# Evaluation of the CORE-10 to assess psychological distress in pregnancy

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**Abstract**

**Background:** Women experience diverse symptoms of mental ill health in pregnancy, yet measures usually only assess depression or anxiety. Measures may therefore miss out on identifying women experiencing distress.

**Objective:** We aimed to examine validity and reliability of the CORE-10:  a short measure with broad coverage of symptoms of distress and associated functioning, in pregnant women.

**Methods:** 366 women 26-38 weeks pregnant completed online measures of distress (CORE-10), depression (Whooley questions), anxiety (Generalised Anxiety Disorder-2), and a single item measuring worry about psychological health. We examined convergent and factorial validity and concordance rates of the measures.

**Results:** Levels of distress were high, with anxiety the most reported symptom. The CORE-10 showed good convergent validity. A two-factor structure representing 'symptoms' and 'ways of coping' best fit this sample. Internal reliability of the symptoms factor was good.

**Discussion:** The self-selected online sample may not be representative of pregnant women in the third trimester and a diagnostic interview was not used.  Based on this validation study, the CORE-10 potentially offers assessment of a broad range of symptoms of postnatal distress within the confines of a measure brief enough to be usable in clinical settings. Further validation is needed.

**Introduction**

Mental illness is experienced by 10 – 20% of women in pregnancy or the first postnatal year (Heron et al., 2004; Bauer, Parsonage, Knapp, Iemmi, Adelaja, 2014). Perinatal mental illness has serious implications for the woman, her child(ren), wider family and society in general (Goodman, 2004; O'Donnell, Glover, Barker, & O'Connell, 2014; Orr, Reiter, Blazer, & James, 2007). Current rates of recognition of perinatal mental health problems are low. It is estimated that 41% of cases of antenatal depression are identified (Goodman & Tyler-Viola, 2010) and less than 50% of postnatal cases (Hewitt et al., 2009; Hearn et al., 1998). The concept of perinatal distress is less clearly defined in the literature but is considered an unhelpful psychological response to a stressor that may create an adverse emotional state which can in turn affect behaviours and relationships (Button et al., 2017). Distress may include symptoms of a number of mental health problems including anxiety, depression, and trauma, without reaching a diagnostic threshold for any disorder.

Evidence exists for cost-effectiveness, feasibility and acceptability of measures to assess perinatal depression (Hewitt et al., 2009). However there are other clinically significant mental illnesses that perinatal women experience that are not currently assessed for. For example, in every 1000 births it is estimated that there will be 30 cases of depressive illness, 100-150 cases of mild to moderate depression and anxiety, 30 cases of PTSD and 150-300 cases of adjustment disorders and distress (NHS England, 2016; Ayers, 2004). There is little research on assessing these problems. In addition to assessing symptoms, quantitative and qualitative research suggests that assessing functional impairment,  might provide useful information on the effect of distress on a person's life, and on improvement following treatment (Coates, Ayers, & de Visser, 2014; McKnight & Kashdan, 2009)

In most countries universal screening is not in place for any mental illness in the perinatal period and instead expert groups compile guidance on how to assess perinatal mental health (Lancet, 2016). Anxiety is now recognised as being important to assess in itself and as a predictor of depression (Heron et al., 2004; Orr et al., 2007). In the UK clinical guidelines suggest healthcare professionals consider asking two questions to identify depression at appointments with perinatal women (Whooley

questions; Whooley, Avins, Miranda, & Browner, 1997) and two questions to identify anxiety (GAD-2; Kroenke, Spitzer, Williams, Monahan, & Löwe, 2007; NICE, 2014). Whilst the inclusion of items relating to anxiety is to be welcomed,  by only asking about depression and anxiety women with other mental health problems, such as adjustment disorder and trauma may be missed.

One possible solution is to screen for multiple types of distress using a measure that is still brief. The ten-item Clinical Outcomes in Routine Evaluation (CORE-10; Connell and Barkham, 2007) is a short measure of psychological distress derived from the larger CORE-OM, a well-established measure for evaluating psychological therapies in  services in the UK (Barkham, Mellor-Clark, & Stiles, 2015). The CORE-10 has been used to assess and evaluate distress in studies of CBT and psychotherapy for psychosis (Owen, Sellwood,  Kan, Murray, & Sarsam, 2015; Peters et al., 2015; Schrank et al., 2014), art therapy for severe mental illness (Allan, Barford, Horwood, Stevens, & Tanti, 2015), and Increasing Access to Psychological Therapies services (Jolley et al., 2015). The CORE-10 has shown good psychometric properties in primary care and in depression trial participants (Barkham et al., 2013). It has not yet been tested as an assessment measure in perinatal women.

