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Psychometric properties of the Italian version of the Body Image Coping Strategies Inventory

Proprietà psicometriche della versione italiana del Body Image Coping Strategies Inventory

ABSTRACT

The aim of the study was to test the validity of the Italian version of the Body Image Coping Strategies Inventory (BICSI). This scale assesses cognitive and behavioural activities used to manage challenges to body image and comprises three subscales: avoidance, appearance fixing, and positive rational acceptance. Participants were 467 University students (age range: 18-35). We carried out four subsequent analyses: 1) an explorative factor analysis; 2) a confirmatory factor analysis via structural equation modelling; 3) the test of the structural invariance between males and females; and 4) the correlation of the subscales values with other crucial measures to test the convergent validity. Results indicated that the Italian version of the BICSI is an internally consistent and valid tool. The factorial structure is consistent with the original version and is invariant between men and women. This scale shows significant relationships with other measures associated with body image and psychosocial functioning.

Keywords: Body image; Body-image assessment; Coping strategies; Structural equation modeling.

Parole chiave: Immagine corporea; Assessment dell'immagine corporea; Strategie di coping; Modelli di equazioni strutturali.

Psychometric properties of the Italian version of the body image coping strategies inventory

Body image comprises a person's feelings, attitudes, and perceptions about his or her physical appearance and incorporates body size estimation, evaluation of attractiveness, and emotions associated with size and shape (Grogan, 2010). Literature has largely shown that several psychological factors affect body image, such as self-esteem, internalization of societal body ideals, social comparisons, and aspects of gender-related social identity (e.g., Alleva, Martijn, Van Breukelen, Jansen, & Karos, 2015; Fredrickson & Roberts, 1997; Grogan, 2010; Slevic & Tiggemann, 2011). According to Cash and colleagues (Cash, Santos, & Williams, 2005), when such factors or specific contextual elements become a potential threat to a positive body image, individuals employ cognitive and behavioural strategies to cope with these distressing situations. The cognitive coping involves mental strategies to pacify distress through positive self-care, whereas behavioural strategies refers to the attempts aimed at actively changing the stressful, such as active problem solving and seeking emotional support.

According to the widely-accepted model of Folkman & Lazarus (1988), coping strategies concern a transaction between the individual and his or her environment, where internal or external resources can be found in order to reduce the burdens (psychological, emotional, and physical) associated to a stressful event, such as a potential threat to body image. Indeed, coping strategies enable the subject to manage stressful thoughts, feelings and circumstances fostering body image-related stress (Cash, 2002; Cash et al., 2005; Choma, Shove, Busseri, Sadava, Hosker, 2009).

Although several studies have investigated general coping strategies or related concepts among women with eating and body image disturbances, there is a lack of investigation and specific instruments aimed at analysing specific coping strategies in relation to body image. In fact, literature reports many instruments to assess body perception. Among them, the most used are: the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-4, Schaefer et. al., 2015)

designed to assess societal and interpersonal aspects of appearance ideals and validated in Italy, but only in a female sample; the Multidimensional Body-Self Relations Questionnaire (MBSRQ-AE; Brown, Cash & Mikulka, 1990), aimed at assessing body satisfaction; the Body Image Ideals Questionnaire (BIQ; Cash & Szymanski, 1995) which measures body-image evaluation, intended as the congruence/discrepancy between ideal body and self-perception); the Body Image Quality of Life (BIQLI; Cash, Jakatdar, & Williams, 2004), created to investigate both positive and negative consequences of body image related to various aspects of psychosocial functioning and wellbeing. Moreover, some instruments are specifically focused on negative emotions, such as the Situational Inventory of Body-Image Dysphoria (SIBID, Cash, 2002), that measures negative body image emotions in various situational contexts, and the Appearance Schemas Inventory-Revised (ASI-R, Cash et al., 2004), which assesses dysfunctional investment in appearance.

To assess cognitive and behavioural activities used to manage challenges to body image, Cash et al. (2005) developed the Body Image Coping Strategies Inventory (BICSI). At the best of our knowledge, this represents the only instrument measuring coping strategies in relation to body image. Results of a factor analysis of the items on the BICSI revealed three specific body image coping strategies: avoidance, appearance fixing, and positive rational acceptance. Avoidance refers to the extent to which an individual will avert psychological discomfort through self-imposed ignorance of one's undesirable thoughts or feelings. Appearance fixing consists of the attempt to alter image with efforts to disguise, hide, camouflage, or alter the body area that the individual deems undesirable. Positive rational acceptance comprises behavioural and mental strategies to pacify distress through positive self-care (Cash et al., 2005).

