

Emotional Suppression and Breast Cancer: Validation Research on the Spanish Adaptation of the Courtauld Emotional Control Scale (CECS)

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Emotional suppression has played an important role in the research on psychosocial factors related to cancer. It has been argued to be an important psychological factor predicting worse psychosocial adjustment in people with cancer and it may mediate health outcomes. The reference instrument in the research on emotional suppression is the Courtauld Emotional Control Scale (CECS). The present study analysed construct validity of a new Spanish adaptation of the CECS in a sample of 175 breast cancer patients. The results confirmed the proposal by Watson and Greer claiming that the CECS is composed of three subscales that measure different dimensions, but not independent, from emotional control. The present Spanish version of the CECS showed high internal consistency in each subscale as well as the total score. According to Derogatis (BSI-18) criteria, emotional suppression predicts clinically significant distress. In short, our results support the reliability, validity and utility of this Spanish adaptation of the CECS in clinical and research settings.

Keywords: CECS, emotional control, emotional suppression, psychosomatics, breast cancer, emotional distress.

La supresión emocional ha jugado un papel importante en la investigación de los factores psicosociales relacionados con el cáncer. Se ha discutido que es un importante factor psicológico que predice un peor ajuste psicosocial en las personas que sufren cáncer y que puede mediar los resultados médicos. El instrumento de referencia en la investigación acerca de la supresión emocional es el Courtauld Emotional Control Scale (CECS). El presente estudio analiza la validez de constructo de una nueva adaptación española del CECS en una muestra de 175 pacientes con cáncer de mama. Los resultados confirman la estructura propuesta por Watson y Greer para el instrumento, compuesta de tres subescalas que evalúan distintas dimensiones no independientes, del control emocional. La presente versión española del CECS mostró una elevada consistencia interna de cada una de las subescalas y de la puntuación total. Además la supresión emocional predice el distrés clínico significativo, según criterios de Derogatis (BSI-18). En resumen, nuestros resultados respaldan la fiabilidad, validez y utilidad de la adaptación española del CECS en contextos clínicos y de investigación.

Palabras clave: CECS, control emocional, supresión emocional, psico-somatización, cáncer de mama, distrés emocional.

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Emotional suppression (the attempt to control expression of negative affect) has played an important role in psychosocial research on cancer patients. In fact, this construct has been increasingly considered as an important psychological variable that affects the psychosocial adjustment in people with cancer and it might mediate health outcomes (Cordova, et al., 2003).

In the past three decades, a great deal of research on psychosocial risk factors in cancer has focussed on the hypothesis of a Type C behavior pattern involved in cancer onset and prognosis (Contrada, Leventhal & O'Leary, 1990; Greer & Watson, 1985; Gross, 1989; McKenna, Zevon, Corn & Rounds, 1999; Temoshok, 1987). A key component in this pattern is emotional suppression (Morris & Greer, 1980; Temoshok & Fox, 1984). Temoshok (1987, p.548) describes "Type C" individuals as being "cooperative and appeasing, unassertive, patient, inexpressive of negative emotions (particularly anger) and compliant with external authorities". The lack of consistency in the results obtained on this topic, however, has been discouraging. Researchers have underlined heterogeneous designs, constructs and evaluation instruments, comparison groups, dependent and independent variables, etc. as causing factors of the inconsistency (Andreu, 1998; Contrada et al., 1990; Ho & Silberfarb, 1998; Fox, 1988, 1995; Gross, 1989; Ibáñez, Romero & Andreu, 1992; Levi, 1983; Temoshok & Heller, 1984). In a recent revision of this topic, Garssen (2004) describes the questionable role played by suppression of emotion at the onset, but as a promising risk factor in the progression of cancer.

Emotional suppression is also outlined as an important variable in those studies dealing with the patient's psychological adjustment when diagnosed and undergoing cancer treatment. Patients who are diagnosed with a life-threatening illness (such as cancer) obviously undergo emotional distress. However, the extent of feelings of emotional distress varies in different patients (Iwamitsu et al., 2005a). In fact, only one-third of oncology patients experience clinically significant distress associated with diagnosis and treatment (Carlson et al., 2004; Sellick & Crooks, 1999; Stefanek, Shaw, DeGeorge & Tsottles, 1989). Therefore, identifying patients who may potentially experience significant difficulty in their attempts to cope and adapt to their diagnoses and treatments is a primary objective (Zabora, 1998). Studies by Pennebaker and colleagues (Pennebaker, Mayne & Francis, 1997; Pennebaker, 1999) have shown that expressing one's emotions and acknowledging traumatic events had positive effects on physical and mental health. Two lines of research involving cancer patients suggest that coping through expressing emotion may enhance their adjustment to the illness. First, studies of psychological interventions, in which the facilitation of emotional expression is one intervention component,

