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The Humor Styles Questionnaire in Italy: Psychometric Properties and Relationships With Psychological Well-Being

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Abstract

This study investigated the psychometric properties of the Humor Styles Questionnaire (HSQ) and the relation between humor and psychological well-being within the context of Italy. A total of 293 (178 females, 115 males) Italian high school and undergraduate university students – whose ages ranged from 14 to 25 years – completed the Italian versions of the HSQ and the Ryff's Psychological Well-Being scales (RPWB). The HSQ scale reliabilities were generally acceptable, and intercorrelations among the scales were rather low; the confirmatory factor analysis supported the four-factor structure. Males reported significantly more use of Aggressive humor than did females; no differences were found between adolescents and young adults in the use of humor styles. Affiliative and Self-enhancing humor styles were positively associated with the six dimensions of the RPWB, whereas Self-defeating humor was negatively correlated with the RPWB scales. SEM analysis showed a significant and positive relationship between humor as measured by the HSQ and psychological well-being as assessed by the RPWB. Overall, the findings supported the theoretical structure and usefulness of the HSQ in an Italian context and the differential role of humor components in the various dimensions of psychological well-being.

Keywords: humor, humor styles, psychological well-being, gender differences, age differences, Italy, confirmatory factor analysis, structural equation modeling

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Introduction

The growing interest in positive human psychological functioning has focused on the potentially beneficial effects of humor on physical and psychosocial health and well-being (e.g., Edwards & Martin, 2010; Kuiper & Harris, 2009; Kuiper & McHale, 2009; Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003). The cross-cultural stability of such relations has been assessed with samples from different countries (e.g., Bilge & Saltuk, 2007; Chen & Martin, 2007; Kazarian & Martin, 2004, 2006; Kuiper, 2010; Kuiper, Kazarian, Sine, & Bassil, 2010; Penzo, Giannetti, Stefanile, & Sirigatti, 2011). Several investigations have been conducted to ascertain the associations between aspects of humor and psychological characteristics – such as dimensions of personality, empathy, resiliency (e.g., Dyck & Holtzman, 2013; Galloway, 2010; Hampes, 2010; Jovanovic, 2011; Kuiper, 2012) – as well as the influence of parental interactions during childhood on development of humor styles (Kazarian, Moghnie, & Martin, 2010),

and the genetic and environmental predictors of the correlations between humor styles and traits of emotional intelligence (Vernon et al., 2009). Notwithstanding the large number of studies conducted and the variety of correlations examined, insights into the role of humor as a component of positive psychology linked to the various aspects of mental and physical health and psychological well-being remains rather weak.

In contemporary psychological research, humor represents a multidimensional construct related to features of the stimulus, to mental processes affected, and to personal responses provided by people; whereas a sense of humor refers to a personal trait that covers the various cognitive, emotional, behavioral, psychophysiological, and social components of humor (Martin, 2000; Martin et al., 2003; Vernon et al., 2009). Several conceptualizations of the construct have evolved over time. In the last century, humor has been considered a strategy for coping with stress or as a defense mechanism (Lefcourt & Martin, 1986), an ability to create humor and to amuse others (Feingold & Mazzella, 1993), an everyday conduct style (Craik, Lampert, & Nelson, 1996), an emotion-related temperament trait (Ruch, Köhler, & van Thriel, 1997), and an aesthetic response (Ruch & Hehl, 1998). Furthermore, humor has not always been viewed positively. Some examples come from early theorists of laughter such as Aristotle and Plato, who considered the sense of humor a result of a sense of personal supremacy derived from ridiculing another's lack of common sense, personal limitations, or unattractiveness.

These different conceptualizations of the construct – referring to all that is considered laughable – have been assessed by researchers using various measurement approaches: humor appreciation ratings such as the Wit and Humor Appreciation Test (WHAT; O'Connell, 1960), behavioral observation techniques such as the Humorous Behavior Q-Sort Deck (HBQD; Craik et al., 1996), and ability tests such as the State-Trait-Cheerfulness-Inventory (STCI; Ruch, Köhler, & van Thriel, 1996, 1997). The survey instruments also included self-report scales such as the Sense of Humor Questionnaire (SHQ; Svebak, 1974a, 1974b), the Coping Humor Scale (CHS; Martin & Lefcourt, 1983), the Situational Humor Response Questionnaire (SHRQ; Martin & Lefcourt, 1984), and the Multidimensional Sense of Humor Scale (MSHS; Thorson & Powell, 1993).

However, the review of the literature has identified several conceptual and psychometric limitations in these instruments. Earlier self-report measures have often considered sense of humor as a one-dimensional construct, often assessed in terms of laughter frequency. In addition, humor was regarded as producing only positive and beneficial effects including laughter responsiveness, humor appreciation and a socially skilled use of humor. These measures did not always consider that the uses of humor could have adverse effects on physical and psychosocial health and well-being (Dozois, Martin, & Bieling, 2009; Kuiper, Grimshaw, Leite, & Kirsh, 2004; Martin, 2004; Martin et al., 2003; Thorson, Powell, Sarmany-Schuller, & Hampes, 1997). Moreover, although the psychometric properties of the self-report measures of a sense of humor are often considered acceptable, several limits have been identified (Lefcourt & Martin, 1986; Martin, 1996, 2007).

