WORKING PAPER

14/2020

Valuing depression using the well-being valuation approach

Daniela Andrén

Economics & Statistics

ISSN 1403-0586

Örebro University School of Business
701 82 Örebro
Sweden

Valuing depression using the well-being valuation approach*

Daniela Andrén
daniela.andren@oru.se
Örebro University School of Business
Research environment Economics & Statistics
Research group Well-being, Health and Welfare Economics

Abstract

The continuously dramatic increase of the number of people suffering from depression attracts an increasing demand for effective ways of preventing depression. Without the need for new interventions, there is also a continuous call for a more robust framework for economic evaluation of public interventions. Taking in account people's preferences for public goods is not straightforward to quantify, and therefore, without the importance of designing new technique for valuing nonmarket goods and services, it is equally important to use methods that are not yet established as traditional. One less used method to assess the cost of depression in monetary terms is the well-being valuation method or the life satisfaction approach, which requires answers to questions that are significantly less time demanding for the respondents than more traditional approaches to valuation. We added a well-being question to a contingent valuation web-survey that describes hypothetical interventions aimed to prevent depression and estimated that the loss in life satisfaction for individuals who directly and/or indirectly experienced depression varies between approximately 5000 and 17000 Euro per year.

Keywords: depression, subjective well-being, well-being valuation method (WVM), life satisfaction approach (LSA).

JEL Classification: A12; D60; I31.

* I wish to thank Erik Tappar, Elin Vimefall and participants at Örebro University Seminar in Economics & Statistics and the Fourteenth Workshop on Costs and Assessment in Psychiatry - The Value of Mental Health Services - Venice, March 29-31, 2019 for helpful comments and suggestions.

1 Introduction

The World Health Organization (WHO) defines depression as "a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness and poor concentration" (WHO, 2019). Experiencing any of these feelings might results in long-lasting negative effects not only on the individual's ability to behave and live a satisfying life but also on many other people the individuals interacts daily with at home, school, work and in any other societal context (e.g., commuting, shopping, leisure related activities). Therefore, the cost of depression can be assessed in terms of long-lasting effects on living a satisfying life for both the individual, their family, and the society. However, the majority of earlier studies focused on the assessment of the cost of depression in terms of treatment costs and lost productivity for the individual and methods related to these,[1] and found that most of the costs (up to 85%) of depression in adults on a societal level are due to work absenteeism and/or presenteeism (e.g., Smit et al. 2006; Kessler et al. 2006; Luppa et al. 2007). To our knowledge, it is very little known about the indirect costs (calculated from a societal perspective) related someone else's depression. For example, a cost-of-illness study carried out in a sample of clinically depressed adolescents aged 12 to 21 years old reported that the annual societal costs of families with a clinically depressed adolescent are very high and higher than those of other psychological disorders (Bodden et al. 2018). Nevertheless, when assessing the willingness to pay for different treatments, it was found that even though respondents recognized that severe mental illnesses could dramatically lower quality of life, they were less willing to pay to avoid such illnesses than they were to pay to cure less burdensome general medical illnesses (e.g., Smith et al. 2012). Therefore, given the known high burden imposed by depression at individual, family and societal level, there is an increasing need for research that estimates the monetary value of public interventions designed not only to treat but also to prevent depression.

To our knowledge, only a few studies have estimated the monetary value of depression using methods that estimate the cost of prevention, as for example, the well-being valuation method (WVM), also known as the subjective well-being method or the life satisfaction approach (LSA). Using this method, Powdthavee and van den Berg (2011) estimated the monetary equivalent cost for suffering from depression or anxiety to be £44 237 per capita per year, which suggests that an additional £44 237 in income per year would be needed for an

[1]See Berto et al. 2000 for a literature review of depression cost-of-illness studies.

individual in order to have the same level of life satisfaction if they did not suffer from depression or anxiety.

In this paper, we use, to our knowledge, for the first time Swedish data to estimate the WVM monetary equivalent cost for experiencing directly and indirectly depression. Next to using a fairly new valuation method to value the monetary equivalent cost for suffering from depression, the empirical analysis also distinguishes between two types of situations, depending on whether the respondents themselves directly had experienced depression and/or someone that they knew well. Furthermore, given the richness of data, we combine this information about the individuals' direct and/or indirect experience of depression and their concern for suffering of depression in the future. We provide a spectrum of compensating variations that might be used as a reference points when designing new public interventions aimed to prevent depression.

In what follows, the next section describes shortly different alternatives of valuing non-financial costs of depression for individuals, briefly presenting the well-being valuation method in comparison to the most used existing alternatives. The third section presents a short description of the survey questions used and a few descriptive statistics. The fourth section discusses the results for the well-being equation and assesses the monetary value of depression, while the last section concludes and discusses.

2 Valuing non-financial costs of depression

Theoretical models in health economics are often focused on finding an optimal solution under given constraints. However, when estimating the cost of any health intervention not all relevant choices can be observed, especially when externalities and non-market goods are involved. The extensive literature in health economics on valuation methods for non-financial costs of health builds predominantly on compensating surplus and equivalent surplus, two welfare measures introduced by Hicks and Allen (1934). In this context, the equivalent surplus is the amount of money, to be paid or received, that keep the individual welfare level unchanged in the absence of depression. The compensated surplus is defined as the amount of money needed to keep the individual at the welfare level after a change in her/his status quo. *The cost of depression* can therefore be defined as the amount of money the individual would need to receive in order to have the same welfare level as before the deterioration of her/his health. In this context, the monetary compensation is expected to allow the depressed individual to keep her/his overall level of welfare level before experiencing depression. The estimation of the needed monetary compensation for all affected individuals is a measure for the potential budgetary savings that

interventions designed for preventing and decreasing depression implemented as early as possible in an individual's life can bring. Therefore, an intervention that costs less than the compensated surplus might be consider effective. But how can we estimate the compensating surplus?

Preventing and decreasing depression require both monetary and non-monetary resources. The monetary compensation with respect the individual's welfare is dependent on the individual's preferences and experiences, which are often not easy to quantify. For example, the monetary values for services and goods which are not traded in the market and hence have no market price use to be evaluated by using the contingent valuation (CV) method. Using a CV-survey, respondents are directly asked how much they would be willing to pay for specific intervention designed to improve the individual's health. The total monetary value of the intervention is estimation based on the average willingness to pay. An increasingly used alternative, based on significantly less demanding survey data are responses to subjective well-being (SWB) questions. Contrarily to using the respondents' willingness to pay, which is *a priori* approach, a growing literature uses data about respondents' experiences, income and their subjective well-being (SWB), which is *a posteriori* approach, and compute the monetary trade-off between an experience and income that would leave SWB unchanged. This is called the subjective well-being valuation method, or well-being valuation method (WVM), or life satisfaction approach (LSA).

SWB is a direct measure of subjective experienced utility, whilst in the stated preferences approach, the estimations of the monetary values are based on choices and ex ante statements of preference that are not always consistent with ex post experiences. Therefore, WVM has been sometimes considered as preferable to the revealed and stated preference approaches in the valuation of non-market goods (e.g., Dolan and Kahneman, 2008).

