients with somatic conditions (Moussavi et al., 2007), there is a need to bridge this gap.

The limited application of health state valuations in the mental health field might be related to the challenges involved. One of the major issues is that the available generic preference-based measures (which simplify and facilitate the valuation by use of predefined "value sets") are considered inappropriate for mental health conditions (Chisholm, Healey, & Knapp, 1997; Flood, 2010). This is mainly because they include generic HRQoL domains meant to capture a wide range of somatic conditions (such as pain, mobility), but which were not developed to also describe depression. The need for a depression-specific preference-based measure has been previously recognized, and the McSad has been proposed as a depression-specific classification system for valuation purposes (Bennett, Torrance, Boyle, Guscott, & Moran, 2000). However, the accompanying value set to indicate values for specific depressive states has not been developed. The development of a value set for the McSad is expected to enhance the application of cost-utility analyses to assess interventions for depression. This was therefore set as the ultimate aim of this thesis. To develop such a value set a large scale study had to be performed, in which we would obtain direct valuations for a specific set of McSad states. Before generating the value set, using a scoring algorithm, several informed methodological choices need to be taken. Therefore, we took a number of steps examining different issues related to applying valuation methodology in depression. These steps are described in the Chapters of this thesis. Chapters 2 & 3 focus on issues that needed to be taken into account when designing a protocol to elicit depression valuations. Chapters 4 & 5 focus on examining issues related to the values elicited. Chapter 6 describes the –preliminary- steps to develop the value set to accompany the McSad.

MAIN FINDINGS

In Chapter 2 we focus on the first step of a valuation procedure, that is the description of the health condition of interest, i.e. depression. In the study described in this Chapter we tested the McSad depression classification system concerning its validity and performance among patients with somatic conditions. We collected cross-sectional data from 114 patients with diabetes and 436 patients with cancer. The validity of the McSad was supported. Its performance appeared superior to that of the classification system of the EQ-5D, the most commonly used generic preference based measure. This implies that the McSad can be recommended to describe depression, also as experienced by somatic patients, in future valuation studies.

In Chapter 3 we focus on the second step of a valuation procedure, the application of a standard task to elicit valuations for a certain health state. We performed a study with the objective to test the feasibility of the most commonly used task, the time-trade-off (TTO), to elicit valuations for depression, presented either as a solitary condition or as co-occurring with a somatic condition. Our secondary aim was to discover factors that may affect valuations of depression. Using the TTO (Green, Brazier, & Deverill, 2000), participants were asked to imagine living in a specific health state and were then presented with two options. Option A concerned living in this state for a certain amount of years (x) and then die. Option B concerned fully recovering from this state, but living for less than x years. Participants were asked for the number of years they would be willing to live less, in Option B. The number of years in Option B was varied, until the point of indifference between the two options was reached. We found the TTO is an appropriate technique to elicit valuations of depression, also when co-occurring with a somatic condition. Yet, results from qualitative interviews enabled us to identify potential challenges that needed to be addressed in the design of the valuation protocol. Mainly we found that using of the general life expectancy of 80 years for the TTO involved some challenges for participants. Furthermore, in the valuation of co-occurring depression, participants found it difficult to imagine living with a somatic condition and mentally healthy, as suggested by the TTO task. By means of a qualitative approach, we also identified certain factors that affected how individuals value – co-occurring – depression, for example how individuals take into account possible consequences for their significant others by their decision to live in the condition, or trade years. This is important to know, as the TTO task is supposed to assess how participants value depression, by identifying the number of years they would be willing to trade to live free of the burden of depression. If, however, factors other than the burden of the depression state as such would considerably affect individual decisions to trade years, then valuations might be prone to such biases.