Until now the BICSI has been used in different countries, in addition to the United States, such as South-Africa (Dhurup & Nolan, 2014), to collect data from a sample of both male and female university students; Canada (Bailey, Lamarche, & Gammage, 2014; Choma, et al., 2009) where experimental research involved undergraduate and college women; Iran (Kamrani & Farid, 2016),

Australia (Mancuso, 2016), and Turkey (Dogan, Sapmaz, & Totan, 2011) where college and community female samples were recruited. Many of these studies found significant relationships between coping strategies and other constructs, e.g., body shame, social well-being (Choma et al., 2009) and self-esteem (Cash et al., 2005).

Body image and coping with body image stressors represent a key issue for individuals' psychological well-being. As research has shown (Cash et al., 2005; Choma et al., 2009), employing certain body image coping strategies might be associated with particular mental health outcomes. Specifically, appearance fixing coping might be related to disordered eating attitudes, whereas avoidance coping might be more relevant to depression (Choma et al., 2009). On the contrary, relying on positive rational acceptance represents a protective factor for individuals' well-being (Cash et al., 2005). Accordingly, Hughes and Gullone (2011) found that higher positive rational acceptance corresponded to higher levels of adaptive internal and external emotion regulation strategies and lower endorsement of maladaptive modes of regulating affect.

Although research on these issues is particularly recommended (see American Psychological Association, 2008), to date the psychometric properties of the Italian version of the BICSI have not been tested yet. The current paper assesses such properties. Specifically, following Cash et al. (2005), we examined the factor structure of the BICSI, its reliability, and relationship with other crucial measures known to be associated with body image and with well-being and psychosocial functioning.

Method

Participants

The sample of the study included 467 university students (61% females), recruited via students' assistance. The average age of the participants was 22.67 years ($SD = 2.23$, age range: 18-35). Most

of participants (88.8%) were born in the North of Italy, 6.7% in the South of Italy, 2.7% in Insular Italy, and the remaining 1.8% in Central Italy. Body mass indices (BMI=kg/m²) ranged from 15.96 to 45.91 (M=21.20, SD =3.37). Approximately 70.7% of the participants were in the normal range of BMI, 19.8% were underweight, and 9.5% overweight. We split randomly the sample in a training and a validation sample used for exploring and confirming the structure of BICSI. The samples showed no significant differences in gender, age, and BMI composition.

Procedure and materials

Students were asked to participate in a study concerning social issues. Completing the questionnaire took approximately 20 minutes. All participants gave consent to participation after being informed that participation was voluntary and that their responses were anonymous. Participants were assured that they could discontinue the study at any time. No course extra credit was awarded. The study followed the ethical guidelines of the Italian Society of Community Psychology.

The BICSI (Cash et al., 2005) was translated into Italian and a back-translation was done to ensure correctness. The two translators fluently spoke both Italian and English. Few discrepancies emerged and were resolved through a discussion between the translators. The scale included 29 items. Participants responded to each item on a 4-point scale ranging from 0 (definitely not me) to 3 (definitely me).

In addition, the questionnaire included a socio-demographic section and the following measures of body-related attitudes and well-being and psychosocial functioning.

Body shame. The Italian version of the Body shame subscale of the Objectified Body Consciousness Scale (Dakanalis, Zanetti, Riva, Colmegna, Volpato, Madeddu, Clerici, 2015; McKinley & Hyde, 1996) was administered. It is an 8-item scale used to measure feelings of shame when one's body does not conform to cultural standards. Participants responded to a 7-point scale

ranging from “strongly disagree” to “strongly agree” (Cronbach’s $\alpha=.82$) (e.g., “When I can’t control my weight, I feel like something must be wrong with me”).

Body surveillance. The Italian version of the Body surveillance subscale of the Objectified Body Consciousness Scale (Dakanalis et al., 2013; McKinley & Hyde, 1996) was used. It measures the frequency with which participants monitor their physical appearance and consists of eight items on a 7-point scale ranging from “strongly disagree” to “strongly agree” ($\alpha=.83$) (e.g., “I rarely think about how I look” – reversed item).

Life satisfaction. The Italian version of the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Zani & Cicognani, 1999) was used to measure the degree to which participants felt their life was close to their ideal. It consists of five items rated on a 7-point scale ranging from “strongly disagree” to “strongly agree” ($\alpha=.80$) (e.g., “In most ways my life is close to my ideal”).