While individual's preferences are usually linked in economics to the individual's utility, which is a relatively abstract concept, experiences can be linked to the individual's well-being. One critical issue for evaluations of public policies is how the well-being should be measured (Kahneman and Deaton 2010). Stiglitz-Sen-Fitoussi Commission (2009) recommended to focus on income and consumption (rather than production) when evaluating economic well-being, to focus on households, and to take in account the joint distribution of economic resources. A growing literature has emerged on the use of global retrospective measures of individual's well-being, such as evaluations of general life satisfaction and accounts of happiness (OECD, 2013). These measures have the advantage of providing information on appraisal of circumstances and feelings about them. SWB refers to the

individual's own valuation of their well-being and it is usually measured through a self-reported judgements about how the individual feels and thinks about her/his life, including their happiness, sadness and life satisfaction, collected via surveys and/or interviews. However, additionally to trends on measurement of well-being focused on elevating the scientific standards and rigor that facilitate national and international comparisons of well-being, to our knowledge, there are only a few attempts of shifting the focus toward multidimensional approaches. For example, Ruggeri et al. (2020) using ten dimensions (referred collectively as the multidimensional psychological well-being) to compute a single value standardized to the population, reported insights that demonstrate what may be masked when limiting to single dimensions, which can create a failure to identify levers for policy interventions.

The WVM implies that information about people's experiences are collected directly without drawing attention towards the health condition in question and therefore suffers less from the cognitive pitfalls of the approach of stated preferences, which attempts to elicit people's preferences over different hypothetical situations. WVM has proven to be useful to calculate shadow prices for non-market commodities such as, airport noise, air quality, different phenomena related to crime and safety, etc.[2] and to evaluate health losses and/or gains by analyzing the impact of a change in health status. When using WVM to evaluate health, Ferrer-i-Carbonell and van Praag (2002) estimated, in a first step, the income equivalent of health satisfaction changes, i.e., the equivalent income change that would be necessary to change general life satisfaction to the same extent as a change in health satisfaction would do. In the next step, health satisfaction changes were linked to specific diseases in order to estimate the income equivalent for these diseases.

However, there is no clear consensus on what the best measure of the individual's experiences of different health conditions may be for the evaluation process. This might be even more complex in the case of depression, which implies to account for the negative externalities of the individual's depression on their family, their colleagues at school and/or at work and their friends in any social context. Regardless of all these important details, in order to use WVM to estimate the cost of depression, data about the individual's SWB, their experience pf depression and their income are needed. WVM involves estimating the well-being equation (1),

[2] e.g., airport noise (Van Praag and Baarsma 2005), air quality (Luechinger 2009), different phenomena related to crime and safety (Powdthavee 2005; Moore 2006; Frey et al. 2009; Cohen 2008; Kuroki 2013; Cheng and Smyth 2015), the value of marriage (Blanchflower and Oswald 2004) and the extent of social relationships (Powdthavee 2008). SWB data have been also used to estimate the tradeoff between inflation and unemployment (Di Tella et al. 2001) and the trade-off between money and a relative's life (Oswald and Powdthavee 2008).

which is explained by the non-market good being valued (*D*) and income (*M*), among other variables (*X*). This allows us to specify the well-being equation as it follows:

$$SWB_i = \alpha + \beta_D D_i + \beta_M M_i + +\beta_X X_i + \varepsilon_i, \quad (1)$$

where, *SWB* is a measure of well-being like general life satisfaction or happiness, *D* is the event of experiencing directly or indirectly depression), *M* stands for household income; and *X* are other determinants of *SWB*, such as individual socio-demographic characteristics.

As we already mentioned above, the WVM's central ingredients are the estimates: the change on the individual's SWB due to experiencing depression (here, β_D) and the change on the individual's SWB due the disposable household's income β_M,. The relative size of β_D and β_M reveal an implicit rate of substitution between the household income and the experience of depression. In other words, the WVM provides information about how much income would be needed to keep the SWB unchanged when individuals are experiencing depression. Specifically, the marginal rate of substitution (MRS) between experiencing depression and money,

$$MRS = -\frac{\beta_D}{\beta_M}, \quad (2)$$

provides the cost of depression.

The well-being equation generally provides the estimated relationship between general life satisfaction, a set of domain satisfactions and a set of control variables relating to the individual's demographic and socio-economic characteristics. In this context, if the estimated parameter of interest β_D is negative, it means that experiencing depression *is associated with* an average decrease of β_D units in life satisfaction, but it does not imply that any individual that experienced depression (directly or indirectly) *will cause* her/his life satisfaction to decrease by β_D units. However, when not all determinants of general life satisfactions can be observed and the unobservables are correlated with income and/or experience of depression, the estimates are biased.

3. Materials and Methods

3.1 Survey design

Valuing non-financial cost of depression using the well-being valuation approach requires a randomly selected representative sample of individuals that are asked to rate their experiences such as their general life satisfaction or their momentary happiness and their experience of

depression. During the autumn of 2017, 1753 individuals from the Norstat web panel (consisting at that time of about 67 000 individuals), were invited to participate in our survey. The sample was drawn using quota sampling that assures a representative of our sample with the population of Swedish population with respect gender, age and region. Out of these 600 (34%) answered the survey and 500 (29%) completed the full survey. All participants received a small reward a small amount of money, which they are asked if they would like to donate to charity.

The respondents answered a contingent valuation web-survey that includes a description of an intervention aimed to decrease depression, questions about willingness to pay for the intervention and questions about respondents' characteristics. Additionally, the respondents answered a few questions about individual well-being, thoughts, and feelings about quality of life, and how they expect that their life quality would change if they will be affected by depression. They also answered questions about their satisfaction with their health, their access to health care services and their income. All these questions could be answered using a 0-10 scale and the alternative "I don't know".

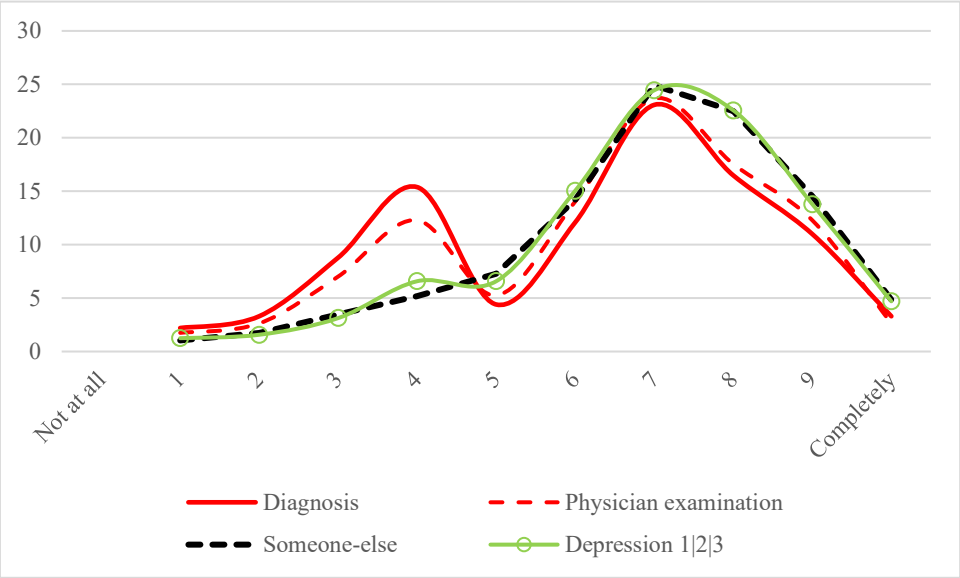
The subjective well-being measure we used is *general life satisfaction*, elicited through the following question "Think about your life and personal circumstances, how satisfied are you with your life as a whole?", using a scale 0-10 scale, 0 = not satisfied at all, …, 10 = completely satisfied. As already mentioned by Powdthavee and van den Berg (2011), there is no clear consensus on what the best measure of individual's experience may be for the evaluation process and, additionally, when people assess their lives as a whole, are they considering simply their own or also their family's well-being in general and their children's well-being? To capture the respondents previous experience of depression, we asked if they ever had experienced depression, had met an specialist who evaluated their depression, if they had receive a diagnose, if they know someone close to them (family and/or ~~fried~~ friend) who had/has depression, and if they are worried that they might get depressed. Table 1 shows that approximately 64% of the respondents (500 observations) in our sample had experienced directly or indirectly some form ~~a~~ of depression (Definition 4, i.e., Depression (1) or (2) or (3)); 17.23% has/had a diagnose (Definition 1); 22.24% were examined by a physician for depression (Definition 2); 55.11% know someone who had/has depression (Definition 3).