In chapter 4, our focus turns to the individual from whom to obtain valuations. An ongoing debate concerns whose perspective is more appropriate; patients' who experience the health conditions, or the general population's? Earlier findings show that the general population tends to value somatic conditions more negatively than individuals who experience those conditions (De Wit, Busschbach, & De Charro, 2000). Some limited findings on discrepancies in depression valuations suggest that the opposite holds for depression (Gerhards, Evers, Sabel, & Huibers, 2011; Pyne et al., 2009), that is that the general population values depression less negatively than individuals who experience it. Yet, no clear conclusions can be drawn based on this information. If discrepancies occur, then the choice of perspective might affect conclusions concerning the benefits of an intervention. To inform this choice, it is thus important to understand the underlying mechanisms of discrepancies. Different factors have been suggested to influence patients or the general population resulting in over- and/or under-valuations (Stiggelbout & de Vogel-Voogt, 2008). Factors that can account for the observed discrepancies in valuations of depression have been suggested (for example stigma), but not empirically examined. We performed a study to examine whether individuals with and without depression differ in their valuations of hypothetical depression states. We collected valuation data on 30 depression states, reflecting mild, moderate and severe depression, generated by the McSad (four were valued by each participant), and questionnaire data concerning perceptions of depression and individual characteristics. We found that individuals with depression value hypothetical states of mild depression more negatively than individuals without depression. We also tested whether factors related to perceptions of depression (such as stigma) or individual characteristics (such as dysfunctional attitudes) differentially affect individuals with and without depression in their valuations, explaining the observed discrepancies. Such an effect, however, was not confirmed. Therefore, other factors might account for the observed discrepancies; or discrepancies simply reflect genuine differences in how individuals estimate depression related HRQoL.

In Chapter 5, our focus turns to valuation of depression when co-occurring with a somatic condition. We compared valuations assigned to depression presented as a solitary condition (as described in the previous chapter), with valuations assigned to depression when presented co-occurring to a somatic condition. We aimed to examine the effect of the presence of a somatic condition on the general population's valuations of depression (hypothetical) states. We found that depression is valued more negatively when it co-occurs with a somatic condition. This implies that the perceived burden of depression is enlarged in the presence of a somatic condition. However, it cannot be ruled out that the more negative valuations of the co-occurring depression is an artefact of the TTO based methodology. In the case of

co-occurring depression, individuals might be eager to trade years to cure depression, not because they perceive depression as more burdensome, but because the life years traded are not healthy years, given the presence of the somatic condition. In contrast, in the case of depression as a solitary condition, people might be less willing to trade off years expected to be lived in somatic health. In either case, this finding is important as the effect of the somatic condition on depression valuations can affect conclusions on the benefits of depression interventions when offered to patients with somatic condition.

In Chapter 6, the final step in this series of studies is described. We aimed to derive a scoring algorithm for the McSad classification system, in order to provide the first depression-specific preference-based measure with an accompanying set of indirect values. For that, we used the general population's valuation data on a subset of 30 McSad states (as described in previous chapters) and applied statistical techniques to compute the appropriate scoring algorithm that would be used to assign a value to each state possibly generated by the McSad. Our attempts to derive this scoring algorithm can only be considered as preliminary, as the performance of our model was not satisfactory. We do believe however that this study can be valuable for future research with the same aim. This is the reason why we have put emphasis on discussing the possible reasons for the inadequate performance of our model. We postulate that the poor performance of our model was related to the limited range of valuations among the 30 different McSad states. Next, we focused our discussion on whether this limited range is due to the specific methodology employed in this study, or related to the mental health specific nature of the valuation.

IMPLICATION OF MAIN FINDINGS

The implications of the findings of the current thesis are discussed, firstly with respect to future studies examining the effectiveness of psychological interventions; and secondly, the contribution to valuation research.

The necessity for a depression-specific preference-based measure for use in studies evaluating the effectiveness of psychological interventions has long been recognized. With this thesis we have taken a number of important steps to this direction, and we have taken some preliminary steps to its development. Based on the current findings, it is not possible to develop a scoring algorithm for the McSad, which was the ultimate goal of this thesis. We believe that future studies can build on and follow our work, by improving the scoring algorithm and develop the accompanying value set, and testing it in different settings.