The potential suitability of the CORE-10 for assessing perinatal mental health lies in its broad coverage of symptoms of distress and associated functioning. It includes two items each to identify anxiety and depression; single items measuring  sleep, trauma, and risk to self; and three items about functioning representing close relationships, social relationships and general functioning (see Table 2). To avoid floor and ceiling effects four items have a low intensity (e.g. item one; I have felt tense, anxious or nervous) and six items have a high intensity (e.g. item five; I have felt panic or terror) (Connell and Barkham, 2007). A further strength is the inclusion of the risk to self item as research shows that approximately one fifth of women with perinatal mental illness report suicidal ideation (Boots Family Trust Alliance, 2013).

Based on its brevity, good psychometric properties, and wide coverage of psychological problems this study aimed to pilot the CORE-10 in an online sample of pregnant women.  The psychometric properties of the CORE-10, including convergent and factorial validity and its overlap with other

measures at identifying cases of anxiety and depression needing further psychological assessment will be evaluated. We also aimed to add to the existing literature regarding the prevalence of a wide-range of specific psychological symptoms in pregnant women.

**Methods**

*Design*

This was part of the Wellbeing in Pregnancy (WiP) online pragmatic pilot randomised-controlled trial (RCT) evaluating the efficacy of a Wellbeing Plan for pregnant women developed by the Boots Family Trust Alliance (Boots Family Trust, Netmums, Tommy's charity, Royal College of Midwives and the Institute of Health Visiting). Measures of depression, anxiety, and worry were completed prior to and immediately after the intervention, one-month later, and six weeks postnatally. The current study used the pre-intervention data. Data were collected in August and September 2015. Ethical approval was obtained from the university Research Ethics Committee.

*Participants*

A convenience sample of women was recruited online or through social media. Women were eligible to take part if they were 26 to 38 weeks pregnant, were aged 18 or over and had a level of English sufficient to understand and complete the Wellbeing Plan. The sample consisted of 366 women who completed the CORE-10 at the baseline data collection period.

*Measures*

*CORE-10*

Questions on the CORE-10 (Connell and Barkham, 2007) ask respondents how often they have experienced a symptom over the last week. Responses are measured on a 5-point Likert scale (0 not at all to 4 most or all of the time). Higher scores indicate higher distress. The total scale score is

computed by summing all present item scores, dividing by the number of items completed, and multiplying by 10. The range is 0 – 40. Two items (item 2 'I have felt I have someone to turn to for support when needed' and item 3 'I have felt able to cope when things go wrong') are worded positively so are reverse-scored. During development of the CORE-10 the difference between non-clinical (≤10) and clinical (≥11) scores was calculated using the method of Jacobson and Truax (1991) with a sample derived from 33 primary care counselling services where patients presented with a variety of mental health problems (Connell and Barkham, 2007). This method proposes the cut-off score that best differentiated members of a clinical versus a non-clinical population with the best balance of specificity and sensitivity (Connell and Barkham, 2007). The authors of the scale suggest clinical range scores of 11-14 are 'mild'; 15-19 'moderate'; 20-24 'moderate-to-severe'; and 25 or more 'severe' and to achieve reliable improvement a person must improve by six or more points on the scale (Connell and Barkham, 2013). Compared against a diagnosis of depression using the Structured Clinical Interview for DSM-III-R, a cut-off score of 13 or more gave sensitivity and specificity values of .92 and .72 respectively (Connell and Barkham, 2007). It is anticipated that item 7 (I have had difficulty getting to sleep or staying asleep) may need modification in perinatal women due to normal disruptions to sleep in this period, however it was not modified in this study as a change in wording has not been validated.

*Whooley questions*

The Whooley questions ask if, over the past month, you have been bothered by i) feeling down, depressed or hopeless, and ii) having little interest or pleasure in doing things. Answering 'yes' to either question is considered a 'case' for further assessment (Whooley et al., 1997). A yes response scores 1 and no scores 0 giving a range of 0 – 2.