provide evidence that these interventions can enhance psychological adjustment (Fawzy et al., 1990; Spiegel, Bloom & Yalom, 1981; Spiegel, Morrow, Classen, 1999). Second, studies of adjustment to cancer indicate that emotional suppression is associated with more emotional distress (Classen, Koopman, Angell & Spiegel, 1996; Iwamitsu, Shimoda, Abe, Tani & Okawa, 2002; Iwamitsu et al., 2003; Iwamitsu et al., 2005a; Watson et al., 1991) and contrary to this, coping with emotional expression is associated with decreased distress and a better quality of life (Low, Stanton & Danoff-Burg, 2006; Stanton et al., 2000; Stanton, Danoff-Burg & Huggins, 2002). As pointed out by Kennedy-Moore and Watson (2001, p. 187), emotional expression might alleviate distress in three interrelated key mechanisms: "expression can reduce distress about distress; expression can facilitate insight; and expression can affect interpersonal relationships in a desired way".

The most relevant instrument in research on emotional suppression is the Courtauld Emotional Control Scale (CECS), developed by Watson and Greer (1983) to assess the extent to which individuals report controlling their reactions when a particular negative emotion is experienced. The CECS is a 21-item questionnaire separated into three subscales for the specific report of the suppression or the expression of anger, anxiety and depressed mood. Scale items were derived from the responses given in previous studies (Greer & Morris, 1975; Morris, Greer, Pettingale & Watson, 1981) by breast biopsy patients in semi-structured clinical interviews. From this information the authors obtained 48 statements distributed equally in three subscales. Each one was preceded with the statement "When I feel..." followed by either "angry", "afraid", "unhappy". The item response categories were rated on a 4-point scale ranging from "Almost never" to "Almost always". The items were scored so that a high score indicated control of emotional response. This preliminary version of the CECS was administered to a sample of 140 healthy subjects. The mean age of the sample was 28, with a range between 18-65 years of age. In order to determine the items which best discriminated emotional control, the responses were analysed using a principal components procedure with a Kaiser varimax rotation. The 7 items with the highest loadings on each subscale were included in the final version. The internal consistency of the subscales was good: alpha coefficients ranging from .86 (anger subscale) to .88 (depressed mood and anxiety subscales). Correlations between the 3 subscales and total scores indicated the questionnaire as a whole measures a general tendency to report controlling emotional responses. Three to four week test-retest reliability ($N = 40$) was also good: anger (.86), anxiety (.84), and depressed mood subscales (.89), and total CECS score (.95). Finally,

concurrent validity of CECS was tested (Watson & Greer, 1983), among other questionnaires, with the Spielberger State-Trait Personality Inventory (STPI) (Spielberger, 1979). Predicted inverse correlation between control over anger and anxiety (CECS) and frequency of experiencing these emotional responses was obtained; however it only reached significance in the case of anger.

Since its creation, the CECS has been used by a great number of researchers. In fact, the instrument has been adapted to different languages such as Italian (Grassi, Watson, & Greer, 1985), Chinese (Ho, Chan & Ho, 2004), and Spanish (Anarte, Esteve, Ramírez, López & Amorós, 2001). Using a sample of healthy subjects ($N = 389$), the Italian version confirms the results of interdependence between the subscales and obtains good test-retest reliability and concurrent validity. Ho et al. (2004) found satisfactory results with regard to internal consistency and concurrent validity of the Chinese version of the CECS in a sample of female cancer survivors ($N = 139$).

Anarte et al. (2001) carried out a Spanish adaptation of the CECS, using a sample of 83 cancer patients and a dichotomised answer format. In the first principal components factor analysis separately carried out independently on each of the separate CECS subscales (anger, anxiety, and depressed mood), the authors were not able to confirm the proposed initial structure by Watson and Greer (1983): 6 of the 21 items that make up the CECS obtained saturation under .30 and only the consistency of the total scale exceeds the value of .60. A second principal components factor analysis with the scale in its totality reveals the existence of three factors which are somewhat more consistent (alpha coefficients ranging from .60 to .73) but that do not replicate in any case the three original CECS subscales. In fact, only 12 of the 21 items are collected from the original instrument; items that do not always obtain the highest saturation in the factor in which it initially belong.

The primary aim of the present study was to carry out a new Spanish adaptation of the CECS, given the difficulties found with the first adaptation. We start from a new translation of the instrument and maintained the original answer format (4-point scale ranging from "Almost never" to "Almost always"). This objective includes the study of the internal CESC structure which was done by confirmatory factor analysis, which is a more powerful methodology than exploratory factorial analysis frequently used in these cases (Schmitt, 1995). A second aim was to carry out lineal and logistic regressions to examine the predictive validity of the CECS with respect to emotional distress. Lineal regressions were used with the direct scores obtained in the BSI-18 scales, and logistic regression was applied when BSI-18 case ness cut-off was used, following the criteria established by Derogatis (2000).