Table 1 Depression experience, by definition (%)

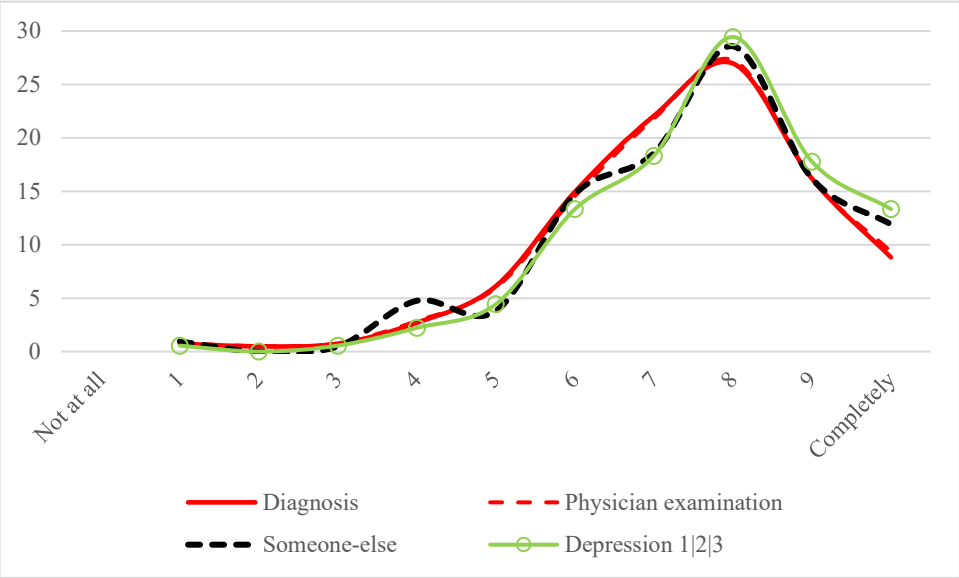
	Had/has diagnose	Physician examination	Know someone	(1) or (2) or (3)
	(1)	(2)	(3)	(4)
Yes	17.23	22.24	55.11	63.80
No	81.76	77.15	42.08	36.20
Do not want to answer				
(n)	3	5	14	-
n	499	499	499	499

Note: the few observations (3, 5 and 14 respectively) with "Do not want to answer" were recorded as having depression.

To get a sense of the correlation between life satisfaction of respondents and their experience of depression, Figure 1 provides a graphical presentation of the life satisfaction of those who experienced depression (panel a) and those who did not experienced any form of depression (panel b). The plots show how the responds answered to the question about their life satisfaction on a 0-10 scale, in percent. As expected, that the average life satisfaction scores of those who did not experienced depression are noticeably higher than those who experienced depression. The differences between the two groups suggest that the experience of any form of depression has impact on the individual's well-being. Nonetheless, and important for our empirical analysis there are very small difference across the different ways we controlled for individual experience of depression.



a) Respondents who experienced depression



b) Respondents who did not experience depression

Answer to the question: "*Think about your life and personal circumstances, how satisfied are you with your life as a whole*?", **0 = not satisfied at all**, …, **10 = completely satisfied**.

Figure 1 Life satisfaction (%) by different experience of depression

4. Estimation results

This section presents the estimation results for the general well-being equation s. We estimate different model specification separately for how the respondents experienced depression, with focus on estimating the additional income required to just compensate for the well-being losses experienced due to depression experienced directly by the individual or indirectly by living together with a person diagnosed with depression. In the first step, we estimate the impact of experienced depression, household income and other determinants on he individual's life satisfaction. In the second step we estimate how much money would be needed to give to (compensate) people to return their well-being to their original level (the level without experiencing directly or indirectly depression, which is the status quo).

Table 2 presents the estimates for the four model specifications of the well-being equation , i.e., (1)-(4) only for *Definition* 1 (i.e., the experience of depression is identified only by the respondents answer that they have/had a diagnosis for depression). Table 2 shows that the estimates of the well-being equations are relatively stable across the four model specifications. The estimates for experiencing depression are statistically significant, and they are, as expected, negative. The estimates for income are not statistically significant, but they are, as expected, positive across all four specifications. Another estimate that is statistically significant across all four model-specifications is the dummy for being married or cohabitating, showing that the individuals with this marital status have on average a higher life satisfaction that those single. The parameter for the country of birth is statistically significant for only two of the model specifications, but is negative for all, suggesting that individuals who are not born in Sweden have on average a lower life satisfaction. The estimated parameters for donating their payment for answering the survey for preventing depression, the time in minutes for answering the survey and the self-assessed control for preventing own depression are statistically significant. These estimates suggest that people who are willing to donating their payment for answering the survey for preventing depression have on average a higher life satisfaction than those who do not want to donate. Individuals who are expecting that they know to control for preventing own depression have on average a higher life satisfaction than those who expect that they cannot. The time spend to answer the survey is negatively correlated with the respondents' life satisfaction.

Table 2 Well-being equation, by model specification (1)-(4). *Definition* 1

	(1)	(2)	(3)	(4)
Depression experience	-1.052***	-1.076***	-0.977***	-0.920***
Equivalent household income	0.00000998	0.00000825	0.00000719	0.00000847
Age	0.0166*	0.0177*	0.0178*	0.0156
Woman	0.290	0.241	0.247	0.283
Foreign-born	-0.736*	-0.731*	-0.674	-0.687
Marital status (CG: single)				
Married or cohabitated	0.602*	0.541*	0.514*	0.551*
Widow	0.470	0.495	0.507	0.389
Divorced	0.196	0.149	0.134	0.0888
Household structure				
Number members	0.205	0.268	0.239	0.243
Number children	-0.285	-0.352	-0.347	-0.362
Education (CG: lower educated)				
2 y high school	0.0688	0.0193	-0.0216	-0.0662
3-4 y high school	-0.297	-0.277	-0.374	-0.404
Higher education <3 years	-0.0753	-0.0742	-0.0935	-0.142
Higher education, 3 y or more	-0.0433	-0.0208	-0.0733	-0.152
Employment status (CG: employed)				
Self-employed	0.0238	0.0309	-0.0220	0.0488
Retired	-0.0677	-0.0932	-0.101	-0.0638
Student	0.470	0.452	0.455	0.438
unemployed	-0.978	-0.885	-0.911	-0.791
Other	-1.115*	-1.038*	-1.071*	-0.898
Would donate their payment		0.362*	0.393*	0.354*
Minutes to complete the survey			-0.0291*	-0.0282*
Self-assessed control of depression				0.104**
Constant	5.767***	5.516***	5.915***	5.303***
	425	425	425	425

The estimates have the same sign and statistical significance across all definitions and all model specifications; see Table 3, which presents the estimates of the well-being equations for all nine definitions of experiencing depression for Specification (4) and Tables A2a-A2h in the Appendix, which present the well-being equations for all specifications separately for each of other eight definitions.

