

VALIDATION OF THE ITALIAN VERSION OF THE COPING
INVENTORY FOR STRESSFUL SITUATIONS—SHORT VERSION
AMONG HOSPITAL-BASED NURSES^{1, 2}

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Summary.—The psychometric properties of the Italian version of the Coping Inventory for Stressful Situations—Short Version (CISS-SV–21 items) were tested. In a group of 1,291 hospital-based nurses (77.8% women), four alternative factor models of the CISS-SV were tested using confirmatory factor analysis (CFA). The four models were: M1, the original CISS-SV–21 items three-factor model corresponding to three dimensions (task-oriented, emotion-oriented, and avoidance-oriented coping); M2, the four-factor model corresponding to four dimensions (task-oriented, emotion-oriented, contact a friend-oriented, and treat oneself-oriented) of the CISS-SV (21 items); M3, the three-factor model of the CISS-SV (20 items) made up by the same factor structure of M1 without including Item 1; finally, the four-factor M4 of the CISS-SV (20 items), consisting of the same dimensions of the M2 model without including Item 1. The results of the CFA showed that the M4 factor model was the model that was best able to account for the data (RMSEA=0.06, 90%CI=0.05, –0.06; CFI=0.90). Reliability was supported by alphas ranging from .72 to .82. The CISS-SV has acceptable validity and reliability for measuring the coping strategies of nurses.

Nursing is widely considered to be a stressful profession. Research conducted in several countries suggests that in recent years work stress among nurses escalated due to the increasing use of technology, changes in health care, and the increasing complexity of their work (Rafferty, Clarke, Coles, Ball, James, McKee, *et al.*, 2007). Therefore, nursing work has become increasingly stressful, with rates of psychological distress ex-

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ceeding those of general population norms (Pisanti, van der Doef, Maes, Lazzari, & Bertini, 2011; Rudman, Gustavsson, Ehrenberg, Boström, & Wallin, 2012). Moreover, there has been a growing interest for a greater understanding of relationships between psychosocial job dimensions and psychological distress. These associations may be influenced by several individual variables (Semmer & Meier, 2009). Among them, several authors (Adriaenseens, De Gucht, & Maes, 2012; Kaiseler, Passos, Queirós, & Sousa, 2014) have argued that individuals' coping strategies used to anticipate, manage, tolerate, or minimize the demands of stressful job characteristics may influence the psychological distress they experience.

Lazarus and Folkman (1984) posited that coping includes all "cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person." Furthermore, the mutable features of people's coping behaviors are thought to be dependent on the various characteristics of stressful stimuli. This state, or transactional, approach was criticized by other researchers who proposed a more trait, or inter-individual, approach to the conceptualization and to the assessment of coping (e.g., Endler & Parker, 1990). This line of research was based on a theoretical framework asserting that people employ peculiar styles or strategies of coping behavior when they have to face with upsetting stimuli.

Three basic dimensions for coping were identified by Endler and Parker (1990, 1994): task- (or problem-) oriented, emotion-oriented, and avoidance-oriented coping. The task-oriented coping dimension includes active efforts that attempt to solve, reconceptualize, or minimize the effects of a stressful situation by focusing on the problem, planning the resolutions, developing alternative solutions, choosing an alternative, and acting. The emotion-oriented coping dimension has been conceptualized as including strategies that involve self-preoccupation, fantasy, ruminating, or other conscious activity related to affect regulation. The avoidance-oriented coping includes strategies that concern activities related to some kind of cognitive withdrawal, such as ignoring the situation, deflecting attention to other issues, engaging in distraction activities (e.g., watching television), and seeking out other people (social diversion; e.g., phoning a friend). Several authors have shown that task-oriented coping is more effective, as it is related with low burnout and, in particular, with high personal accomplishment (Verhoeven, Kraaij, Joeke, & Maes, 2003; Shin, Park, Ying, Kim, Noh, & Lee, 2014), whereas emotion-oriented coping and avoidance-oriented coping are related to high burnout. Specifically, all of the burnout subscales (i.e., emotional exhaustion, depersonalization, and reduced personal accomplishment) are correlated positively with emotion-oriented coping (Verhoeven, *et al.*, 2003; Shin, *et al.*, 2014), and with avoidance-oriented coping (Chan & Hui, 1995).