Method

Participants

This study is part of a longitudinal research project analysing the course of emotional distress levels and the responses of posttraumatic stress throughout the diagnostic process and treatment of breast cancer. Consecutive patients were approached at the second preoperative visit to the outpatient clinic of the department of surgery at the *Fundación Instituto Valenciano de Oncología* (F.I.V.O.) – the Spanish Institute of Oncology. Of the women approached, those diagnosed as having malignant breast tumours after biopsy and histological investigation were selected for our sample if they met two additional eligibility criteria: 1) aged between 18 and 70 inclusive and 2) were not participating in any clinical trial. The age criteria was established in order to compare the results with most of the studies concerning this topic, which consider the same age range (Grassi & Molinari, 1988; Watson & Greer, 1983). Of the eligible subjects approached, 175 (93%) agreed to participate. Analyses showed that there was no significant difference between the sample and those women that refused to participate ($n = 14$) in any demographic or cancer-related variables.

The age range of the sample was between 27 and 70; however, the mean was around 50 ($M = 52.7$, $SD = 10.12$). These women were mostly married or lived with a steady partner (78%) and had, at most, a primary education level (84%). Regarding employment status, 60% of the women were housewives, whereas only 36% worked outside of the home. The most frequent diagnosis in the sample was Invasive Ductal Carcinoma (68%). The majority of women were in the early stages of breast cancer (92% stages I and II) and only 8% were in a stage III, but statistical differences were not found between the stages. Chemotherapy (with or without radiation therapy) was the most frequent (88%); the number of most cycles ranged between 6 and 8.

Materials

Sociodemographics, disease, and treatment

Participants provided sociodemographic data (age, marital status, education level, employment status) on a general information form developed for this study. Other cancer-related variables, such as stage of disease and surgical treatment data were obtained from the patient's medical history.

Emotional suppression

A Spanish version of the CECS (Watson & Greer, 1983) was developed through the procedures of translation and back translation to ensure the meaning of each

statement corresponded accurately to the meaning of the original one. Firstly, the instrument was translated by three psychologists independently. Secondly, they met to agree on a final version, comparing the three translations and the translated version (Anarte et al. 2001). Lastly, this final version of the instrument was then again translated back into English by a native translator for comparison purposes. The original and the translated version were basically identical, so the definitive Spanish version was accepted.

The instrument (See Appendix I) was administered on the two occasions already described: before starting treatment and during the first or second follow-up visit. A total of 61 women in the initial sample completed this second stage. Differences between this sample and the initial sample were evaluated, and the results showed that the reduction of the sample did not produce differences in the demographics or cancer-related variables or in emotional suppression ($p \leq .122$ and $p \leq .843$, for Chi-square or ANOVA, depending on the type of variable considered).

Emotional distress

The BSI-18 (Derogatis, 2000) is a self-reported measure of psychological distress. The items are rated on a 5-point Likert scale from 0 (not at all) to 4 (always). The patient is asked to respond to each item in terms of "how they have been feeling during the past 7 days". The instrument contains a global scale, which consists of the sum of 18 items (ranging from 0 to 72), and three subscales, composed of six items each (ranging from 0 to 24). For this study, the Spanish translation published by Derogatis was used. This version has shown adequate construct validity in a previous study with women who were diagnosed with breast cancer (Galdón et al., 2008). The BSI-18 was completed by 118 women who were receiving adjuvant treatment for breast cancer. Analyses showed that there was no significant difference in any demographic, cancer-related or emotional suppression variables between the initial sample ($N = 175$) and the remaining sample at that moment (concretely, $p \leq .477$ and $p \leq .843$, for Chi-square or ANOVA, depending on the type of variable considered).

The internal consistency of the BSI-18 total score and its subscales of somatization, depression and anxiety was satisfactory in all cases, except for somatization scale, which barely reached the value of .60 (Cronbach's $\alpha_T = .81$, $\alpha_S = .59$, $\alpha_D = .76$, y $\alpha_A = .78$, respectively).

Finally, criteria established by the author of the instrument (Derogatis, 2000) were considered to identify distress caseness as required in some analyses. Note that, following the BSI-18 manual, subjects with a T-score higher than 63 in general distress or at least in two of the BSI-dimension are considered caseness.

Procedure

Once the psychologist in charge of the evaluation had informed the participants of the research objectives and the procedure to follow, participants provided written informed consent and were asked to complete a set of standardised, paper-and-pencil questionnaires at each administration. The first time socio-demographic data of the sample was obtained and emotional suppression was evaluated. Five months later, when patients were receiving adjuvant treatment for breast cancer, emotional distress was evaluated ($N = 118$). Finally (within the aforementioned longitudinal study), after completing cancer treatment and during the first or second follow-up visit (approximately 18 months later) emotional suppression was evaluated again ($N = 61$). You can see the diagram of the procedure for data acquisition in figure 1.