Positive and negative affect. The Italian version of the Positive and Negative Affect Schedule (Terraciano, McCrae, & Costa, 2003; Watson, Clark, & Tellegen, 1988) was administered. Twenty adjectives (e.g., “proud”; “afraid”) are rated from “not at all” (1) to “extremely” (5) in terms of the degree to which the participant feels that way. Mean scores were computed for the Positive Affect (PA) adjectives ($\alpha=.81$) and the Negative Affect (NA) adjectives ($\alpha=.83$).

Self-esteem. Participants’ self-esteem was assessed through the Italian version (Prezza, Trombaccia, & Armento, 1997) of the Rosenberg’s (1965) Self-Esteem Scale. Items were rated on 4-point scale ranging from “strongly disagree” (1) to “strongly agree” (4) ($\alpha=.86$) (e.g., “I feel that I am a person of worth, at least on an equal plane with others”).

Statistical Analyses

First, we performed an exploratory factor analysis to assess the BICSI’s structure. Then, we performed a confirmatory factor analysis to test the structure emerged and its invariance across gender. Finally, we checked for the convergent validity between the BICSI subscales and other key

variables known to be associated with body image. For the exploratory factor and the convergent validity analyses we used the software SPSS 24, whereas for the confirmatory factor analysis we used the software AMOS 20.

Results

Exploratory factor analysis

After controlling the normality of the distribution of the variables of the BICSI, we performed a maximum likelihood factor analysis with oblimin rotation exploring the BICSI's factor structure. We extracted three factors because of the theoretical structure of the scale. The factor structure after the rotation (see Table 1) was very similar to the original one. There were only five differences. Differently from Cash and colleagues (2005), one item loaded on the Avoidance factor instead of the Positive rational acceptance factor (i.e. "I tell myself that I'm just being irrational about things"). Four items did not load on any factor (i.e. "I consciously do something that might make me feel good about myself as a person", "I try to tune out my thoughts and feelings", "I try to figure out why I am challenged or threatened by the situation", "I fantasize about looking different"). Factor 1 accounted for 16.7% of total variance, Factor 2 for 9.9% and Factor 3 for 8.7%. We calculated the Cronbach's Alpha for the three subscales excluding the items not consistent with the original structure of BICSI. The three subscales showed good internal consistency: Appearance fixing (9 items; $\alpha = .83$), Avoidance (7 items; $\alpha = .68$), Positive rational acceptance (8 items; $\alpha = .70$).

Confirmatory factor analysis

We conducted a confirmatory factor analysis (procedure maximum likelihood; covariance matrix) testing a structural equation model assuming the three factor structure. On the ground of preliminary analyses, we excluded the items not consistent with the structure. We used a partial

disaggregating approach (Bagozzi, 1993; Bagozzi & Edwards, 1998), by examining groups of aggregated rather than single items as factor indicators. This approach is indicated when testing models including a great number of variables that may result in an excessive worsening of the fit. This approach reduces the number of variables in the model and the number of items likely to be eliminated in a confirmatory factor analysis. The 9 items loading on Appearance fixing were randomly combined in four indicators. The 7 items loading on Avoidance were aggregated in three indicators. The 8 items loading on Positive rational acceptance were combined in four indicators.

As recommended (Bollen & Long, 1993; Hu & Bentler, 1998), we tested model fit by using different fit indexes to reduce the impact of their limits. We used χ^2 , CFI (Comparative Fit Index; Bentler, 1990), TLI (Tucker-Lewis Index; Tucker & Lewis, 1973) and RMSEA (Root Mean Square Error of Approximation; Steiger, 1980). For CFI and TLI, values higher than 0.90 are considered satisfactory (Bentler, 1990). As for RMSEA values lower than 0.08 are considered to be satisfactory (Browne, 1990).

The model that we tested proved acceptable according to all fit indexes except χ^2 : $\chi^2(42) = 96.01$, $p < .01$, CFI = .93, TLI = .91, RMSEA = .074 (90% CL = .055 .094). We considered this model to be satisfactory. All estimated parameters were significant. Table 2 reports factor loadings and error variances. Appearance fixing correlated with Avoidance ($r = .32$) and Positive rational acceptance ($r = .16$).

Structural invariance

To test the structural invariance between males and females we followed the procedure used by Reise, Widaman, and Pugh (1993). First, we tested the model simultaneously on both gender groups (baseline model or B), and then we tested a second model (M1) fixing the parameter of the factor loadings to be equal in both groups. The invariance of the loadings allows maintaining the generalizability and the stability of the constructs between groups (McCallum & Tucker, 1991;

Reise et al., 1993). Moreover, the invariance of the relations among factors may strengthen the validity of a set of measures (Bagozzi & Foxall, 1995). We tested another model (M2) testing the invariance of the relation among factors fixing to be equal in males and females the covariance between the latent factors. Every invariance hypothesis is accepted if the χ^2 of the model with more fixed parameters does not differ significantly from the less restricted model (i.e., the difference in the χ^2 values of the two models is not significant for the difference in degrees of freedom). Table 3 reports the tests of invariance of BICSI across gender groups. We accepted the hypothesis of full invariance of loadings and covariances.