In the next step we use the estimates for depression and income to estimate the marginal rate of substitution, to value changes in individual's mental health (i.e., depression) in monetary terms; i.e., we estimate how much money would be needed to compensate people to return their well-being level without having depression (Table 4). We distinguish between two types of situations, depending on whether the respondents themselves (Definitions 1 and 2) or someone

that they knew well (Definition 3) has experienced depression. Furthermore, given the richness of data, we combine information about the individual experience of depression and their self-perceived risk of suffering of depression (Definition 1-4 conditional on individual feeling worried that she/he would get depression). This implies different sorts of compensating variation. Table 4 presents the estimates cost for 8 definitions of depression by model specification. The loss in life satisfaction for those who experienced depression corresponds to approximately Euro 5000-17000, depending on the definition of depression.

The estimated values are on average higher when the individual is worried that he or she could become depressed. Regardless of being worried, the costs are almost double when the individual was experiencing depression themselves compared to when they know someone else who experienced depression.

Perhaps, the most interesting result is that the average cost for those who were examined for depression is higher than the cost for those who were diagnosed after the examination. However, this result does not hold when the definition took in consideration the respondents being worried of being depressed.

Table 3 Well-being equation estimates, by definition of experiencing depression, Specification 4

	Def 1	Def 2	Def 3	Def 4		Def 1 worry	Def 2 worry	Def 3 worry	Def 4 worry
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Depression definitions	-0.920***	-0.719***	-0.512**	-0.708***	-1.099***	-1.056***	-0.852***	-0.736***	-0.932***
Equiv. household income	8.47E-06	7.39E-06	1.02E-05	1.05E-05	5.4E-06	7.8E-06	6.71E-06	9.83E-06	9.59E-06
Age	0.0156	0.0149	0.0158	0.0152	0.0127	0.016	0.0148	0.0147	0.0133
Woman	0.283	0.26	0.278	0.307	0.322	0.298	0.273	0.322	0.336*
Foreign-born	-0.687	-0.647	-0.507	-0.512	-0.664	-0.677	-0.639	-0.511	-0.522
Marital status									
Married or cohabitated	0.551*	0.558*	0.524*	0.525*	0.594**	0.544*	0.563*	0.553*	0.576*
Widow	0.389	0.465	0.460	0.399	0.594	0.428	0.517	0.547	0.523
Divorced	0.0888	0.0590	0.0513	0.0220	0.146	0.130	0.0963	0.0757	0.0817
Household structure	0.243	0.231	0.271	0.242	0.291	0.249	0.236	0.282	0.252
Number members	0.243	0.231	0.271	0.242	0.291	0.249	0.236	0.282	0.252
Number children	-0.362	-0.361	-0.390	-0.351	-0.420*	-0.370	-0.372	-0.387	-0.344
Education									
2 y high-school	-0.0662	-0.0437	-0.169	-0.228	-0.123	-0.000543	0.0241	-0.178	-0.211
3-4 y high-school	-0.404	-0.432	-0.581	-0.586	-0.355	-0.352	-0.383	-0.523	-0.484
Higher educ. < 3 years	-0.142	-0.179	-0.351	-0.356	-0.0698	-0.108	-0.150	-0.309	-0.262
Higher educ., 3 y& more	-0.152	-0.173	-0.288	-0.314	-0.123	-0.115	-0.146	-0.277	-0.272
Employment status									
Self-employed	0.0488	0.0583	0.161	0.114	0.349	0.0484	0.0592	0.245	0.223
Retired	-0.0638	-0.0562	-0.134	-0.0953	-0.159	-0.106	-0.0774	-0.134	-0.0918
Student	0.438	0.405	0.520	0.534	0.434	0.457	0.419	0.563	0.580
unemployed	-0.791	-0.839	-0.821	-0.855	-0.827	-0.916	-0.939	-0.825	-0.879
Other	-0.898	-0.918	-0.919	-0.892	-1.043*	-0.868	-0.879	-0.901	-0.895
Would donate payment	0.354*	0.351*	0.330	0.346*	0.345*	0.364*	0.363*	0.344*	0.358*
Minutes answered survey	-0.0282*	-0.0318**	-0.0331**	-0.0304*	-0.0236*	-0.0263*	-0.0304*	-0.0289*	-0.0250*
Self-assessed control	0.104**	0.110***	0.114***	0.113***	0.0889**	0.101**	0.109***	0.109***	0.104**
Constant	5.303***	5.395***	5.492***	5.696***	6.049***	5.241***	5.353***	5.500***	5.705***
n	425	425	425	425	422	422	422	422	422

Table 4 The estimated cost of depression (in Swedish crowns), by definition (Def 1-4) and model specification (1)-(4)

	Def 1	Def 2	Def 3	Def 4	Def 1 worry	Def 2 worry	Def 3 worry	Def 4 worry
	(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)
Model Specification								
(1)	105411	119681	48824	64215	125837	113111	70169	89825
(2)	130424	152408	57282	75619	158131	148187	83564	107637
(3)	135883	163652	58864	78751	166913	162432	87571	113435
(4)	108619	124493	50196	67429	135385	126975	74873	97185

Note: in October 2020, 1 USD was 8.83 SEK; 1 GBP was 11.37 SEK; 1 EURO was 10.36

6. Conclusions

In this paper, we use for the first time Swedish data to value the individual experience of depression in monetary terms by using the well-being valuation method; i.e., we estimate how much money would be needed to compensate people to return their well-being level without having depression. In order to do this, we asked well-being questions to 500 respondents that were randomly selected from a Swedish representative web-panel during the fall 2017 and answered a web-contingent valuation survey that includes a detailed description of an intervention aimed to decrease depression and the hypothetical change regarding the intervention, questions about willingness to pay for the intervention and questions about respondents' characteristics.

Next to using a fairly new valuation method to value the experience of depression, our empirical analysis is also innovative on that it distinguishes between two types of situations, depending on whether the respondents themselves or someone that they knew well has experienced depression and also considered if the respondents were worried for becoming depressed.

The well-being cost of the respondents than knew well someone has experienced depression (Euro 5000) is less than one third part of the wellbeing cost for those who experienced depression themselves (Euro 17000). Given that we did not have access to any alternative measurements of both well-being and experience of depression, our results are only a relative reference point when no other information is available.

References

Berto P, D'Ilario D, Ruffo P, Di Virgilio R, Rizzo, F. Depression: Cost-of-illness Studies in the International Literature, a Review. J. Mental Health Policy Econ. 2000; 3: 3-10

Beshears J, Choi JJ, Laibson D, Madrian BC. How are preferences revealed? J Public Econ 2008; 92 (8–9): 1787-1794. doi: 10.1016/j.jpubeco.2008.04.010.

Bodden D.H.M., Stikkelbroek Y, Dirksen CD. Societal burden of adolescent depression, an overview and cost-of-illness study, Journal of Affective Disorders 2018; 241: 256-262,

Forgeard MJC, Jayawickreme E, Kern ML, Seligman MEP. Doing the right thing: Measuring well-being for public policy. International Journal of Well-being 2011; 1 (1): 79–106.

Diener E, Seligman MEP. Beyond money: Toward an economy of well-being. Psychol Sci Public Interest 2004; 5 (1): 1–30. doi: 10.1111/j.0963-7214.2004.00501001.