Coinciding with patient medical visits at the hospital centre, the individual format and self-report format were administered. In all cases, the psychologist was present and attended to any doubts that might occur.

Statistical analysis

Confirmatory factor analyses (CFAs) were carried out using the EQS programme in order to determine the factor structure of the questionnaire. Maximum likelihood was employed to estimate the model since it has been reported (Hair, Anderson, Tatham & Black, 1999) to perform reasonably well even under several non-optimal conditions such as 'small size' and violation of the

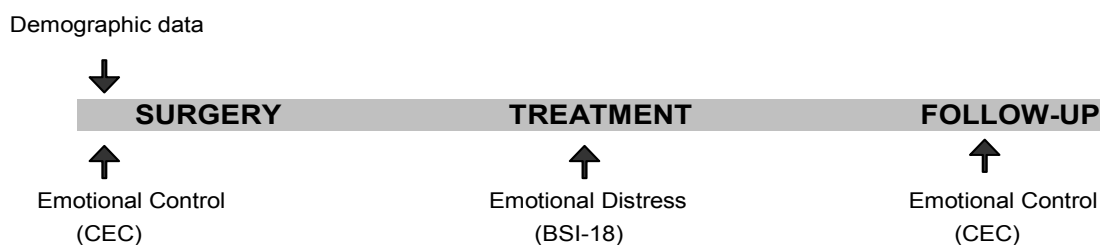


Figure 1. Methodological Procedure.

normality assumption. Moreover, the present study used a broad range of statistical tests and indexes designed to assess the goodness of fit of data to a proposed model due to their different potential strengths and weaknesses. The statistics considered (acceptable criteria level in parenthesis) were root mean square error of approximation (RMSEA < .08, confidence interval 90%), non-normed fit index (NNFI > .90) and robust comparative fit index (RCFI > .90). The criterion values used were in line with those proposed by Hu and Bentler (1999). The RMSEA assesses the error due to approximation, which refers to the lack of fit of the model to the population covariance matrix; it is also a measure of the discrepancy per degree of freedom between the model and the data, compensating for model complexity. The NNFI compares the proposed model with a null model in which the variables are independent, adjusting this value according to the degrees of freedom; this is an indicator which is relatively free of sample size contamination, and it imposes an appropriate penalty function for the inclusion of additional parameters. Lastly, the RCFI also compares the existing model fit with a null model, which specifies no relationship among the observed variables.

In addition to these indexes, a comparative fit using chi-square was also considered because of its utility for future comparisons, despite criticism regarding its use in small sample sizes (Hu & Bentler, 1999). This index expresses the degree of fit which the model proposes to reproduce with the observed data. The higher the value the higher the discrepancy between the observed data and those expected by the model. The values indicating a good fit are between 1 and 2 (Hair et al., 1999). *P* values over .05 indicate a good fit between the observed and estimated matrix by the proposed model. Nevertheless, it is an index which is highly dependent on the number of subjects so Chi-square divided by the degrees of freedom of the model is used.

The aim of the study was to examine the latent factors of the first- and second-order levels defined according to the established items specified by Watson and Greer (1983). In the event of an unsatisfactory fit with the confirmed models, three aspects were examined: the significance of the different saturations, the existence of covariances between errors, and unexpected saturations according to the models submitted to confirmatory analysis (cross-loadings). These aspects were then considered and modified, leading to the calculation of a new model that reduces the effect of these alterations with respect to the original proposal.

To test the reliability of the measure, internal consistency of the scales was computed using Cronbach's alpha coefficient, and Pearson's product moment correlations were calculated to investigate the temporal stability of the CECS.

Finally, as previously commented, lineal and logistic regressions were carried out, with the direct scores obtained in the BSI-18 scales and BSI-18 case ness cut-off following the criteria established by Derogatis (2000), respectively.

Results

Structural Considerations

Firstly, latent factors of the first- and second-order levels were defined according to the established items specified by Watson and Greer (1983). Table 1 shows the theoretical assignment of the 21 items, together with the mean (*M*) and standard deviation (*SD*). Also, a total score in emotional control can be obtained from the three factors: Anger, Anxiety and Depression. Each factor consists of 7 items.

The adjustment achieved by the original model did not initially show satisfactory indexes; therefore, the model was modified after examining both first- and second-order saturations. Modification indexes, which contemplated the correlation between errors (both items and factors) and the saturation of the item in other factors (cross-loadings), were also examined. Taking into consideration these modification indexes, a new model was proposed. It consisted of the original structure, but included the correlation between errors of items 8-9 ($r = .61$) and 16-17 ($r = .41$).