The way that Endler and Parker defined coping strategies led to the Coping Inventory for Stressful Situations (CISS) with 48 items organized in three scales measuring the dimensions described above. Several factorial studies conducted on various samples have found the hypothesized three-factor structure (e.g., Endler & Parker, 1994; Cosway, Endler, Sadler, & Deary, 2000; Brands, Köhler, Stapert, Wade, & van Heugten, 2014). For instance, Endler and Parker (1994) used the original version on Canadian college students and adults. The exploratory factorial analyses (EFA) yielded the hypothesized three-factor solution. Likewise, Cosway, *et al.* (2000), who used the English version of the CISS on Scottish doctors and farmers, found the three-factor solution by the use of EFA. Recently, one study, using confirmatory factor analyses (CFA), has shown in participants with acquired brain injury that the original three-factor solution had an adequate fit to the data (Brands, *et al.*, 2014) using the Dutch adaptation of the CISS.

Some authors (e.g., Cook & Heppner, 1997; McWilliams, Cox, & Enns, 2003) have suggested potential improvements for the avoidance scale. More specifically, dividing avoidance-oriented coping into two inter-correlated subscales (social diversion-oriented coping and distraction-oriented coping) would be more theoretically and psychometrically suitable. Social diversion-oriented coping includes strategies that switch the attention from the problem by seeking the involvement of other people, while distraction-oriented coping involves diverting attention from the problem by turning to other activities. Some CFA studies conducted in many countries (Cook & Heppner, 1997; McWilliams, *et al.*, 2003; Rafnsson, Smari, Windle, Mears, & Endler, 2006; Han, Burns, Weed, Hatchett, & Kurokawa, 2009; Hurt, Thomas, Burn, Hindle, Landau, Samuel, *et al.*, 2011; Boysan, 2012) provided evidence that a four-factor structure (with task- and emotion-oriented coping and avoidance-oriented coping split into two subscales: social diversion-oriented coping and distraction-oriented coping) could account better for the data than the original three-factor structure. The Boysan (2012) study was done on a sample of Turkish undergraduate university students using a Turkish version of the CISS. The Cook and Heppner (1997) and Han, *et al.* (2009) studies were conducted on college students in the USA using the English version. Two studies were carried out on clinical samples using the original English version of the CISS. The Hurt, *et al.* (2011) study was done in England on a sample of patients with Parkinson's disease; McWilliams, *et al.* (2003) used the questionnaire on a group of Canadian outpatients with major depressive disorder. Finally, Rafnsson, *et al.* (2006) tested an Icelandic adaptation of the CISS on a large sample of adolescents.

Taking into account the disadvantages of lengthy questionnaires (i.e., respondents are likely to perceive them as time consuming and tiresome to answer), Endler and Parker (1999) developed a shorter version (21 items) of the CISS (CISS-SV) by choosing the items with the highest factor loadings for each dimension. The studies that investigated the factor structure of the CISS-SV yielded similar equivocal results for the longer version. A CFA was done in the Netherlands (Calsbeek, Rijken, van Berge Henegouwen, & Dekker, 2003) on two separate samples of adolescents and young adults with various chronic digestive disorders and healthy peers, and found evidence for a satisfactory fit and an invariance between the two samples of the three-factor model (task-oriented, emotion-oriented, and avoidance-oriented coping scales). Similarly, Boysan (2012), in a Turkish college sample, found by CFA that the original three-factor solution showed adequate fit to the data. Finally, Rantanen, Mauno, Kinnunen, and Rantanen (2011), in an exploratory study conducted on a sample of Finnish workers, provided evidence for the three-factor solution.