*GAD-2*

The GAD-2 is a brief instrument for detecting anxiety disorders (Kroenke et al., 2007). The two items represent core anxiety symptoms: (i) feeling nervous, anxious, or on edge and (ii) not being able to

stop or control worrying. Respondents rate how they have felt over the last two weeks (0 not at all to 3 nearly every day). Scores range from 0-6. A cut-off of three or more has a sensitivity of 0.86 and specificity of 0.83 to detect generalized anxiety disorder; and a sensitivity of 0.59 – 0.76 and specificity of 0.83 to detect panic disorder, social anxiety disorder and PTSD in primary care patients (Kroenke et al., 2007).

*Worry item*

To measure worry about mental health throughout pregnancy in addition to the short timescales given on the measures above, women were asked 'Since becoming pregnant have you been worried at all about your psychological wellbeing?' with yes/no response options.

### Procedure

The study was advertised on websites (e.g. Netmums) and social media associated with the research team (e.g. Netmums, Tommy's charity, City University London, The Royal College of Midwives, the Institute of Health Visiting). Women followed a link to a page where they were: given information about the study, asked to confirm eligibility and asked whether they consented to participate. Baseline data were then collected. After completing the measures, links were provided to further resources about perinatal mental health. If suicidal intent was indicated, an alert generated by the survey provider was immediately emailed to the research team who initiated contact.

### Statistical Analysis

Concurrent validity of the CORE-10 was examined using Spearman's correlations for ordered and/or non-parametric data between CORE-10 and other self-report measures of anxiety and distress considering (.1) small, (.3) medium and (.5) large correlations (Cohen, 1988). The worry item was used as a proxy with which to examine criterion validity of the CORE-10 using a receiver operating characteristic (ROC) curve. The ROC curve plots the sensitivity and specificity of the CORE-10 at different cut-offs to identify worry about psychological health. The area under the curve (AUC) gives an overall estimate of the accuracy of the CORE-10.

*Factor analysis*

We tested the unidimensional model of the CORE-10 proposed by the scale's authors using confirmatory factor analysis. The maximum likelihood procedure was used to conduct the analyses. In all models, independence of error terms was specified for all variables; factors (if more than one) were allowed to correlate and each observed variable loaded on only one factor. Goodness-of-fit indices were used to assess the models (Kline, 2005). These are shown in Table 5 with optimal values for each index. Each fit index indicates one aspect of model fit only, thus multiple fit indices were considered (Kline, 2005). Given the number of indicators and factors, a sample size of 366 was considered adequate (Wolf et al., 2013). CFAs were conducted with AMOS version 21 (Arbuckle, 2012).

As the fit indices in the CFA were not adequate for the unidimensional model, we conducted exploratory factor analysis of the CORE-10 using principal axis factoring with oblique rotation (direct oblimin). Eigenvalues, scree plots, and amount of variance explained were examined to determine the number of factors to be retained. Factors were retained on the basis of eigenvalues greater than 1 (Kaiser, 1960) and examination of the scree plot (Velicer & Jackson, 1990; Cattell, 1966). A meaningful factor solution needs to explain at least 50% of the variance (Streiner, 1994). An item loading significantly on a factor was determined by a loading of .3 and above (Tabachnick & Fidell, 2012).

**Results**

*Participant characteristics*

Six hundred women enrolled in the study and 366 of them completed all the measures and demographic data needed for the current analysis. Women who dropped out without completing all the measures (n = 234) had significantly higher CORE-10 scores ($M = 12.19$) than women who remained but the effect size was small ($M = 10.98$), $t(566) = 2.02$; $d = .18$, $p = .044$.

Sample characteristics are shown in Table 1. Women had a mean maternal age of 30.15 years (age range 18 – 44). Most women were white, educated to at least A' level and were married or cohabiting; 22% disclosed a previous mental health diagnosis. Means are reported by demographic variables to provide normative data which further studies can use for comparison. Medians are reported for groups with small $n$.

*Prevalence and distribution of the CORE-10*

CORE-10 scores ranged from 0 – 34. 152 women (41.53%) scored 11 and above indicating a clinical level of distress (a probable 'case'). Using previously established categories of distress (Connell & Barkham, 2007) 56 women (15.30%) scored in the mild range of distress, 53 (14.48%) in the moderate range, 24 (6.56%) moderate-severe and 19 (5.19%) were severely distressed. Taking a different approach  (Matthey, Valenti, Souter, & Ross-Hamid, 2013; O'Connor, Heron, Golding, Beveridge, Glover, 2002) the top 15% of scorers were identified by a score of 18 and above, which falls into the 'moderate' range of distress using the established cut-offs.