This corrected model was then analysed, and in this case it obtained mostly satisfactory adjustment indexes (table 2). The value of S-B χ^2 , with 184 degrees of freedom was 268.84. This was statistically significant ($p < 0.001$) with a χ^2/df index low to 2 (1.46). The RMSEA was 0.05, being under the limit value. Both NNFI and RCFI considerably exceeded the cut-off value of 0.90 (0.97 in both cases). Thus, the final model showed acceptable adjustment levels except in the case of χ^2 . It should be pointed out that Satorra-Bentler chi-square (χ^2) has received recent criticism regarding its use in small sample sizes (Hu & Bentler, 1999).

This final model is shown in Figure 1, where standardised item saturation in each factor and the saturation of the first-order factors in the second-order factor are shown. For informative purposes the R^2 of the first-order factors (not reflected in the figure) are the following: Anger, 19%; Depressed Mood, 62% and Anxiety, 88%.

Reliability

Once the factor structure of the questionnaire was confirmed (including some correlation between errors), the internal consistency of the total score and each of the CECS subscales were calculated. In all cases the internal

Table 1
Mean & Standard Deviation of the items in each of the CECS dimensions (N = 175)

| | <i>M</i> | <i>SD</i> |
|---------------------------------------|----------|-----------|
| Anger subscale | 16.08 | 4.15 |
| 1. I keep quiet | 2.11 | 1.17 |
| 2. I refuse to argue or say anything | 2.27 | 1.18 |
| 3. I bottle it up | 2.09 | 1.13 |
| 4. I say what I feel* | 2.17 | 1.15 |
| 5. I avoid making a scene | 3.13 | 1.06 |
| 6. I smother my feelings | 2.29 | 1.08 |
| 7. I hide my annoyance | 2.06 | 1.08 |
| Depressed mood subscale | 18.87 | 6.51 |
| 8. I refuse to say anything about it | 2.47 | 1.16 |
| 9. I hide my unhappiness | 2.53 | 1.15 |
| 10. I put on a bold face | 2.98 | 1.08 |
| 11. I keep quite | 2.58 | 1.14 |
| 12. I let others see how I feel * | 3.07 | 1.01 |
| 13. I smother my feelings | 2.70 | 1.08 |
| 14. I bottle it up | 2.58 | 1.10 |
| Anxiety subscale | 18.63 | 4.56 |
| 15. I let others see how I feel * | 2.91 | 1.12 |
| 16. I keep quiet | 2.71 | 1.20 |
| 17. I refuse to say anything about it | 2.59 | 1.22 |
| 18. I tell others all about it * | 2.73 | 1.10 |
| 19. I say what I feel * | 2.63 | 1.12 |
| 20. I bottle it up | 2.42 | 1.17 |
| 21. I smother my feelings | 2.65 | 1.10 |
| Total CECS score | 53.52 | 18.82 |

*Reverse scored items.

consistency index exceeded .90. Instrument reliability can be considered highly satisfactory (Table 3).

Moreover, instrument test-retest reliability was calculated by using a follow-up administration of the CECS within the previously mentioned longitudinal study. As has been specified, this second administration was carried out 18 months after the first, when hospital treatment had been completed, precisely in the patient's first or second six-month medical revision. With the exception of the anxiety control scale, the correlation value exceeded .60 (Table 3) and the CECS Total Scale obtained a satisfactory index of .70.

Predictive Validity

Remember that 118 patients in the initial sample also completed the BSI-18 when they were in treatment. Using these scores, lineal and logistic regressions were carried out (Table 4). The first enabled checking that the CESC general score explained a significant percentage of 6% ($p = .004$) of the variance of the depression dimension

and 4% of the general distress score ($p = .019$). Moreover, by considering Derogatis (2000) criteria as a definition of a clinical case, it also turns out that the global score of the CECS is significant in the prediction of this dichotomised variable, explaining in this case up to a 13% of the variance ($p = .006$).

Discussion

The main objective of this research was to study, by means of confirmatory factor analysis, the structural component of the Spanish adaptation of the Courtauld Emotional Control Scale (CECS), respecting the 4-point response scale (from "Almost never" to "Almost always") of the original instrument format. The results obtained with a sample of women who had been recently diagnosed with breast cancer showed the proposed structure by the authors (Watson & Greer, 1983) reached satisfactory adjustment indexes. However, the independence among items was not absolute and a corrected model with

Table 2
Indexes yielded by confirmatory factor analysis of each model (N = 175)

| Indexes | Model | | |
|------------------------|---------|----------------|-----------------|
| | Null | Original | 3D ^a |
| RMSEA (90% CI) | - | .072 (.06-.08) | .050 (.04-.07) |
| RCFI | - | .95 | .97 |
| NNFI | - | .94 | .97 |
| S-B χ^2 | 3312.56 | 349.70 | 268.84 |
| <i>Df</i> | 210 | 186 | 184 |
| χ^2/df | - | 1.88 | 1.46 |
| AGFI ^b | - | .76 | .80 |
| Correlated item errors | - | - | 8-9, 16-17 |