On the other hand, the Cohan, Jang, and Stein (2006) study used separate undergraduate and community-dwelling adult samples adopting the original English version in the USA. The CFA showed that the four-factor model, representing task-oriented, emotion-oriented, and two specific conceptions of avoidance: "contact a friend" and "treat oneself," fitted the data better than the three-factor original structure. Moreover, some authors (Cohan, *et al.*, 2006; Rantanen, *et al.*, 2011) used a 20-item version of the questionnaire because Item 1 ("Take some time off and get away from the situation") tended not to have high enough loadings on any dimension in the hypothesized factor structure models.

In summary, the findings of the psychometric studies conducted on both versions suggest that the four-factor structure fit the data better than the three-factor version, regardless of the kind of sample (clinical, adolescents, adults, etc.) and the adoption of English or non-English versions of the scale. Notwithstanding the potential value of the coping instruments for occupational health psychology researchers, there is a paucity of studies in which the psychometric properties of the CISS-SV has been evaluated on an occupational sample. Given that more work is needed using occupational groups in which coping research is most often conducted, the present study was conducted on a sample of nurses.

The main purpose of this paper was to test the psychometric properties and factor structure of an Italian version of the CISS-SV (21 items) in a group of hospital-based nurses. Purposes were to (a) evaluate the factor structure of different versions of the CISS-SV in a group of hospital-based nurses; (b) examine the reliability of the CISS-SV form that was best able to account for the data, computing Cronbach's *as*; and (c) analyze the

construct validity measuring how, and to what extent, burnout variables could be related with CISS-SV dimensions.

METHOD

Procedure

In the first phase of the survey, the content of the study project and the procedure were discussed and agreed upon with the hospitals' management. Nurses in 11 hospitals across central Italy ($N=2,324$) were approached. Among them, 1,322 agreed to volunteer for the study. The response rate (58%) was similar to those of other studies of this size (Gelsema, van der Doef, Maes, Janssen, Akerboom, & Verhoeven, 2006). The nurses were asked to fill in an anonymous questionnaire and to leave it in a sealed box placed in the nurses' office in each ward. Thirty-one incomplete protocols were excluded (they were missing data on more than 60% of the whole questionnaire). A comparison of the respondents to the non-respondents on sex and age showed that the 1,291 nurses participating in the study were representative of those 2,324 nurses who were asked to participate (with regard to sex: $\chi^2_1 = 1.37, p > .05$; age: $t_{2269} = 1.17, p > .05$). The research was carried out taking into account the guidelines for studies involving human subjects (World Medical Association, 2008). The voluntary nature of the study was emphasized, and the data were stored following the guidelines of the Italian Data Protection Act (2006).

Sample

The great majority of the participants were women (79%) and were nurses holding a permanent position (96%), most of whom worked in a general hospital (43%); 40% worked in a university hospital, and 13% worked in an oncology hospital. The mean age varied from 23 to 62 years ($M=37.5, SD=8.5$), the average length of employment as a nurse varied from 1.0 to 40.3 years ($M=15.4, SD=9.2$). Preliminary analyses did not show any significant difference between demographic variables and CISS-SV items in the 11 hospitals, where the data for the study were gathered.

Measures

The questionnaire was made up of three sections: background variables, coping strategies, and burnout.

Background variables.—Sex, age, type of employment contract, years of nursing experience, and type of clinical placement were assessed.

Coping strategies.—Following the guidelines from the International Test Commission (2005), an Italian version of the CISS-SV (Endler & Parker, 1990, 1999) was prepared, which was back-translated into English by a native speaker. Instructions were to assess the "typical" coping strategies adopted when the people have to deal with occupational stressful ex-

periences instead of a generalized response to all kind of stress. Each item was answered in terms of the extent to which nurses engage in that coping strategy in a stressful situation at work ("how much you engage in these types of activities when you encounter a difficult, stressful, or upsetting situation"). Items were answered on a 5-point rating scale, with anchors 1: Not at all and 5: Very much.

The original questionnaire consisted of three subscales: task-oriented coping, "I try to understand the situation"; emotion-oriented coping, "I blame myself for not knowing what to do"; and avoidance-oriented coping "I buy myself something."