The effect of demographic variables on the CORE-10 is presented in Table 1. There were no significant differences in CORE-10 scores by age group, parity or ethnicity ($p$s > .05). Post hoc tests showed that single women had significantly higher scores than married women $F(3, 360) = 3.05$; $d = .67$, $p = .029$. Women with no qualifications had significantly higher mean scores than women whose highest qualification was at GCSE level $F(6, 358) = 2.29$; $d = .66$, $p = .035$; and women who had a history of mental illness had significantly higher scores, $t(120.96) = -4.57$; $d = .61$, $p < .001$.

Item means and response categories are given in Table 2. The highest means were for items 'I have felt tense, anxious or nervous' and 'I have had difficulty getting to sleep or staying asleep'. The lowest mean score was for 'I made plans to end my life'. However, 16 women (4.37%) reported making plans to end their life occasionally, sometimes, often, or most of the time.

*Correlations and concordance with other measures*

Table 3 shows correlations between and mean scores on the measures. The CORE-10 had large correlations with all measures, and was most highly correlated with the GAD-2.

Comparison of cases identified by the CORE-10, Whooley questions and GAD-2 is shown in Table 4. There were 149 Whooley cases (40.71% of the whole sample). Eighty-three women (22.68% of the whole sample) scored as a case on the GAD-2. Table 4 shows the overlap between cases on each measure. Comparing the CORE-10 and the single worry item using the overlap approach, the CORE-10 detected 20% more cases of GAD-2 anxiety than the single worry item, but the CORE-10 and single worry item detected similar numbers of Whooley cases.. The CORE-10 detected a similar number of cases on the single worry item as vice versa. Comparing the CORE-10 and GAD-2, both detected a similar number of women worried about their psychological health. The CORE-10 detected almost 40% more GAD-2 cases than the GAD-2 detected CORE-10 cases. Comparing the CORE-10 and Whooley questions, the CORE-10 detected 27% more cases on the single worry item. Similar numbers of Whooley cases were detected by the CORE-10 as vice versa. On the ROC curve, the point of maximum sensitivity and specificity for the CORE-10 was indicated by a cut-off score of 10, giving 75.2% sensitivity and 67.6% specificity. The area under the curve indicated accuracy of 80.6%. For comparison, the area under the curve for the GAD-2 was 76.1%.

*Factor analysis*

Table 5 gives the fit statistics for the CFA. The unidimensional model (Model 1) showed good fit in terms of the CFI but TLI and RMSEA statistics were less than reasonable. Given the poor fit of Model 1, an EFA was run. It is understood that conducting EFA after CFA cannot *validate* the factor structure of the CORE-10. The EFA was instead carried out to further *explore* the dimensions of the measure. The data were suitable for factor analysis (Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .876; Bartlett's test of sphericity was significant, $p < .001$; Tabachnick & Fidell, 2012). Overall many correlations were low. Correlations ranged from .10 to .66.

A 2-factor solution was identified that accounted for 53.36% of the variance: a strong first factor of symptoms of distress (eigenvalue = 4.21; variance 42.07%) and a second factor of ways of coping (eigenvalue = 1.13; variance 11.29%) (Table 2). No items cross-loaded (loadings of items onto opposing factor ranged from .01 - .27). The two factors correlated at $r = .66$. Guided by the fit indices, the amount of variance explained and the meaningfulness of factors, Model 2 was selected as the best-fitting model.

*Reliability*

The symptoms factor showed good internal reliability (Cronbach's alpha .82). Item – total correlations were all above .3 except for item 6 (I made plans to end my life) which correlated with the scale at .29. The Spearman's correlation between items in the ways of coping factor was .46 ($p < .001$).