Dolan P, Layard R, Metcalfe R. Measuring subjective well-being for public policy: Recommendations on measures. Center for Economic Performance, Special Paper no. 23, 2011.Retrieved on 16 May 2018 from:

http://cep.lse.ac.uk/pubs/download/special/cepsp23.pdf

Frey BS, Stutzer A. What can economists learn from happiness research? J Econ Lit 2002; 40 (2): 402-435.

Gruber J, Mullainathan S. Do cigarette taxes make smokers happier? Adv Econ Anal Pol 2005; 5(1): 1-43.

Hicks J. R., Allen, R. G. D. 1934. A Reconsideration of the Theory of Value: Part I. Economica 1934; 1(1): 52-76.

Kahneman D, Krueger AB, Schkade DA, Schwarz N, Stone AA. 2004. A survey method for characterizing daily life experience: The Day Reconstruction Method. Science 2004; 306 (5702): 1776-1780. doi: 10.1126/science.1103572 [PubMed]

Kahneman D, Deaton A. High income improves evaluation of life but not emotional well-being. Proc Natl Acad Sci USA 2010; 107 (38): 16489-16493. doi: 10.1073/pnas.1011492107

Kahneman D, Krueger AB. Developments in the measurement of subjective well-being. J Econ Perspect 2006; 20 (1): 3-24.

Kessler RC, Akiskal HS, Ames M, Wang PS. Prevalence and effects of mood disorders on work performance in a nationally representative sample of U.S. workers. Am. J. Psychiatry 2006; 163: 1561-1568.

Knabe A, Rätzel S, Schöb R, Weimann J. Dissatisfied with life but having a good day: Time-use and well-being of the unemployed. Econ J 2010; 120 (547): 867-889.

Luechinger S. Valuing air quality using the life satisfaction approach. Econ J (London) 2009; 119 (536): 482-515.

Ludwig J, Duncan GJ, Gennetian LA, Katz LF, Kessler RC, Kling JR, et al. Neighbourhood effects on the long-term well-being of low income adults. Science 2012; 337 (6101): 1505-1510. doi: 10.1126/science.1224648.

Luppa M, Heinrich S, Angermeyer MC, König HH, Riedel-Heller, SG. Cost-of-illness studies of depression: a systematic review. J. Affect. Disord. 2007; 98: 29-43

Powdthavee N, van den Berg B. Putting different price tags on the same health condition: Re-evaluating the well-being valuation approach, Journal of Health Economics 2011; 30(5): 1032-1043.

Ruggeri, K., Garcia-Garzon, E., Maguire, Á. et al. Well-being is more than happiness and life satisfaction: a multidimensional analysis of 21 countries. Health Qual Life Outcomes 18, 192 (2020). https://doi.org/10.1186/s12955-020-01423-y

Smith DM, Laura J. Damschroder, Scott Y. H. Kim, Peter A. Ubel. What's It Worth? Public Willingness to Pay to Avoid Mental Illnesses Compared with General Medical Illnesses. Psychiatric Services. 2012. 63:319-324, doi: 10.1176/appi.ps.201000036.

Smit F, Cuijpers P, Oostenbrink J, Batelaan N, Graaf de R, Beekman A. Costs of nine common mental disorders: implications for curative and preventive psychiatry. J. Mental Health Policy Econ 2006 9: 193-200

Stiglitz J, Sen A, Fitoussi JP. Report by the Commission on the Measurement of Economic Performance and Social Progress. Paris: The Commission on the Measurement of Economic Performance and Social Progress, 2009.

WHO. Depression: definition. WHO Regional Office for Europe. World Health Organization. [Accessed February 19, 2019]. https://www.euro.who.int/en/health-topics/noncommunicable-diseases/pages/news/news/2012/10/depression-in-europe/depression-definition#:~:text=Depression%3A%20definition,-AddThis%20Sharing%20Buttons&text=Depression%20is%20a%20common%20mental,of%20tiredness%20and%20poor%20concentration.

Appendix. Supplementary Tables

Table A1 Variables' label and definition

Variable label	Variable definition
depress1-4, etc	Depression definitions
eqvink	Equivalent household income
panel_age	Age
kon	Woman (1)
land	Foreign-born (1)
	Marital status
2.civil	Married or cohabitated
3.civil	Widow
4.civil	Divorced
	Household structure
ant	Number members
barn	Number children
	Education
2.utb	2 y high-school
3.utb	3-4 y high-school
4.utb	Higher education < 3 years
5.utb	Higher education, 3 y or more
	Employment status
1.sysel	Self-employed
2.sysel	Retired
3.sysel	Student
4.sysel	unemployed
5.sysel	Other
donera_ja	Would donate their payment
minutes	Minutes to complete the survey
paverkan	Self assesed control wrt depression
_cons	

Table A2a Well-being equation, by model specification. *Definition 2*

	(1) nojd	(2) nojd	(3) nojd	(4) nojd
depres2	-0.810***	-0.833***	-0.752***	-0.719***
	(-4.05)	(-4.18)	(-3.76)	(-3.64)
eqvink	0.00000879	0.00000706	0.00000597	0.00000739
	(1.02)	(0.82)	(0.69)	(0.87)
panel_age	0.0161	0.0171*	0.0173*	0.0149
	(1.88)	(2.00)	(2.04)	(1.77)
kon	0.258	0.210	0.220	0.260
	(1.52)	(1.23)	(1.30)	(1.55)
land	-0.694	-0.689	-0.629	-0.647
	(-1.85)	(-1.84)	(-1.69)	(-1.76)
1.civil	0	0	0	0
	(.)	(.)	(.)	(.)
2.civil	0.609*	0.549*	0.517*	0.558*
	(2.56)	(2.30)	(2.18)	(2.38)
3.civil	0.560	0.587	0.593	0.465
	(1.03)	(1.08)	(1.10)	(0.87)
4.civil	0.166	0.118	0.105	0.0590
	(0.52)	(0.37)	(0.33)	(0.19)
ant	0.200	0.260	0.228	0.231
	(1.23)	(1.58)	(1.39)	(1.43)
barn	-0.287	-0.354	-0.347	-0.361
	(-1.41)	(-1.72)	(-1.70)	(-1.79)
1.utb	0	0	0	0
	(.)	(.)	(.)	(.)
2.utb	0.101	0.0532	0.00366	-0.0437
	(0.22)	(0.12)	(0.01)	(-0.10)
3.utb	-0.317	-0.297	-0.404	-0.432
	(-0.75)	(-0.70)	(-0.96)	(-1.04)
4.utb	-0.116	-0.116	-0.132	-0.179
	(-0.26)	(-0.26)	(-0.30)	(-0.42)
5.utb	-0.0559	-0.0338	-0.0918	-0.173
	(-0.13)	(-0.08)	(-0.22)	(-0.42)
0.sysel	0	0	0	0
	(.)	(.)	(.)	(.)
1.sysel	0.0428	0.0494	-0.0139	0.0583
	(0.08)	(0.10)	(-0.03)	(0.12)
2.sysel	-0.0631	-0.0876	-0.0962	-0.0562
	(-0.21)	(-0.29)	(-0.32)	(-0.19)
3.sysel	0.433	0.415	0.422	0.405
	(1.21)	(1.16)	(1.19)	(1.15)
4.sysel	-1.036	-0.947	-0.970	-0.839
	(-1.75)	(-1.60)	(-1.66)	(-1.45)
5.sysel	-1.150*	-1.074*	-1.107*	-0.918
	(-2.34)	(-2.19)	(-2.28)	(-1.90)
donera_ja		0.355*	0.392*	0.351*
		(2.09)	(2.32)	(2.10)
minutes			-0.0331**	-0.0318**
			(-2.71)	(-2.64)
paverkan				0.110***
				(3.40)
_cons	5.841***	5.598***	6.046***	5.395***
	(9.32)	(8.82)	(9.28)	(8.04)
N	425	425	425	425