Burnout dimensions.—Burnout was measured by the Italian version (Pisanti, Lombardo, Lucidi, Violani, & Lazzari, 2013) of the 20-item Maslach Burnout Inventory Human Service Survey (MBI-HSS; Maslach, Jackson, & Leiter, 1996), which contains the three subscales: emotional exhaustion (8 items; e.g., "I feel frustrated by my job"), depersonalization (5 items; e.g., "I feel I treat some patients as if they were impersonal objects"), and personal accomplishment (7 items; e.g., "I have accomplished many worthwhile things in this job"). The MBI-HSS items were presented with the standard instructions asking the participants to report the extent of how often they experienced the burnout feelings, with anchors 0: Never to 6: Daily. The reliability estimates were .86 for emotional exhaustion, .72 for depersonalization, and .85 for personal accomplishment.

Data Analysis

Based on studies previously cited, four confirmatory factor models were specified using AMOS software (Analysis of Moment of Structure, Version 7; Byrne, 2010): M1, the original CISS-SV (21 items) three-factor model (Endler & Parker, 1999), corresponding to three dimensions (task-oriented, emotion-oriented, and avoidance-oriented coping); M2, the four-factor model corresponding to four dimensions (task-oriented, emotion-oriented, contact a friend-oriented, and treat oneself-oriented) of the CISS-SV (21 items) identified in studies that investigated the structure of the longer version of the CISS (Cook & Heppner, 1997; Rafnsson, *et al.*, 2006; Han, *et al.*, 2009; Hurt, *et al.*, 2011; Boysan, 2012) using CFA; M3, a three-factor model of the CISS-SV (20 items) based on the exploratory factor analyses of Rantanen, *et al.* (2011) and made up by the same factor structure of the previously described M1 model (without including Item 1); and M4, the four-factor model (CISS-SV, 20 items) based on the CFA by Cohan, *et al.* (2006). The models are presented in Table 1. They were tested using path analysis and standard coefficients, and the latent dimensions were allowed to correlate. No cross-factor loadings were specified. Given the large sample size, a conservative level of .01 was adopted.

TABLE 1
MODEL SPECIFICATIONS FOR THE ALTERNATIVE FACTOR MODELS OF THE CISS-SV

Item	Model M1			Model M2			Model M3				Model M4			
	3 Factors (21 items)			3 Factors (20 items)			4 Factors (21 items)				4 Factors (20 items)			
	TA	EMO	AVO	TA	EMO	AVO	TA	EMO	CaF	TO	TA	EMO	CaF	TO
1			X			NI				X				NI
2	X			X			X				X			
3		X			X			X				X		
4			X		X					X				X
5		X			X			X				X		
6	X			X			X				X			
7			X		X				X				X	
8	X			X			X				X			
9			X		X					X				X
10		X			X			X				X		
11	X			X			X				X			
12		X			X			X				X		
13	X			X			X				X			
14		X			X			X				X		
15			X		X				X				X	
16	X			X			X				X			
17		X			X			X				X		
18			X		X					X				X
19	X			X			X				X			
20		X			X			X				X		
21			X		X				X				X	

Note.—Free parameters are indicated by an X. NI: Not included; TA: Task-oriented coping; EMO: Emotion-oriented coping; AVO: Avoidance-oriented coping; CaF: Contact a friend-oriented coping; TO: Treat oneself-oriented coping.

In order to evaluate the goodness of fit of each estimated model, the indices were chi square, root mean square error of approximation (RMSEA), comparative fit index (CFI), consistent Akaike information criterion (CAIC), and expected cross-validation index (ECVI). The chi square provides a test assessing the null hypothesis of perfect model fit where the residual covariance equals zero. A model with good to excellent fit has an RMSEA value of less than 0.05, and values less than 0.08 indicate adequate fit (Byrne, 2010). CFI cutoff values above 0.90 indicate a reasonable fit to the data. Two main methods are used to compare alternative factorial models. The first consists of testing the difference in the chi-squared value between two models (this is because the difference is itself a chi-squared

distribution) with degrees of freedom equal to the differential in degrees of freedom between the models (Byrne, 2010). However, this requires that the models are nested. The models described above that are nested are M1 versus M2 (both CISS–SV versions with 21 items) and M2 versus M4 (both CISS–SV versions with 20 items).