When using depression valuations in evaluating psychological interventions, two of our findings are particularly important to consider. Firstly, our finding that using the general population can result in less negative valuations of mild depression implies that using their perspective may result in estimating less benefit of an intervention aimed to restore mental health. This becomes more crucial if one thinks that using the general population perspective to evaluate an intervention aimed to cure a somatic condition would result in more benefit, compared to using the patients' perspective (as the general population value them more negatively, compared to individuals with somatic condition). As the general guidelines advice the use of the general population for health policy decision making, this choice might entail the danger that mental health interventions will be less prioritized.

The second finding with possibly significant implications in the evaluation of psychological interventions is that depression is valued more negatively when it co-occurs with a somatic condition. This means that the same intervention aimed to alleviate depression could be considered more beneficial when offered to patients with somatic condition, compared to when offered to somatically healthy individuals. Based on this finding, we conclude that it is not recommended to apply the value set developed for the McSad for valuations of co-occurring depression. If this value set developed to provide valuations for depression states is used, then the effect of the somatic condition on depression valuation will not captured. As a result the additional benefit of a depression intervention offered to patients with somatic conditions will not or to a lesser extent be demonstrated compared to somatically healthy individuals. Understanding whether the more negative valuations of co-occurring depression is a true difference or an artefact of the methodology is necessary, however, before drawing any definite conclusions.

The findings of this thesis are also a contribution to the field of valuation research. As we have particularly set our focus on methodological issues and choices in applying the valuation methodology in depression, we have made some important remarks. First, we have shown the valuable contribution of qualitative approaches in understanding how people complete the valuation task: how do they interpret it? Which factors affect them? Given that it is widely recognized that individuals' preferences are constructed at the process of elicitation, and that decision making is "a highly contingent form of information processing, sensitive to task complexity, time pressure, response mode, framing, reference points and other contextual factors" (Lichtenstein, & Slovic, 2006) any methodological choice should be very well examined, as it can have a considerable effect on outcomes. Qualitative approaches, in our case, proved valuable to examine both procedural and individual factors appeared to affect valuations. For example, we discovered that when performing a TTO task, participants might re-interpret the scenarios presented to them, based on

their own perceptions for example related to the suggested life expectancy, or the health state described. Additionally, individual factors, such as perceived susceptibility for the health condition valued were found to be considered by a considerable percentage of people during valuations. These aspects need to be considered when designing the valuation protocol, for example when deciding of the time frame used in the TTO task, or when choosing whose perspective should be used to obtain valuations. For example the general population might not be completely objective in valuations, but be affected by perceived susceptibility.

The work performed in the context of this thesis can relate to other studies aiming at the development of mental health-specific preference based measures. We have identified challenges in the construction of a value set for a depression-specific measure. The basic challenge we have observed is that although the 30 directly valued McSad depression states differed considerably with regard to the level of severity in the six domains, participants on average assigned a limited range of values. Thus the construction of an algorithm aimed to predict a value for each state based on the level of dysfunctioning in the domains is compromised. Although it cannot be ruled out that it is related to the methodology employed, our basic explanation for this observed limited range of values is that individuals might have assigned their valuations considering that only a limited part of their overall health is affected, whereas other major HRQoL domains, such as mobility or pain, are not affected. This challenge may apply to condition specific measures in general, as they usually focus on specific HRQoL domains other that the major ones that are therefore considered to remain unaffected. However, this challenge may be more profound in the case of mental health specific measures. Part of overall health which is affected concerns mental health, whereas somatic health remains unaffected. Possibly, this is considered less adverse by the majority of individuals.