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table A2b Well-being equation, by model specification. *Definition 3*

	(1) nojd	(2) nojd	(3) nojd	(4) nojd
depres3	-0.581***	-0.590***	-0.518**	-0.512**
	(-3.35)	(-3.41)	(-2.99)	(-3.00)
eqvink	0.0000119	0.0000103	0.00000880	0.0000102
	(1.36)	(1.18)	(1.01)	(1.19)
panel_age	0.0173*	0.0183*	0.0184*	0.0158
	(2.02)	(2.13)	(2.17)	(1.88)
kon	0.273	0.227	0.235	0.278
	(1.59)	(1.31)	(1.37)	(1.64)
land	-0.537	-0.529	-0.485	-0.507
	(-1.42)	(-1.40)	(-1.30)	(-1.38)
1.civil	0	0	0	0
	(.)	(.)	(.)	(.)
2.civil	0.566*	0.509*	0.479*	0.524*
	(2.37)	(2.12)	(2.01)	(2.23)
3.civil	0.563	0.587	0.590	0.460
	(1.03)	(1.07)	(1.09)	(0.86)
4.civil	0.157	0.112	0.0988	0.0513
	(0.49)	(0.35)	(0.31)	(0.16)
ant	0.250	0.308	0.270	0.271
	(1.53)	(1.87)	(1.64)	(1.67)
barn	-0.324	-0.387	-0.377	-0.390
	(-1.58)	(-1.87)	(-1.84)	(-1.93)
1.utb	0	0	0	0
	(.)	(.)	(.)	(.)
2.utb	-0.0402	-0.0876	-0.124	-0.169
	(-0.09)	(-0.19)	(-0.27)	(-0.38)
3.utb	-0.478	-0.464	-0.557	-0.581
	(-1.12)	(-1.09)	(-1.32)	(-1.40)
4.utb	-0.308	-0.311	-0.307	-0.351
	(-0.69)	(-0.70)	(-0.70)	(-0.81)
5.utb	-0.179	-0.161	-0.208	-0.288
	(-0.43)	(-0.39)	(-0.50)	(-0.70)
0.sysel	0	0	0	0
	(.)	(.)	(.)	(.)
1.sysel	0.159	0.168	0.0904	0.161
	(0.31)	(0.33)	(0.18)	(0.32)
2.sysel	-0.155	-0.180	-0.179	-0.134
	(-0.50)	(-0.59)	(-0.59)	(-0.45)
3.sysel	0.564	0.549	0.540	0.520
	(1.55)	(1.52)	(1.51)	(1.47)
4.sysel	-1.015	-0.931	-0.957	-0.821
	(-1.71)	(-1.57)	(-1.62)	(-1.41)
5.sysel	-1.153*	-1.084*	-1.121*	-0.919
	(-2.33)	(-2.19)	(-2.29)	(-1.89)
donera_ja		0.331	0.372*	0.330
		(1.94)	(2.19)	(1.97)
minutes			-0.0347**	-0.0331**
			(-2.82)	(-2.72)
paverkan				0.114***
				(3.53)
_cons	5.946***	5.718***	6.167***	5.492***
	(9.32)	(8.84)	(9.33)	(8.09)
N	425	425	425	425

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table A2c Well-being equation, by model specification. Definition 4

	(1) nojd	(2) nojd	(3) nojd	(4) nojd
depr1_2_3	-0.777***	-0.794***	-0.719***	-0.708***
	(-4.41)	(-4.52)	(-4.07)	(-4.06)
eqvink	0.0000121	0.0000105	0.00000913	0.0000105
	(1.41)	(1.22)	(1.06)	(1.24)
panel_age	0.0167	0.0177*	0.0178*	0.0152
	(1.96)	(2.09)	(2.12)	(1.83)
kon	0.306	0.259	0.265	0.307
	(1.80)	(1.51)	(1.56)	(1.82)
land	-0.542	-0.533	-0.490	-0.512
	(-1.45)	(-1.43)	(-1.32)	(-1.40)
1.civil	0	0	0	0
	(.)	(.)	(.)	(.)
2.civil	0.568*	0.508*	0.481*	0.525*
	(2.40)	(2.14)	(2.04)	(2.25)
3.civil	0.490	0.515	0.527	0.399
	(0.91)	(0.95)	(0.98)	(0.75)
4.civil	0.125	0.0775	0.0685	0.0220
	(0.39)	(0.24)	(0.22)	(0.07)
ant	0.212	0.272	0.240	0.242
	(1.31)	(1.66)	(1.47)	(1.50)
barn	-0.277	-0.343	-0.338	-0.351
	(-1.36)	(-1.67)	(-1.66)	(-1.75)
1.utb	0	0	0	0
	(.)	(.)	(.)	(.)
2.utb	-0.105	-0.157	-0.185	-0.228
	(-0.23)	(-0.35)	(-0.41)	(-0.52)
3.utb	-0.492	-0.477	-0.563	-0.586
	(-1.17)	(-1.14)	(-1.35)	(-1.42)
4.utb	-0.311	-0.315	-0.313	-0.356
	(-0.71)	(-0.72)	(-0.72)	(-0.83)
5.utb	-0.212	-0.194	-0.234	-0.314
	(-0.51)	(-0.47)	(-0.57)	(-0.77)
0.sysel	0	0	0	0
	(.)	(.)	(.)	(.)
1.sysel	0.102	0.111	0.0439	0.114
	(0.20)	(0.22)	(0.09)	(0.23)
2.sysel	-0.110	-0.135	-0.139	-0.0953
	(-0.36)	(-0.45)	(-0.46)	(-0.32)
3.sysel	0.577	0.562	0.554	0.534
	(1.61)	(1.57)	(1.56)	(1.52)
4.sysel	-1.058	-0.970	-0.990	-0.855
	(-1.80)	(-1.65)	(-1.70)	(-1.48)
5.sysel	-1.132*	-1.058*	-1.091*	-0.892
	(-2.32)	(-2.17)	(-2.25)	(-1.85)
donera_ja		0.351*	0.387*	0.346*
		(2.07)	(2.29)	(2.07)
minutes			-0.0320**	-0.0304*
			(-2.62)	(-2.52)
paverkan				0.113***
				(3.52)
_cons	6.204***	5.970***	6.367***	5.696***
	(9.72)	(9.24)	(9.66)	(8.41)
N	425	425	425	425

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table A2d Well-being equation, by model specification. *Definition "Worry"*