The second method of testing alternative factorial structures (even if they are not nested) is to analyze the CAIC values, with smaller values representing a greater parsimony and thus a better fit to the data (Byrne, 2010). Finally, the ECVI is another index intended for model comparisons. It indicates “the discrepancy between the fitted covariance matrix in the analyzed sample, and the expected covariance matrix that would be obtained in another sample of equivalent size.” (Byrne, 2010, p. 82). Also, in this case smaller values are indicative of a better fit to the data. In order to optimize the questionnaire, local fit (significance and magnitude of parameter estimates, as well as modification indexes and residual statistics) was also examined for potential *post hoc* modification. The best fitting model was described by using a path diagram reporting standardized coefficients.

The internal consistency was estimated by calculating the Cronbach’s α coefficient for the scale(s) of the model that better fit the data from the CFAs, and by scrutinizing whether item deletion increased the Cronbach’s α of the scale. Finally, to evaluate the construct validity of the CISS–SV dimensions, the latent variable scores of both the factors of the best fitting model of the CISS–SV and the three burnout variables of the MBI–HSS were estimated and a matrix of partial correlations between the two orders of dimensions was computed.

RESULTS

Model Testing

Given that the items did not diverge strongly from univariate normality (skewness was not above 1.4 and the kurtosis did not exceed 1.6; West, Finch, & Curran, 1995), the maximum likelihood estimation (ML) method was used because it performs well even under the small violations of the normality of the data. Table 2 reports the fit indices for the four models tested.

The χ^2 difference between M1 (three-factor solution CISS–SV, 21 items) and M2 (four-factor solution CISS–SV, 21 items) models ($\Delta\chi^2_3 = 151.92$) and between M3 (three-factor solution CISS–SV, 20 items) and M4 (CISS–SV 20 items models; $\Delta\chi^2_3 = 150.83$) were both significant ($p < .001$), showing that the four-factor solutions had a significantly better fit than the three-factor models, despite the adequacy of the RMSEA index. Moreover, in the four-factor models the CAIC and ECVI values decreased. However, only in the M4 model (CISS–SV 20, items) was the CFI criterion met and the

TABLE 2
FIT INDEXES OF THE ALTERNATIVE MODELS

Model	χ^2	<i>df</i>	CFI	RMSEA	90%CI	ECVI	CAIC
M1	1,159.10	186	0.87	0.06	0.06, 0.07	0.97	1,526.44
M2	1,003.61	167	0.88	0.06	0.06, 0.07	0.84	1,354.63
M3	1,007.18	183	0.89	0.06	0.06, 0.06	0.85	1,399.01
M4	852.78	164	0.90	0.06	0.05, 0.06	0.73	1,228.29

Note.— χ^2 : chi square; *df*: degree of freedom; CFI: comparative fit index; RMSEA: root mean square error of approximation; CI: confidence interval; ECVI: expected cross-validation index; CAIC: consistent Akaike information criterion. M1: three correlated factors (21 items) (task-oriented coping, emotion-oriented coping, avoidance-oriented coping); M2: three correlated factors (20 items) (M1 model without Item 1); M3: four correlated factors (21 items) (task-oriented coping, emotion-oriented coping, contact a friend-oriented coping; treat oneself-oriented coping); M4: four correlated factors (20 items) (M3 model without Item 1).