Convergent validity

Following Cash et al. (2005), Pearson correlations were calculated between the three BICSI subscales and other key variables known to be associated with body image. Results are reported in Table 4. Both Avoidance and Appearance fixing were positively related to body shame and body surveillance. Concerning well-being and psychosocial functioning, Avoidance was positively associated with negative mood and negatively associated with life satisfaction, positive affect, and self-esteem, whereas Appearance fixing showed a negative correlation with self-esteem. Finally, Avoidance was correlated with higher BMI.

Discussion

The present study was the first step of the Body Image Coping Strategies Inventory validation work in Italy. The results may be the basis for further development of the instrument. The Italian version of BICSI showed an acceptable internal consistency and the relations with other variables indicated it as a valid tool to assess strategies to cope with challenges to body image even in the Italian population. More specifically, the factor structure was consistent with the original version of

the inventory and present findings add evidence for the goodness of the structure of the scale by means of structural equation modelling for confirmatory factor analysis, which showed good fit. However, a caveat deserves attention: five items were not in line with the original version and, thus, were removed.

The invariance across gender of the Italian version of the BICSI was also assessed. Results confirm that the factor structure is the same for both men and women, suggesting a highly stable scale. Finally, regarding convergent validity, the Italian version of the BICSI shows significant relationships with other measures known to be associated with body image and psychosocial functioning. In line with previous literature (Cash et al., 2005; Choma, et al., 2009; Dhurup & Nolan, 2014), avoidant and appearance-fixing strategies seem to be associated with negative attitudes and emotions toward the body, and to lower levels of well-being.

Our study has some limitations that suggest directions for future research. First, as in the original validation of the scale, participants were university students and thus the present findings can not be applied to other populations. Future studies should involve both adults and adolescents, considering how relevant respondents' characteristics may affect coping strategies related to body image challenges. Moreover, our research was restricted to non-clinical subjects, but testing the inventory even in clinical populations could be particularly relevant. Finally, more attention should be paid to specific stressors: as literature on coping processes underlines (Gattino, Rollero, & De Piccoli, 2015) coping strategies are not only related to individuals' characteristics, but they are also context-specific. Finally, the internal consistency of one factor (i.e. Avoidance) is quite low, future research should try to improve the measurement of this dimension.

All this considered, we can conclude that the Italian version of the BICSI can be used to investigate how Italian population cope with body-image threats and challenges. At present, this scale represents the unique assessment of these processes and thus can be particularly relevant for both scholars and clinicians (Cash et al., 2005). Indeed, this instrument should be evaluated in

prevention and treatment programs for Italian individuals with body image and body dysmorphic disorders, as well as in non-clinical populations to increase our knowledge about positive coping strategies.

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Table 1. Explorative factor analysis of BICSI: Factor loadings.

	Appearance fixing	Avoidance	Positive rational acceptance
I think about what I should do to change my looks.	.72	.06	-.08
I make a special effort to hide or “cover up” what’s troublesome about my looks.	.70	.12	-.03
I do something to try to look more attractive.	.69	-.03	.02
I spend extra time trying to fix what I don’t like about my looks.	.68	-.14	-.01
I make a special effort to look my best.	.61	-.13	.04
I think about how I could “cover up” what’s troublesome about my looks.	.59	.22	.03
I compare my appearance to that of physically attractive people.	.55	.16	-.03
I spend more time in front of the mirror.	.43	.01	.05
I seek reassurance about my looks from other people.	.36	.17	.07
I tell myself that I am helpless to do anything about the situation.	.05	.75	-.07

I make no attempt to cope or deal with the situation.	-.11	.60	-.03
I avoid looking at myself in the mirror.	.10	.45	-.08
I withdraw and interact less with others.	.19	.42	-.09
I try to ignore the situation and my feelings.	-.05	.40	.06
I react by overeating.	.12	.38	-.01
I tell myself that I'm just being irrational about things. *	.00	.33	.24
I eat something to help me deal with the situation.	.08	.32	.07
I remind myself of my good qualities.	.07	-.30	.55
I tell myself that I probably look better than I feel that I do.	-.04	.02	.54
I tell myself that I am probably just overreacting to the situation.	-.01	.34	.49
I tell myself that there are more important things than what I look like.	-.23	.14	.48
I react by being especially patient with myself.	-.08	-.16	.47
I tell myself that the situation is not that important.	-.19	.29	.46
I remind myself that I will feel better after awhile.	.07	.13	.40
I tell myself that the situation will pass.	.10	.05	.40

I try to figure out why I am challenged or threatened by the situation. *	.12	.06	.20
I fantasize about looking different. *	.27	.27	.01
I try to tune out my thoughts and feelings. *	.11	-.14	.25
I consciously do something that might make me feel good about myself as a person. *	.15	-.10	.23

* Items not used in the Confirmatory Factor Analysis.