	(1) nojd	(2) nojd	(3) nojd	(4) nojd
d_worry	-1.249***	-1.262***	-1.181***	-1.099***
	(-6.62)	(-6.72)	(-6.16)	(-5.71)
eqvink	0.00000676	0.00000507	0.00000434	0.00000540
	(0.80)	(0.60)	(0.52)	(0.65)
panel_age	0.0129	0.0140	0.0143	0.0127
	(1.56)	(1.69)	(1.73)	(1.54)
kon	0.337*	0.286	0.290	0.322
	(2.03)	(1.71)	(1.74)	(1.95)
land	-0.702	-0.694	-0.652	-0.664
	(-1.93)	(-1.92)	(-1.81)	(-1.85)
1.civil	0	0	0	0
	(.)	(.)	(.)	(.)
2.civil	0.650**	0.587*	0.563*	0.594**
	(2.82)	(2.53)	(2.43)	(2.59)
3.civil	0.692	0.721	0.715	0.594
	(1.31)	(1.37)	(1.37)	(1.14)
4.civil	0.254	0.209	0.193	0.146
	(0.82)	(0.67)	(0.62)	(0.48)
ant	0.254	0.317*	0.290	0.291
	(1.62)	(2.00)	(1.83)	(1.85)
barn	-0.349	-0.418*	-0.410*	-0.420*
	(-1.77)	(-2.10)	(-2.06)	(-2.13)
1.utb	0	0	0	0
	(.)	(.)	(.)	(.)
2.utb	-0.0247	-0.0861	-0.109	-0.123
	(-0.06)	(-0.19)	(-0.25)	(-0.28)
3.utb	-0.264	-0.247	-0.325	-0.355
	(-0.64)	(-0.60)	(-0.79)	(-0.87)
4.utb	-0.00547	-0.00632	-0.0240	-0.0698
	(-0.01)	(-0.01)	(-0.06)	(-0.17)
5.utb	-0.0319	-0.0123	-0.0543	-0.123
	(-0.08)	(-0.03)	(-0.14)	(-0.31)
0.sysel	0	0	0	0
	(.)	(.)	(.)	(.)
1.sysel	0.362	0.374	0.308	0.349
	(0.74)	(0.77)	(0.63)	(0.72)
2.sysel	-0.171	-0.201	-0.199	-0.159
	(-0.58)	(-0.68)	(-0.68)	(-0.54)
3.sysel	0.464	0.447	0.449	0.434
	(1.33)	(1.29)	(1.30)	(1.27)
4.sysel	-0.999	-0.907	-0.927	-0.827
	(-1.75)	(-1.59)	(-1.63)	(-1.46)
5.sysel	-1.248**	-1.174*	-1.191*	-1.043*
	(-2.64)	(-2.48)	(-2.53)	(-2.22)
donera_ja		0.358*	0.384*	0.345*
		(2.16)	(2.32)	(2.09)
minutes			-0.0236	-0.0236*
			(-1.96)	(-1.97)
paverkan				0.0889**
				(2.77)
_cons	6.592***	6.351***	6.622***	6.049***
	(10.54)	(10.05)	(10.27)	(9.00)
N	422	422	422	422

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table A2e Well-being equation, by model specification. *Definition* 1| *Worry*

	(1) nojd	(2) nojd	(3) nojd	(4) nojd
d1_worry	-1.203***	-1.235***	-1.130***	-1.056***
	(-5.41)	(-5.57)	(-5.01)	(-4.70)
eqvink	0.00000956	0.00000781	0.00000677	0.00000780
	(1.12)	(0.91)	(0.79)	(0.92)
panel_age	0.0169*	0.0180*	0.0182*	0.0160
	(2.02)	(2.15)	(2.18)	(1.93)
kon	0.305	0.251	0.258	0.298
	(1.81)	(1.48)	(1.53)	(1.78)
land	-0.721	-0.714	-0.663	-0.677
	(-1.95)	(-1.94)	(-1.81)	(-1.87)
1.civil	0	0	0	0
	(.)	(.)	(.)	(.)
2.civil	0.594*	0.527*	0.503*	0.544*
	(2.54)	(2.24)	(2.15)	(2.35)
3.civil	0.515	0.545	0.551	0.428
	(0.96)	(1.02)	(1.04)	(0.81)
4.civil	0.247	0.200	0.181	0.130
	(0.78)	(0.63)	(0.58)	(0.42)
ant	0.207	0.272	0.246	0.249
	(1.29)	(1.68)	(1.52)	(1.56)
barn	-0.287	-0.359	-0.355	-0.370
	(-1.43)	(-1.77)	(-1.76)	(-1.85)
1.utb	0	0	0	0
	(.)	(.)	(.)	(.)
2.utb	0.124	0.0618	0.0245	-0.000543
	(0.28)	(0.14)	(0.05)	(-0.00)
3.utb	-0.249	-0.228	-0.320	-0.352
	(-0.60)	(-0.55)	(-0.77)	(-0.86)
4.utb	-0.0423	-0.0410	-0.0604	-0.108
	(-0.10)	(-0.09)	(-0.14)	(-0.25)
5.utb	-0.0101	0.0127	-0.0379	-0.115
	(-0.02)	(0.03)	(-0.09)	(-0.28)
0.sysel	0	0	0	0
	(.)	(.)	(.)	(.)
1.sysel	0.0177	0.0246	-0.0229	0.0484
	(0.04)	(0.05)	(-0.05)	(0.10)
2.sysel	-0.115	-0.146	-0.149	-0.106
	(-0.38)	(-0.49)	(-0.50)	(-0.36)
3.sysel	0.495	0.477	0.477	0.457
	(1.40)	(1.35)	(1.36)	(1.32)
4.sysel	-1.119	-1.024	-1.036	-0.916
	(-1.92)	(-1.76)	(-1.79)	(-1.60)
5.sysel	-1.076*	-0.991*	-1.026*	-0.868
	(-2.22)	(-2.05)	(-2.13)	(-1.81)
donera_ja		0.383*	0.409*	0.364*
		(2.27)	(2.44)	(2.18)
minutes			-0.0268*	-0.0263*
			(-2.19)	(-2.18)
paverkan				0.101**
				(3.12)
_cons	5.723***	5.459***	5.829***	5.241***
	(9.31)	(8.77)	(9.08)	(7.91)
N	422	422	422	422

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table A2f Well-being equation, by model specification. *Definition* 1| *Worry*

	(1) nojd	(2) nojd	(3) nojd	(4) nojd
d2_worry	-0.949***	-0.981***	-0.895***	-0.852***
	(-4.54)	(-4.71)	(-4.27)	(-4.11)
eqvink	0.00000839	0.00000662	0.00000551	0.00000671
	(0.97)	(0.77)	(0.64)	(0.79)
panel_age	0.0159	0.0170*	0.0172*	0.0148
	(1.87)	(2.00)	(2.04)	(1.77)
kon	0.268	0.215	0.227	0.273
	(1.58)	(1.26)	(1.34)	(1.63)
land	-0.681	-0.674	-0.619	-0.639
	(-1.83)	(-1.81)	(-1.68)	(-1.75)
1.civil	0	0	0	0
	(.)	(.)	(.)	(.)
2.civil	0.612*	0.547*	0.518*	0.563*
	(2.59)	(2.30)	(2.19)	(2.41)
3.civil	0.621	0.655	0.653	0.517
	(1.15)	(1.21)	(1.22)	(0.97)
4.civil	0.212	0.165	0.148	0.0963
	(0.66)	(0.52)	(0.47)	(0.31)
ant	0.199	0.264	0.233	0.236
	(1.23)	(1.61)	(1.43)	(1.47)
barn	-0.292	-0.364	-0.357	-0.372
	(-1.44)	(-1.77)	(-1.75)	(-1.85)
1.utb	0	0	0	0
	(.)	(.)	(.)	(.)
2.utb	0.156	0.0959	0.0502	0.0241
	(0.34)	(0.21)	(0.11)	(0.05)
3.utb	-0.273	-0.251	-0.354	-0.383
	(-0.65)	(-0.60)	(-0.85)	(-0.92)
4.utb	-0.0887	-0.0877	-0.104	-0.150
	(-0.20)	(-0.20)	(-0.24)	(-0.35)
5.utb	-0.0327	-0.0102	-0.0663	-0.146
	(-0.08)	(-0.02)	(-0.16)	(-0.36)
0.sysel	0	0	0	0
	(.)	(.)	(.)	(.)
1.sysel	0.0388	0.0451	-0.0146	0.0592
	(0.08)	(0.09)	(-0.03)	(0.12)
2.sysel	-0.0882	-0.118	-0.123	-0.0774
	(-0.29)	(-0.39)	(-0.41)	(-0.26)
3.sysel	0.452	0.433	0.438	0.419
	(1.26)	(1.22)	(1.24)	(1.20)
4.sysel	-1.148	-1.056	-1.068	-0.939
	(-1.95)	(-1.80)	(-1.83)	(-1.63)
5.sysel	-1.106*	-1.021*	-1.056*	-0.879
	(-2.26)	(-2.09)	(-2.18)	(-1.82)
donera_ja		0.379*	0.411*	0.363*
		(2.23)	(2.43)	(2.16)
minutes			-0.0314*	-0.0304*
			(-2.58)	(-2.53)
paverkan				0.109***
				(3.35)
_cons	5.824***	5.568***	5.994***	5.353***
	(9.34)	(8.83)	(9.25)	(8.01)
N	422	422	422	422