**Discussion**

This study investigated the psychometric properties of the CORE-10 in an online sample of pregnant women. Overall, levels of distress were high and anxiety was the most reported symptom. A two-factor model with subscales representing symptoms and ways of coping best fit the data. Internal reliability of the 'symptoms' factor was good. The CORE-10 showed good convergent validity and demonstrated the best ability to detect cases of anxiety (GAD-2). The CORE-10 and single worry item performed similarly in detecting depression (Whooley) and the CORE-10 and GAD-2 detected similar numbers of women worried about their psychological health. The CORE-10 had the highest concordance rates with all other measures, which may be expected as it has more items. The levels of endorsement of items such as not feeling able to cope, or not having someone to turn to for support, indicate that it may be appropriate to assess functioning as well as symptoms other than anxiety and depression. The sleep item may have to be adapted for perinatal use. Although sleep is often disrupted in pregnancy and after birth, such disrupted sleep may still be an indicator of depression and anxiety

(Lawson et al., 2015). Further research is needed to understand how best to assess whether sleep disturbance is typical or indicative of mental ill health for an individual.

This is the first time the CORE-10 has been evaluated in a perinatal sample. Validated measures of perinatal mental health other than depression are lacking (Webb, Ayers, & Rosan, 2018) and this study provides a first step in addressing multiple clinically relevant symptoms and provides initial convergent validity and an exploration of factor structure. However, we acknowledge the study's limitations. The sample was self-selected and women from ethnic minority groups are under-represented. Women with higher symptoms of distress may also be underrepresented as the women who dropped out had significantly higher scores on the CORE-10. The study did not include a clinical interview to validate the CORE-10. Furthermore, the time-frames for each of the measures used here was different which may be confusing to complete.

As this is the first study to use the CORE-10 with pregnant women, there is little published data with which to compare results. Correlations with the GAD-2 in this study were similar in magnitude to those found in previous validation studies between the CORE-10 and Beck Anxiety Inventory (.65) and between the CORE-10 and the Patient Health Questionnaire-9 (.56) (Barkham et al., 2013). The mean score in the present sample (10.98) is lower than in other samples using the CORE-10, such as participants referred to an occupational health service ($M$ = 17.1; Barkham et al., 2013) or young people engaging with a brief mental health intervention ($M$ = 19.72; O'Reilly, Illback, Peiper, O'Keeffe, & Clayton, 2015).

The results have a number of clinical implications. The symptom profile of women in this study provides evidence for broadening the concept of perinatal distress and how we screen for or assess it. Almost one third of the sample experienced feeling anxious, tense or nervous often or most or all of the time, many more than endorsed the depression symptoms. This is in line with previous research indicating that anxiety disorders are more prevalent than rates of minor or major depression in the

perinatal period (Matthey, Barnett, Howie, & Kavanagh, 2003; Reck et al., 2008; Phillips, Sharpe, Matthey, & Charles, 2009). An alternative explanation is that some anxiety is common and normal in pregnancy and should not be pathologised. For example, towards the end of pregnancy women may experience higher levels of anxiety related to the upcoming labour and birth. As may be expected, ('I made plans to end my life') was endorsed the least. However this item is useful as a red flag to identify women at high risk who need further assessment and support. Women dying by suicide in the perinatal period are less likely to be receiving any active treatment than those not in the perinatal period making it particularly important to identify this group of at-risk women (Khalifeh, Hunt, Appleby, & Howard, 2016). Furthermore, a benefit of using the CORE-10 is that it captures dimensions of symptoms and functioning (ability to cope and availability of help) whereas other measures (e.g. the Edinburgh Postnatal Depression Scale, Cox, Holden, & Sagovsky, 1987 or the K10, Kessler et al., 2002) capture symptoms only (McKnight & Kashdan, 2009).

There are a number of unanswered questions warranting further research. Validation of the CORE-10 against clinical interviews is needed to establish criterion validity for diagnostic disorders. Acceptability of the measure to women in pregnancy and after birth is also required to understand whether the items are understandable and relevant to women, particularly the item assessing sleep disturbance. Work is ongoing to establish this. The factor structure of the CORE-10 in pregnant women also needs further investigation to assess the ability of the ways of coping factor at distinguishing those in clinical need. It also needs to be determined whether these items load on to a separate factor and show limited use of response categories because they are positively worded. The CORE-10 may be beneficial to resource poor perinatal services, by encompassing screening for multiple mental health problems and support in one measure, with consequent need for training in one measure only. Its use would also provide consistency with IAPT services in the UK which are recommended to play a bigger role in perinatal mental health services (Davies et al., 2014). As with any assessment measure of mental health, use of the CORE-10 by maternity healthcare practitioners would need to take place in a care pathway that included initial assessment, referral for further consideration of the presenting problems, and subsequent treatment where necessary. Considering the

poor identification of perinatal mental health problems, the CORE-10 may offer benefits of assessing

a broad range of symptoms of postnatal distress, and support, within the confines of a measure brief

enough to be usable in clinical settings.