^a($\Delta\chi = -80.86$; $p < 0.001$)

^b No robust version

RMSEA: Robust Root mean-square error of approximation

RCFI: Robust comparative fit index

NNFI: Bentler-Bonett non-normed fit index

S-B²: Satorra-Bentler chi-square

Df: degree of freedom

AGFI: Adjusted goodness-of-fit index

Table 3
 Internal Consistency (N = 175) & Test-retest Reliability (N = 61) of the CECS scales

| | Cronbach's α | Test-Retest <i>r</i> |
|------------------|---------------------|----------------------|
| Anger | .92 | .62** |
| Depressed mood | .93 | .62** |
| Anxiety | .93 | .39** |
| Total CECS score | .94 | .70** |

** $p < .001$

Table 4
BSI-18 Linear and Logistic Regression with CECS total score as predictors

| <i>Linear Regression</i> | | | | |
|----------------------------|-------|-----------------|------|----------|
| | R^2 | R^2 corrected | Beta | <i>p</i> |
| Somatization | .018 | .010 | .135 | .147 |
| Depression | .070 | .062 | .264 | .004 |
| Anxiety | .016 | .008 | .126 | .173 |
| GSI ^a | .048 | .039 | .218 | .019 |
| <i>Logistic Regression</i> | | | | |
| | R^2 | | B | <i>p</i> |
| BSI Caseness ^b | .126 | - | .054 | .006 |

a. GSI (Global Severity Index): BSI-18 total score

b. Caseness criteria obtained based on a T score higher than 63, using published norms for Community sample.