Table 2. Confirmatory factor analysis of BICSI: Factor loadings and Error variances.

	Appearance fixing	Avoidance	Positive rational acceptance	Error variances
AF1	.78			.39
AF2	.79			.38
AF3	.82			.32
AF4	.78			.39
AV1		.80		.36
AV2		.62		.62
AV3		.51		.74
PA1			.64	.59
PA2			.50	.75
PA3			.65	.58
PA4			.54	.70

Table 3. Test of the invariance of the BICSI across gender groups.

Model	χ^2	CFI	TLI	RMSEA	$\Delta\chi^2$
Baseline	139.62 (84)	.92	.90	.053	-
M1 (loadings invariant)	147.73 (92)	.92	.91	.051	M1-B = 8.09 (8) p = .42
M2 (loadings and covariances invariant)	150.88 (94)	.92	.91	.051	M2-M1 = 3.15 (2) p < .21

Table 4. Correlation indexes (Pearson's r) between the BICSI subscales and the other key inventories.

	Appearance fixing	Avoidance	Positive rational acceptance
<i>Body-related variables</i>			
Body surveillance	.70**	.27**	-.03
Body shame	.56**	.40**	-.06
<i>Well-being and psychosocial functioning</i>			
Life satisfaction	-.02	-.28**	.11
Positive affect	-.05	-.23**	.12
Negative affect	.14*	.25**	-.01
Self-esteem	-.19**	-.50**	.09
Body mass index (BMI)	-.07	.13*	-.01

*p<.01 **p<.001

Appendix

Italian version of the BICSI

Nel corso della vita quotidiana, possono capitare delle situazioni che incidono negativamente sulla nostra immagine corporea. Queste situazioni vengono definite "minacce all'immagine corporea" poiché mettono a rischio la nostra capacità di sentirci adeguati, per quanto riguarda l'aspetto fisico. Qui sotto vengono elencate alcune strategie con cui le persone affrontano le minacce all'immagine corporea. Per ciascuna strategia indica quanto è tipica del tuo comportamento (o potrebbe esserlo se ti trovassi in una situazione di minaccia alla tua immagine corporea).

1. Passo parecchio tempo per cercare di risolvere cosa non mi piace del mio aspetto
2. Mi dico che la situazione passerà
3. Faccio uno sforzo speciale per nascondere o "mascherare" ciò che è fastidioso del mio aspetto
4. Mi dico che ci sono cose più importanti del mio aspetto
5. Mi ritiro e interagisco meno con gli altri
6. Confronto il mio aspetto con quello delle persone fisicamente attraenti
7. Reagisco abbuffandomi
8. Mi dico che probabilmente il mio aspetto è migliore di quel che penso
9. Penso a come potrei "mascherare" ciò che è fastidioso del mio aspetto
10. Cerco di ignorare la situazione e i miei sentimenti
11. Penso a cosa dovrei fare per cambiare il mio aspetto
12. Mangio qualcosa per aiutarmi ad affrontare la situazione
13. Mi dico che la situazione non è così importante
14. Faccio uno sforzo speciale per apparire al mio meglio
15. Reagisco essendo particolarmente paziente con me stesso
16. Mi dico che non sono in grado di fare niente per quella situazione
17. Cerco rassicurazione circa il mio aspetto dalle altre persone

18. Non faccio nessun tentativo per affrontare la situazione
19. Mi dico che probabilmente sto solo esagerando la situazione
20. Faccio qualcosa per cercare di sembrare più attraente
21. Evito di guardarmi allo specchio
22. Ricordo a me stesso le mie buone qualità
23. Passo molto tempo davanti allo specchio
24. Ricordo a me stesso che mi sentirò meglio dopo un po'

Scoring:

Appearance fixing = average of items 1, 3, 6, 9, 11, 14, 17, 20, 23.

Avoidance = average of items 5, 7, 10, 12, 16, 18, 21.

Positive rational acceptance = average of items 2, 4, 8, 13, 15, 19, 22, 24.