**Declaration of interest**

The authors confirm no conflicts of interest.

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**Table 1.** Demographics and descriptive statistics from the CORE-10.

| | | N (%)<br>N=366 | Mean (SD) | 95% CI | Median |
|---|---|---|---|---|---|
| Age | 18-24 | 50 (13.7) | 12.36 (7.25) | 10.30-14.42 | 10 |
| | 25-35 | 255 (69.7) | 10.88 (6.60) | 10.06-11.69 | 10 |
| | 36-44 | 61 (16.7) | 10.27 (6.34) | 8.65-11.90 | 8 |
| | Range 18-44 (M = 30.15, Mdn =30) | 366 (100) | | | |
| Gestation (weeks) | Range 20-39 (*M* = 31.30, Mdn =31) | 309 (84.4) | | | |
| Parity | First child | 169 (46.2) | 10.85 (6.79) | 9.82-11.88 | 9 |
| | Second child | 126 (34.4) | 10.94 (6.43) | 9.81-12.08 | 9.5 |
| | Third + child | 70 (19.1) | 11.47 (6.79) | 9.85-13.09 | 10 |
| | | 365 (99.7) | | | |
| Relationship status | Married | 214 (58.47) | 10.37 (6.36) | 9.51-11.23 | 9 |
| | Living with partner | 119 (32.51) | 11.24 (6.63) | 10.04-12.45 | 10 |
| | Separated/divorced | 1 (0.27) | | | |
| | Single | 11 (3.01) | 15.82 (9.48) | 9.45-22.19 | 12 |
| | In a relationship but not living together | 20 (5.46) | 12.6 (6.98) | 9.33-15.87 | 12 |
| | | 365 (99.7) | | | |
| Qualifications | None | 22 (6.01) | 14.18 (9.22) | 10.09-18.27 | 11 |
| | GCSE | 47 (12.84) | 9.13 (5.61) | 7.48-10.77 | 8 |
| | A Level | 39 (10.66) | 11.13 (6.96) | 8.88-13.39 | 9 |
| | City & Guilds | 18 (4.92) | 14.17 (5.95) | 11.21-17.13 | 15.5 |
| | Diploma | 52 (14.21) | 11.21 (5.37) | 9.72-12.71 | 11 |

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|  |  |  |  |  |  |
|---|---|---|---|---|---|
|  | Degree | 124 (33.88) | 10.55 (6.67) | 9.36-11.73 | 9 |
|  | Higher degree | 63 (17.21) | 10.87 (6.91) | 9.13-12.61 | 9 |
|  |  | 365 (99.7) |  |  |  |
| Ethnicity | Black | 5 (1.37) | 12.00 (6.63) | 3.77-20.24 | 12 |
|  | Asian | 6 (1.64) | 7.00 (4.47) | 2.31-11.69 | 8.5 |
|  | White British | 326 (89.07) | 10.92 (6.46) | 10.22-11.63 | 9 |
|  | White Other | 22 (6.01) | 10.64 (7.34) | 7.21-14.07 | 8.5 |
|  | Other | 7 (1.91) | 17.29 (10.83) | 7.27-27.30 | 12 |
|  |  | 366 (100) |  |  |  |
| Previous mental health diagnosis |  |  |  |  |  |
|  | Yes | 82 (22.40) | 13.68 (7.33) | 12.07-15.29 | 12.5 |
|  | No | 227 (62.02) | 9.57 (5.90) | 8.78-10.34 | 9 |
|  |  | 309 (84.42) |  |  |  |