METHODOLOGICAL CONSIDERATIONS

Given that the ultimate goal of this thesis was to develop a value set for a depression-specific preference-based measure, the structure of this thesis with sequential steps can be considered its major methodological asset. Some specific issues in the procedure to develop the depression-specific measure are discussed below. The McSad was chosen as an existing depression-specific classification system with demonstrated good properties to describe depression, after testing it also among somatic patients and comparing it to the classifications system of a generic measure. However, some of the characteristics of the McSad might have raised difficulties in the development of the value set. First, the number of 4096 depression states

which can be identified by the McSad is quite large. Second, as the domains are all chosen to be related to depression-specific HRQoL, the domains can be expected to be considerably correlated. These features of the McSad make it difficult to develop a good model to predict values for the McSad states, based on their description in terms of dysfunctioning in the domains. This issue would be probably relevant to any condition- specific classification system. Yet, it might have proven more feasible to initially develop a shorter version of the McSad, using fewer domains and / or limit the attribute levels per domain. In this case, the number of possibly generated states would be considerably smaller and thus the scoring algorithm to predict a value set easier to develop.

Concerning the methodology to elicit valuations, the use of a large sample, representative to the general Dutch population can be considered as a major strength. However, the valuation elicitation methodology employed in this study could be related to the observed limited range of values assigned to the different McSad states, which was related to the difficulties to develop the scoring algorithm. TTO is a standard task, but different choices can be made to the exact protocol (Arnesen & Trommald, 2005). Looking into our methodology to elicit values, it is possible that other choices might have produced a larger range of valuations, as for example the inclusion of negative values. But it is also possible that this limited range of average valuations for the 30 depression states is due to the use of the TTO task in the case of depression, as it is possible that factors other than the burden of depression determine valuations. One last remark concerns the choice of the online administration. On one hand, the use of friendly and comprehensive screens can be visual aids to the valuation elicitation. On the other hand, it was not possible to ensure the appropriate completion of the task. This is particularly important as the TTO was found to be somewhat challenging, especially when applied for eliciting valuations for depression co-occurring with a somatic condition.

SUGGESTIONS FOR FUTURE RESEARCH

In future studies applying valuation methodology in depression or other mental health conditions some main findings of this thesis may be taken into consideration. Future studies can consider our finding that individuals who experience depression value mild depression more negatively than individual without depression. A first goal would be to empirically examine the magnitude of the effect of perspective choice on the outcomes of interventions targeting individuals with depression and specifically mild depression. A second goal could be to look into factors that can explain the observed discrepancies between individuals with and without depression.

This could provide information concerning whose perspective is more appropriate, for example because one of the two perspectives is less prone to biases. As also found in this thesis, use of qualitative methods can prove valuable in identifying factors that affect valuations, which can subsequently been examined by means of quantitative methods.

Future research could also look into the mechanisms underlying our finding that the presence of a somatic condition is related to more negative valuation of depression. The major question rose by our study concerns what this effect of the somatic condition reflects. A genuine difference in how depression is valued when it co-occurs with a somatic condition? Or is it related to the TTO based methodology of this study. Furthermore, the degree to which the effect of a somatic condition on depression valuations affects conclusions concerning the benefits of an intervention offered to patients with chronic somatic conditions, compared to when offered to somatically healthy individuals requires additional evaluation.

Future studies can continue the work presented in this thesis. The development of a depression-specific preference based measure with an appropriate scoring algorithm to accompany the measure is warranted. Subsequently, its properties in the evaluations of interventions aiming to alleviated depression among different populations should be tested. Such a depression-specific preference based measure would enhance the application of valuation methodology in assessing benefits of depression interventions.

With this thesis we believe that we have highlighted some important issues concerning the application of valuation methodology in a mental health condition, i.e. depression. We have demonstrated various challenges, for example that also in the field of mental health valuations may vary according to who is providing them, or according to whether a somatic condition is co-occurring. Moreover, the development of a value set for a depression-specific preference based measure holds certain difficulties. We maintain, however, that with this thesis we have taken some important steps in promoting the application of an increasingly applied HRQoL assessment method. Such a method is required to assess intervention benefits that can subsequently be used to demonstrate the necessity for and the benefits of interventions offered to individuals with depression.

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