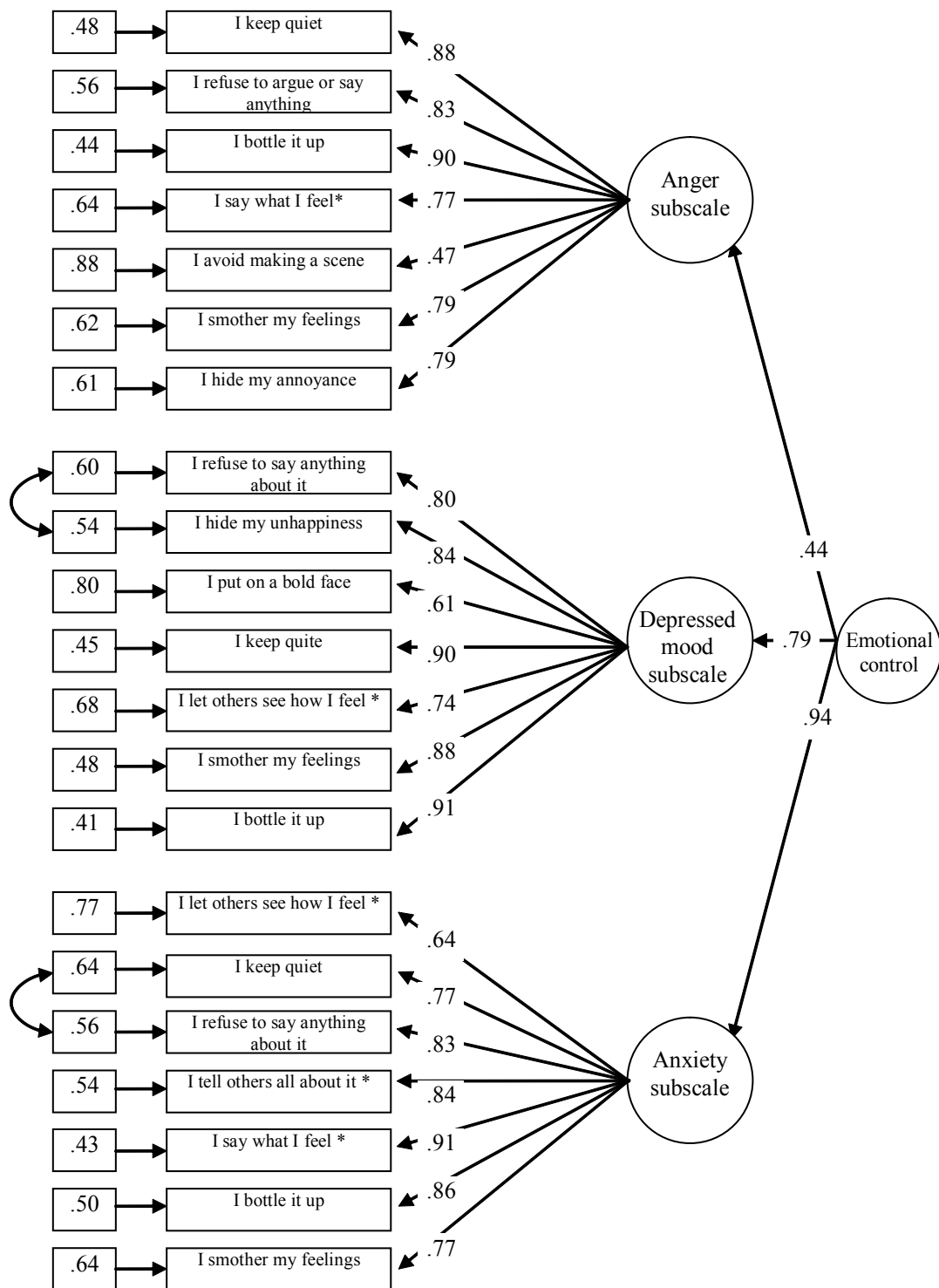


Figure 2. Structural model of the CECS.

correlation between errors of some items was computed. This corrected model clearly confirmed the distribution of the items in the corresponding dimensions which were proposed and showed high item-factor discrimination in all the cases (there were no cross-loadings).

These results are consistent with the few studies—besides the initial study of the authors—which deal with structural analysis of the CECS (Grassi et al, 1985; Ho et al., 2004). As in our study, both cases deal with adaptations to other languages; however, these studies do not utilise

factor analysis (exploratory or confirmatory) to confirm the original structure of the CECS. Instead, the study of structural component of the instrument is limited to the analysis of the correlations between total score and the subscales which make up the CECS. We understand that the confirmation of the structure offered by confirmatory factory analysis carried out in this study is more solid: confirmatory factor analysis (CFA) applied to the study of the structure verifies its construct validity with a strict fit to the criteria pointed out by Messick (1995) and, therefore, the CFA evaluates the theoretical correspondence of construct in the data (Schmitt, 1995). Our data confirm the proposal by Watson and Greer (1983) claiming that the CECS is composed of three subscales that measure different dimensions, but not independent from emotional control. Thus, the questionnaire as a whole measures a general tendency to report controlling emotional responses.

Concerning scale reliability, our results in the Spanish breast cancer patients showed high internal consistency in each subscale as well as the total score. Furthermore, the obtained correlated values between the two administrations of the CECS (temporal stability) showed satisfactory results in the total score. However, it has to be pointed out that the long period between two measures could easily facilitate the intermediation of external variables or circumstances affecting the results. Thus, the indexes obtained should be considered as indicative and only a step forward to approach the stability of the scale. In fact, our results show moderate indexes in anger and depression subscales, and unexpectedly low in the anxiety subscale. Comparing with other results, higher values of temporal stability appear in both the study carried out by the authors of the instrument (Watson & Greer, 1983) and the Italian adaptation (Grassi et al., 1985) (exceeding .80 at the subscale level and .90 for the total scale in both cases). It is worth pointing out that the time interval between the two administrations of the instrument was a month and 40-60 days, respectively. In our case, the time interval was longer: a year and a half, time in which the woman had completed breast cancer treatment. In this respect, our results are similar to a great extent to those of Giese-Davis and Spiegel (2001), which had a time interval of one year. The stability index was identical to ours for the CECS total score. Thus, these indicative results seem to be coherent with the fact that the CECS was developed as a trait measure of emotional control (Watson & Greer, 1983).

However, our results failed to confirm temporal stability of CECS anxiety scale reliability. A possible explanation can be related to the fact that implicit uncertainty concerning an illness such as breast cancer ends up altering the behavior control of anxiety in these women. Moreover, it is also possible that the situation of having to wait for results about the disease at a follow-up visit could generate anxiety symptoms which the

cultural and social context “allow” to express, facilitating emotional expression and, therefore, influencing or modifying “emotional control” responses. Finally, it has to be said that the sample concerning the reliability analysis was reduced to sixty women; this sample size, although acceptable, could have influenced the results. Thus, more in-depth research is needed on the behavior pattern of emotional control through diagnostic process and cancer treatment. As mentioned before, the temporal reliability of the measure has been confirmed in some studies in a short term and the CECS total score has shown high long-term stability in our findings and previous results. However, this is the only paper also considering the stability of the CECS scales throughout the cancer process, although the correlations have been moderate for depression and anger scales and very low for the anxiety scale. Future research should be addressed at testing the potential of the CECS scales to assess the different dimensions of the emotional control as trait measures reliable throughout the long-term cancer process.