CAIC and ECVI values reduced further than the M2 model. This is because the M4 model does not include Item 1 (“Take some time off and get away from the situation”) which presented a low factor loading in both Models M1 (0.22) and M3 (0.23). Therefore, Model M4 provided the best fit to the data among the alternative models, showing the lowest CAIC, ECVI, and RMSEA values, and it was the only one to provide an acceptable value for the CFI. All the factor loadings were high (above .40), positive, and statistically significant ($p < .001$). The standardized loadings on task-oriented coping ranged between .41 and .68 (median = .56); for emotion-oriented coping, the factor loadings ranged between .50 and .73 (median = .68); for contact a friend-oriented coping, the loadings ranged between .60 and .74 (median = .73); and for treat oneself-oriented coping, the loadings ranged between .63 and .79 (median = .65). The examination of local fit showed that most of the residuals that were significantly different from 0 concerned Items 13 (“Take corrective action immediately”) and 16 (“Think about and learn from mistakes”), and that most modification indexes regarded these two items. However, it was decided to not make any further changes as they were theoretically unexplainable. These results have supported the troublesomeness of Item 1 (“Take some time off and get away from the situation”), which presented low factor loadings both in Models M1 and M3.

Reliability

As shown in Table 3, the Cronbach’s α estimates for the CISS-SV (20 items) dimensions were good (emotion-oriented coping .82) or acceptable: (task-oriented .75, contact a friend-oriented .72; treat oneself-oriented coping .72). As shown in Table 3, deletions of items did not improve the indices and all corrected item-total correlations were above .40.

TABLE 3
INTERNAL CONSISTENCY OF THE CISS-SV (20 ITEMS) TOTAL CORRELATIONS AND LIST OF CRONBACH'S
AS IF DELETED WITHIN EACH SUBSCALE

Abbreviated Item	Cronbach's α	<i>M</i>	<i>SD</i>	Corrected Item-total Correlation	Cronbach's α If Item Deleted
Task-oriented coping	.75	25.2	4.7		
2. Focus on the problem.				.46	.72
6. Consider similar problems.				.51	.71
8. Determine course of action.				.41	.74
11. Work to understand the situation.				.57	.70
13. Take corrective action immediately.				.36	.74
16. Think about and learn from mistakes.				.47	.72
19. Analyze the problem.				.51	.71
Emotion-oriented coping	.82	16.2	5.7		
3. Blame myself for the situation.				.48	.81
5. Worry about being unable to cope.				.62	.79
10. Blame myself for being too emotional.				.63	.78
12. Become very upset.				.59	.79
14. Blame myself for not having the solution.				.64	.78
17. Wish I could change things.				.51	.81
20. Focus on my inadequacies.				.46	.81
Treat oneself-oriented coping	.72	6.6	3.0		
4. Treat myself to a snack.				.51	.66
9. Buy myself something.				.49	.70
18. Go out for a meal.				.63	.53
Contact a friend-oriented coping	.72	5.6	2.7		
7. Visit a friend.				.59	.58
15. Spend time with a special person.				.48	.71
21. Phone a friend.				.57	.61

Construct Validity

The latent variable scores were estimated for both of the coping dimensions of the CISS-SV specified by the model M4 and the three burn-out variables of the MBI-HSS; a matrix of partial correlations was calcu-

lated between the two orders of dimensions. The goodness-of-fit indices were adequate ($\chi^2_{719}=2,212.99$; $p<.001$; RMSEA=0.04, 90%CI=0.04, 0.04; CFI=0.91). All coping dimensions showed significant associations with burnout factors. All correlation coefficients are shown in Table 4. Task-oriented coping presented negative associations with emotional exhaustion and depersonalization and a positive association with personal accomplishment. Emotion-oriented coping had positive associations with emotional exhaustion and depersonalization and a negative association with personal accomplishment. Likewise, avoidance strategies showed positive associations with emotional exhaustion and depersonalization and negative relationships with personal accomplishment.

TABLE 4
CORRELATIONS BETWEEN THE LATENT CONSTRUCTS OF COPING STRATEGY DIMENSIONS AND THE MEASURES OF BURNOUT FOR NURSES (N=1,291)

Coping	Burnout Dimensions		
	Emotion-oriented Coping	Depersonalization	Personal Accomplishment
Task-focused	-.08*	-.15†	.31‡
Emotion-focused	.31‡	.30‡	-.29‡
Treat-oneself oriented	.12†	.17†	-.19†
Contact a friend-oriented	.11*	.13†	-.15†

* $p<.05$. † $p<.01$. ‡ $p<.001$.