**Table 2.** CORE-10 Item content and descriptive statistics ($N = 366$).

| Item | Description | Mean | SD | Item-test correlation | Factor loading EFA (factor) | Response category proportions (%) | | | | |
|------|-------------|------|-----|------------------------|------------------------------|------|------|------|------|------|
| | | | | | | 0 | 1 | 2 | 3 | 4 |
| 1 | I have felt tense, anxious or nervous | 1.98 | 1.03 | 0.73 | .654 (1) | 5.7 | 30.1 | 31.4 | 26.0 | 6.8 |
| 2 | *I have felt I have someone to turn to for support when needed* | 0.60 | 0.89 | 0.51 | .783 (2) | 62.0 | 21.9 | 10.7 | 5.5 | 0 |
| 3 | *I have felt able to cope when things go wrong* | 0.54 | 0.76 | 0.61 | .495 (2) | 59.8 | 28.4 | 9.6 | 2.2 | 0 |
| 4 | Talking to people has felt too much for me | 1.01 | 1.13 | 0.68 | .493 (1) | 45.9 | 20.8 | 22.7 | 7.7 | 3.0 |
| 5 | I have felt panic or terror | 0.73 | 1.06 | 0.60 | .725 (1) | 60.4 | 16.4 | 16.4 | 3.8 | 3.0 |
| 6 | I made plans to end my life | 0.07 | 0.36 | 0.29 | .368 (1) | 95.6 | 3.0 | 0.8 | 0.3 | 0.3 |
| 7 | I have had difficulty getting to sleep or staying asleep | 2.12 | 1.29 | 0.52 | .429 (1) | 13.7 | 21.0 | 21.3 | 27.9 | 16.1 |
| 8 | I have felt despairing or hopeless | 0.63 | 1.02 | 0.69 | .735 (1) | 65.3 | 15.6 | 12.0 | 4.9 | 2.2 |
| 9 | I have felt unhappy | 1.13 | 1.05 | 0.72 | .768 (1) | 33.3 | 34.2 | 21.3 | 8.7 | 2.5 |
| 10 | Unwanted images or memories have been distressing me | 0.74 | 1.08 | 0.59 | .611 (1) | 59.3 | 20.2 | 10.4 | 7.4 | 2.7 |

Correlations are Spearmans's rho for non-parametric data. Response categories: 0 = Not at all; 1 = Only occasionally; 2 = Sometimes; 3 = Often; 4 = Most or all of the time. Items in italics are reverse-coded.

**Table 3.** Correlations between measures.

| | Mean (SD) | Measure | | |
|---|---|---|---|---|
| | | CORE10 | GAD2 | Whooley |
| **CORE-10** | 10.98 (6.66) | - | 0.69 | 0.64 |
| **GAD2** | 1.72 (1.69) | | - | 0.52 |
| **Whooley** | 0.63 (0.83) | | | - |

**Table 4**. Concordance between measures detecting cases for further assessment.

| % detected by | If a 'case' on this measure | | | |
|---|---|---|---|---|
| | CORE-10 | GAD2 | Whooley | Worried about psychological health |
| **CORE-10** | - | 87.9% | 73.2% | 68.5% |
| **GAD2** | 48.0% | - | 48.0% | 67.6% |
| **Whooley** | 72.2% | 75.6% | - | 41.6% |
| **Worried about psychological health** | 67.1% | 67.6% | 74.7% | - |

**Table 5.** Fit statistics for the Confirmatory Factor Analyses for the CORE-10 in the WiP Study (N = 366)

| Factor Model | $X^{2}$ [a] | *df* | *p* | NC[b] | CFI[c] | RMSEA[d] | (90% CI) | TLI[e] | PCFI[f] | AIC[g] |
|---|---|---|---|---|---|---|---|---|---|---|
| **One factor CFA** | | | | | | | | | | |
| **Model 1** | 129.17 | 35 | .000 | 3.69 | .92 | .086 | (.070-.102) | .89 | .71 | 169.17 |
| **Two factor CFA** | 87.07 | 34 | .000 | 2.56 | .95 | .065 | (.049-.083) | .94 | .72 | 149.07 |

[a] Statistically significant chi-square value indicates a significant proportion of variance is unexplained by the model (Kline, 2005); [b] NC = normed chi-square ($\chi^2/df$) values <5 indicate reasonable fit (Kline 2005) CFI values > .9 indicate good model fit (Kline, 2005); [c] RMSEA values < .05 indicate good model fit, .05-.08 reasonable model fit, > .1 poor model fit (Hu & Bentler, 1999; Kline, 2005); [d] TLI values > .9 indicate good model fit (Kline, 2005); [e] PCFI values closer to 1 indicate better model fit; [f]The model with the smallest AIC is the one with relatively better fit (Kline, 2005). TLI and CFI are most stable with reference to the number of variables (Kenny, 2014).