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table A2g Well-being equation, by model specification. *Definition* 1| *Worry*

	(1) nojd	(2) nojd	(3) nojd	(4) nojd
d3_worry	-0.828***	-0.844***	-0.768***	-0.736***
	(-4.85)	(-4.96)	(-4.47)	(-4.33)
eqvink	0.0000118	0.0000101	0.00000877	0.00000983
	(1.36)	(1.17)	(1.02)	(1.16)
panel_age	0.0158	0.0168*	0.0171*	0.0147
	(1.86)	(1.99)	(2.03)	(1.76)
kon	0.321	0.271	0.277	0.322
	(1.88)	(1.58)	(1.62)	(1.91)
land	-0.534	-0.524	-0.485	-0.511
	(-1.44)	(-1.41)	(-1.32)	(-1.40)
1.civil	0	0	0	0
	(.)	(.)	(.)	(.)
2.civil	0.598*	0.534*	0.507*	0.553*
	(2.53)	(2.26)	(2.15)	(2.37)
3.civil	0.660	0.690	0.684	0.547
	(1.22)	(1.28)	(1.28)	(1.03)
4.civil	0.187	0.141	0.126	0.0757
	(0.59)	(0.44)	(0.40)	(0.24)
ant	0.252	0.315	0.281	0.282
	(1.57)	(1.94)	(1.73)	(1.76)
barn	-0.311	-0.380	-0.373	-0.387
	(-1.54)	(-1.86)	(-1.84)	(-1.93)
1.utb	0	0	0	0
	(.)	(.)	(.)	(.)
2.utb	-0.0755	-0.139	-0.162	-0.178
	(-0.17)	(-0.31)	(-0.36)	(-0.40)
3.utb	-0.433	-0.417	-0.502	-0.523
	(-1.03)	(-1.00)	(-1.20)	(-1.27)
4.utb	-0.267	-0.271	-0.271	-0.309
	(-0.61)	(-0.62)	(-0.62)	(-0.72)
5.utb	-0.181	-0.164	-0.204	-0.277
	(-0.44)	(-0.40)	(-0.50)	(-0.68)
0.sysel	0	0	0	0
	(.)	(.)	(.)	(.)
1.sysel	0.242	0.254	0.180	0.245
	(0.48)	(0.51)	(0.36)	(0.50)
2.sysel	-0.152	-0.183	-0.182	-0.134
	(-0.50)	(-0.60)	(-0.61)	(-0.45)
3.sysel	0.613	0.598	0.588	0.563
	(1.72)	(1.68)	(1.66)	(1.61)
4.sysel	-1.019	-0.927	-0.950	-0.825
	(-1.74)	(-1.58)	(-1.63)	(-1.43)
5.sysel	-1.126*	-1.049*	-1.082*	-0.901
	(-2.32)	(-2.16)	(-2.24)	(-1.88)
donera_ja		0.360*	0.392*	0.344*
		(2.12)	(2.32)	(2.06)
minutes			-0.0298*	-0.0289*
			(-2.44)	(-2.39)
paverkan				0.109***
				(3.37)
_cons	6.008***	5.764***	6.149***	5.500***
	(9.60)	(9.09)	(9.47)	(8.22)
N	422	422	422	422

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table A2h Well-being equation, by model specification. *Definition* 1| *Worry*

	(1) nojd	(2) nojd	(3) nojd	(4) nojd
d123_worry	-1.024***	-1.043***	-0.971***	-0.932***
	(-6.12)	(-6.25)	(-5.73)	(-5.55)
eqvink	0.0000114	0.00000969	0.00000856	0.00000959
	(1.34)	(1.14)	(1.01)	(1.15)
panel_age	0.0142	0.0153	0.0156	0.0133
	(1.70)	(1.84)	(1.88)	(1.62)
kon	0.341*	0.288	0.293	0.336*
	(2.03)	(1.71)	(1.75)	(2.02)
land	-0.544	-0.533	-0.498	-0.522
	(-1.49)	(-1.46)	(-1.37)	(-1.46)
1.civil	0	0	0	0
	(.)	(.)	(.)	(.)
2.civil	0.624**	0.557*	0.533*	0.576*
	(2.69)	(2.39)	(2.30)	(2.51)
3.civil	0.624	0.654	0.653	0.523
	(1.17)	(1.24)	(1.24)	(1.00)
4.civil	0.190	0.143	0.130	0.0817
	(0.61)	(0.46)	(0.42)	(0.27)
ant	0.210	0.276	0.249	0.252
	(1.33)	(1.72)	(1.56)	(1.59)
barn	-0.261	-0.332	-0.329	-0.344
	(-1.30)	(-1.65)	(-1.64)	(-1.74)
1.utb	0	0	0	0
	(.)	(.)	(.)	(.)
2.utb	-0.112	-0.179	-0.197	-0.211
	(-0.25)	(-0.40)	(-0.44)	(-0.48)
3.utb	-0.404	-0.387	-0.462	-0.484
	(-0.98)	(-0.94)	(-1.13)	(-1.19)
4.utb	-0.217	-0.220	-0.224	-0.262
	(-0.50)	(-0.51)	(-0.52)	(-0.62)
5.utb	-0.186	-0.167	-0.202	-0.272
	(-0.46)	(-0.41)	(-0.50)	(-0.68)
0.sysel	0	0	0	0
	(.)	(.)	(.)	(.)
1.sysel	0.210	0.222	0.160	0.223
	(0.43)	(0.45)	(0.33)	(0.46)
2.sysel	-0.103	-0.133	-0.137	-0.0918
	(-0.34)	(-0.45)	(-0.46)	(-0.31)
3.sysel	0.629	0.613	0.604	0.580
	(1.79)	(1.75)	(1.73)	(1.68)
4.sysel	-1.080	-0.985	-1.000	-0.879
	(-1.87)	(-1.71)	(-1.75)	(-1.55)
5.sysel	-1.121*	-1.040*	-1.067*	-0.895
	(-2.34)	(-2.18)	(-2.25)	(-1.89)
donera_ja		0.377*	0.403*	0.358*
		(2.26)	(2.42)	(2.17)
minutes			-0.0258*	-0.0250*
			(-2.14)	(-2.10)
paverkan				0.104**
				(3.27)
_cons	6.265***	6.014***	6.334***	5.705***
	(10.10)	(9.59)	(9.87)	(8.61)
N	422	422	422	422

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001