DISCUSSION

In this study, the factor structure of four versions of an Italian translation of the CISS-SV was examined in a group of Italian nurses working in hospitals. Examining the goodness-of-fit indices, the four-factor model with 20 items fit the data best. This factor composition was proposed by Cohan, *et al.* (2006), who advised splitting the avoidance-oriented coping strategy into two different but correlated dimensions: contact a friend-oriented and treat oneself-oriented. Furthermore, results supported the troublesomeness of one item included in the original version (Item 1). In line with previous studies, removing this item improved the fit indices and the interpretability of the CISS-SV. In the study of Cohan, *et al.* (2006) and on the basis of highly similar item content, two correlated errors were specified *a priori*: first for Items 4 ("Treat myself to a favorite food or snack") and 18 ("Go out for a snack or meal"), and for Items 7 ("Visit a friend") and 21 ("Phone a friend") in both factor solutions (three- and four-factor structures). In the current study, analysis of the modification indexes for evidence of possible improvements suggested no sound rationale for fur-

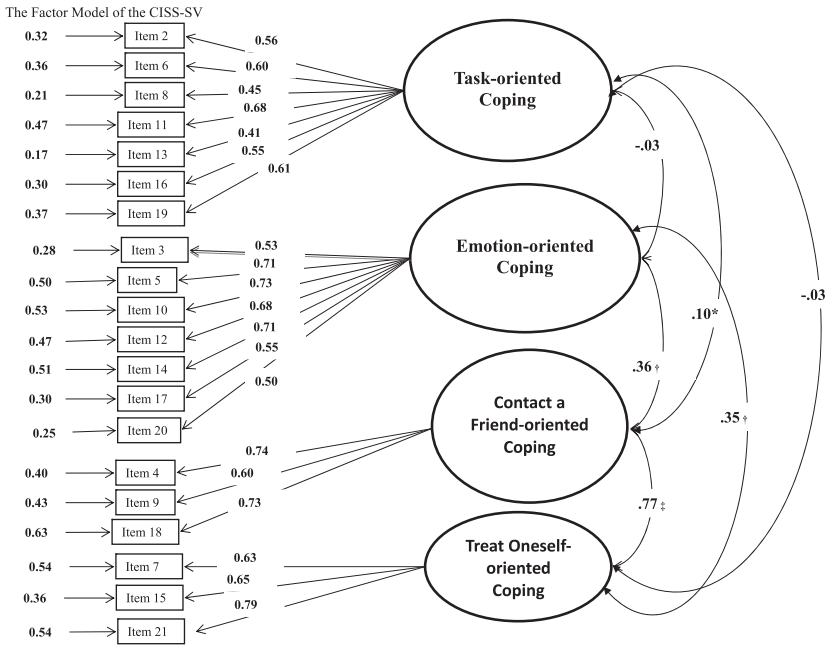


FIG. 1. Results of confirmatory factor analysis of the Italian version of the CISS-SF 20 items. Squares represent the Coping Inventory for Stressful Situations-Short Version items and circles represent latent variables ($\chi^2=852,78$; $df=164$; $CFI=0.90$; $RMSEA=0.06$; $RMSEA\ CI\ 90\%=0.05\ 0.06$; $ECVI=0.73$; $CAIC=1228, 29$. * $p < .05$. † $p < .01$. ‡ $p < .001$).

ther modifying the existing parameterization. However, the authors agree with Cohan, *et al.* (2006) on the need of further development of the two avoidance dimensions. They are not adequately comprehensive to warrant the “distraction” and “social diversion” labels adopted for the original 48-item CISS.