The second objective of this paper was to examine the predictive validity of the CECS in terms of its association with a measure of emotional distress—the BSI-18. The expected relationship between these measures is presented as an indicator of the predictive validity of the CECS, based on the basic idea that effective coping involves some emotional disclosure (Pennebaker, 1980) and following the results of different researchers that show a positive association between emotional control and distress (Classen et al., 1996; Cordova et al., 2003; Iwamitsu et al., 2002; Watson et al., 1991). In our case, this association was confirmed by the significant percentage of distress variance explained by the CECS total score, both considering the direct scores (dimensions and general distress) or, even more in the case, transformed into clinically relevant distress cases, using the Derogatis' criteria (Derogatis, 2000). Moreover, these results are highly consistent with studies in which an association is found between emotion control and distress, either utilising a cross-sectional (Classen et al.; Cordova et al.; Watson et al.) or longitudinal design (Grassi & Molinari, 1988; Iwamitsu et al., 2002, 2003, 2005a; Iwamitsu et al., 2005b; Stanton et al., 2000). Our results, with a longitudinal design, support the hypothesis that emotional suppression could explain part of the psychological distress level shown under the extreme stress of undergoing cancer treatment. This point constitutes clearly favourable data regarding the predictive validity of the Spanish adaptation of the CECS and leads us to clinical implications of the findings. The successful and early identification of a risk factor—such as emotional suppression—for women's adjustment to breast cancer throughout disease treatment, enables and facilitates the development of potent and cost-effective preventive interventions to promote healthy

survivorship. It is worth mentioning again the value and the usefulness of psychosocial interventions facilitating emotional expression (Fawzy et al., 1990; Spiegel, Bloom & Yalom, 1981; Spiegel, Morrow & Classen, 1999).

In short, our results support the reliability, validity and utility of the Spanish adaptation of the Courtauld Emotional Control Scale (Watson & Greer, 1983) presented in this study. However, the sample was relatively small and homogenous with respect to ethnicity, education, and disease status, requiring replication with a more diverse population, and with men and women who have other types of cancer or who are at a more advance stage. Only through the accumulation of studies carried out on samples of a different nature, language and culture, we will adequately assess the validity of this instrument to evaluate emotional suppression, although the satisfactory character of our findings enables us to feel optimistic about its potential.

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APPENDIX I

C.E.C.

A continuación aparecen algunas reacciones que tiene la gente ante ciertos sentimientos o emociones. Lea las frases de cada lista y ponga un círculo en el número apropiado de la columna, indicando hasta qué punto describe cada una el modo en que Vd. reacciona normalmente.

Por ejemplo, si Vd. cree que cuando se siente enfadado, casi nunca se queda callado, entonces pondría el círculo en el número 1; si esto le ocurre sólo a veces, pondría el círculo en el número 2; si le ocurre a menudo, pondría el círculo en el número 3; y si le ocurre casi siempre, pondría el círculo en el número 4.

Por favor, señale un número en cada reacción. Hágalo rápidamente y señale sólo un número en cada línea.

| Cuando me siento muy enfadado | Casi nunca | A veces | A menudo | Casi siempre |
|--------------------------------------|------------|---------|----------|--------------|
| 1. Me quedo callado | 1 | 2 | 3 | 4 |
| 2. Rehusó discutir o decir nada | 1 | 2 | 3 | 4 |
| 3. Me reprimo | 1 | 2 | 3 | 4 |
| 4. Digo lo que siento | 1 | 2 | 3 | 4 |
| 5. Evito hacer una escena | 1 | 2 | 3 | 4 |
| 6. Controlo mis sentimientos | 1 | 2 | 3 | 4 |
| 7. Oculto mi enfado | 1 | 2 | 3 | 4 |

| Cuando me siento infeliz o desgraciado | Casi nunca | A veces | A menudo | Casi siempre |
|-----------------------------------------------|------------|---------|----------|--------------|
| 8. Rehusó hablar de ello | 1 | 2 | 3 | 4 |
| 9. Oculto mi tristeza | 1 | 2 | 3 | 4 |
| 10. Me hago el fuerte | 1 | 2 | 3 | 4 |
| 11. Me quedo callado | 1 | 2 | 3 | 4 |
| 12. Dejo que los demás vean cómo me siento | 1 | 2 | 3 | 4 |
| 13. Controlo mis sentimientos | 1 | 2 | 3 | 4 |
| 14. Me reprimo | 1 | 2 | 3 | 4 |

| Cuando estoy ansioso o preocupado | Casi nunca | A veces | A menudo | Casi siempre |
|--------------------------------------------|------------|---------|----------|--------------|
| 15. Dejo que los demás vean cómo me siento | 1 | 2 | 3 | 4 |
| 16. Me quedo callado | 1 | 2 | 3 | 4 |
| 17. Rehusó hablar de ello | 1 | 2 | 3 | 4 |
| 18. Les cuento a los demás lo que me pasa | 1 | 2 | 3 | 4 |
| 19. Digo lo que siento | 1 | 2 | 3 | 4 |
| 20. Me reprimo | 1 | 2 | 3 | 4 |
| 21. Controlo mis sentimientos | 1 | 2 | 3 | 4 |

Por favor, compruebe que ha señalado sólo un número en cada línea y que ha contestado a todas las frases.
MUCHAS GRACIAS.