In line with previous studies (e.g., Cohan, *et al.* 2006), there were moderate correlations between emotion-oriented coping and the two avoidance dimensions (contact a friend-oriented coping and treat oneself-oriented coping). These results suggest that, even if it is important to differentiate the two sets of constructs, some emotional activities are inter-related with avoidance strategies. Furthermore, the fact that task-oriented coping showed a weak correlation with contact a friend-oriented coping provides evidence that the adoption of various coping strategies is inter-related. As suggested by Cook and Heppner (1997) this is particularly important for instruments such as the CISS-SV, given that the dimensions of these instruments were drawn on the basis of orthogonal factor rotations.

Regarding the internal consistency of the CISS-SV, only the emotion-oriented coping scale showed an estimate of internal consistency that was adequate, while the other dimensions' internal consistencies were only acceptable. This is consistent with findings reported in previous studies that used English and non-English versions of the scale (Cohan, *et al.*, 2006; Boysan, 2012) and is therefore unlikely to be due to the translation. The reliability of both contact a friend-oriented coping and treat oneself-oriented dimensions could be increased by modifying or by increasing the numbers of items (Cohan, *et al.*, 2006). On this ground, the Spearman-Brown prediction formula suggests that by including two additional items the two scales might achieve an α coefficient of .80. Again, a finding that suggests that avoidance subscales are in need of further refinements.

The correlations between CISS-SV dimensions and burnout factors (emotional exhaustion, depersonalization, and personal accomplishment) were coherent with previous research and supported the construct validity of the CISS-SV scales. Certain types of task-oriented strategies such as planning resolutions, developing alternative solutions, etc., are negatively associated with emotional exhaustion (feelings of being emotionally depleted) and with depersonalization (callous or excessively detached response to various aspects of the job), and are positively associated with personal accomplishment (feelings of personal achievement in one's job). On the other hand, emotion-oriented coping strategies such as wishful thinking and ruminating are related to dysfunctional outcomes such as emotional exhaustion, depersonalization, and low personal accomplishment. Similarly, the use of avoidance coping strategies are correlated with high burnout (high emotional exhaustion, depersonalization, and low personal accomplishment). In terms of effect size, the association between task-oriented coping and personal accomplishment was greater than the relationships between task-oriented coping and emotional exhaustion and depersonalization. Moreover, the relationships between emotion-oriented coping and unfavorable dimensions of burnout were greater than the other dimensions of coping. These results are consistent with the findings of previous studies (e.g., Shin, *et al.*, 2014) and provide further support for the distinction between the four aspects of coping.

The previously mentioned findings show that the factor structure of the CISS-SV is best represented by the Cohan, *et al.* (2006) four-dimension model with 20 items. However, there are at least two limitations to take into account. First, the generalizability of the above results may be limited because the study was based on a selection of hospitals; hence, the findings are not representative for Italy. Second, the test-retest stability of the psychometric characteristics was not examined. The study should be replicated with a different sample of nurses, adopting longitudinal designs for testing the stability of the measures.

Despite these limitations, this research presents a previously unavailable look at the dimensional structure of the Italian version of the CISS-SV. In accordance with Schwarzer and Knoll (2003), the efforts of additional assessment of coping constructs need to precede any attempt at proper intervention. More specifically, for nurses who use more dysfunctional coping strategies (emotion-oriented coping, contact a friend-oriented coping, and treat oneself-oriented coping strategies), stress management workshops such as relaxation techniques and cognitive behavioral techniques (cognitive restructuring, rational emotive therapy, and behavioral rehearsal) should be provided. Furthermore, workshops that mainly focus on skills to deal with emotional arousals deriving from nursing might be helpful. For example, Nezu and D'Zurilla (2001) have developed problem-solving therapy that could be useful to train nurses in recognizing and dealing with specific occupational stressors. On the other hand, for nurses who use more task-oriented strategies, extra trainings such as workshops on time management and assertiveness may lead them to improve their coping strategies. Thus, they can optimize their functional strategies to cope with occupational stressful situations.

In summary, the CISS-SV (20 items) can be applied as a valid and reliable instrument of evaluating the coping strategies among nursing staff and can help health care managers to assess and to design interventions to improve coping strategies among nurses.

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