Based on these assumptions and previous literature, Martin and colleagues (2003) developed their multidimensional approach by identifying four different styles of humor: two potentially adaptive-positive and beneficial (Affiliative and Self-enhancing) and two possibly maladaptive-negative and detrimental (Aggressive and Self-defeating), composing both the interpersonal and the intrapsychic uses of humor. According to Martin et al. (2003), *Affiliative* humor refers to the tendency to say funny things, to tell jokes, and to engage in spontaneous witty banter to amuse others for the purpose of facilitating relationships and reducing interpersonal tensions. *Self-enhancing* humor involves a generally humorous outlook on life, a tendency to be frequently amused by the incongruities of life, and a primary focus on intrapsychic personal processes. *Aggressive* humor involves the use of sarcasm, teasing,

derision, “put-downs”, or disparaging humor for the purpose of manipulating without regard for potentially negative effects on others. *Self-defeating* humor comprises excessively self-disparaging humor, attempts to amuse others by doing or saying funny things at one’s own expense as a means of gaining approval, allowing oneself to be the “butt” of others’ humor, and laughing along with others when being ridiculed or disparaged.

These four humor styles have been assessed using the Humor Styles Questionnaire (HSQ; Martin et al., 2003). The questionnaire has been developed and validated with several large Canadian samples showing satisfactory psychometric qualities with good levels of reliability and validity and a clear factor structure corresponding to the four humor styles highlighted above. The authors reported internal consistencies (Cronbach’s alpha: .77 for Aggressive, .80 for both Affiliative and Self-defeating, and .81 for Self-enhancing humor). The correlations between the scales appeared quite low, ranging from .12 to .36, signifying their independence. Test-retest reliabilities were between .80 and .85.

The HSQ received cross-cultural validation among European (Saroglou & Scariot, 2002), Chinese (Chen & Martin, 2007), American (Cassaretto & Martínez, 2009; Erickson & Feldstein, 2007), and Arabic samples (Kazarian & Martin, 2004, 2006; Taher, Kazarian, & Martin, 2008), demonstrating good psychometric properties and supporting the four-factor model in understanding the dimensions of a sense of humor. An examination of the item loadings of each dimension revealed that the four factors corresponded closely to the original proposal although there were some exceptions (Kazarian & Martin, 2004, 2006).

Most validations of the HSQ have generally been performed on adults with some exceptions (Chen & Martin, 2007; Erickson & Feldstein, 2007; Kazarian & Martin, 2004; Martin et al., 2003; Pietrantoni & Dionigi, 2006; Saroglou & Scariot, 2002; Taher et al., 2008). As far as age differences are concerned, younger people reported higher scores on Affiliative and Aggressive humor scales than did older participants while non-significant effects were observed for Self-enhancing and Self-defeating styles (Martin et al., 2003). Although studying humor during childhood and adolescence is considered important, to date there are insufficient psychometrically sound instruments specifically developed and standardized for these groups (Erickson & Feldstein, 2007; Fox, Dean, & Lyford, 2013).

The factor structure of the HSQ, investigated within an Italian context (Penzo et al., 2011; Pietrantoni & Dionigi, 2006), confirmed, with some minor differences, four distinct dimensions. A few items did not adequately load on the factor, as hypothesized. However, the reduced sample sizes and the exploratory procedure of the factor analysis did not allow for generalization of the data.

Regarding gender differences, previous and recent investigations show that males and females reported similar uses of both adaptive humor styles; however, they differed in the use of maladaptive styles. Significantly, males reported more frequent use of Aggressive and Self-defeating humor regardless of setting, sociocultural context or studied population (Kazarian & Martin, 2004, 2006; Kazarian et al., 2010; Martin et al., 2003; Pietrantoni & Dionigi, 2006; Saroglou & Scariot, 2002).

In the past, psychological theorists such as Freud (1928), Maslow (1954), and Allport (1961) postulated that certain types of humor such as affiliative or sarcastic humor were significantly associated with psychological health. Lately, several studies have examined links between humor and particular aspects of psychosocial health and well-being. They sought to identify the potentially benign or detrimental uses of humor styles. Particularly, several studies have demonstrated that adaptive humor styles – Affiliative and Self-enhancing humor – are positively related to aspects of psychological well-being: openness to experience, self-esteem, intimacy, relationship satisfaction,

mature and effective coping, positive self-evaluative standards, subjective happiness, and mainly positive moods and emotions. Conversely, maladaptive humor styles – Aggressive and Self-defeating humor – are positively related to psychological distress, neuroticism, anxious attachment, immature and avoidant coping, negative self-evaluative standards, negative emotions, low self-esteem, and interpersonal relationship dissatisfaction (Bilge & Saltuk, 2007; Chen & Martin, 2007; Erickson & Feldstein, 2007; Galloway, 2010; Kazarian & Martin, 2004, 2006; Kazarian et al., 2010; Kuiper et al., 2004; Kuiper & McHale, 2009; Martin, 2007; Martin et al., 2003; Saroglou & Scariot, 2002).

Thus, the development of a multidimensional model and the construction of a questionnaire specifically devoted to assessing psychological well-being, namely the Ryff's Psychological Well-being Scales (RPWB; Ryff, 1989; Ryff & Keyes, 1995), are important. This instrument, previously adapted to the Italian context (Ruini, Ottolini, Rafanelli, Ryff, & Fava, 2003; Sirigatti et al., 2009, 2013), relies on a validated construct; simultaneously, the RPWB is comprehensive, articulate, and useful in offering a positive description of good adjustment. More specifically, in Canadian and Italian samples, Martin et al. (2003) and Penzo et al. (2011) explored the relationships between the HSQ dimensions and the RPWB total score. In both studies, positive relations between adaptive humor styles and overall psychological well-being emerged, whereas only Self-defeating humor – among the maladaptive styles – showed an inverse correlation with the RPWB total score. Considering that in both studies the sample sizes were rather small and that the only well-being indicator used was the total score, it may be advisable to replicate the investigation with a larger number of participants and widen the enquiry to the possible links between the HSQ dimensions and the six indexes of psychological well-being proposed by Ryff (1989), i.e., Self-acceptance, Positive Relations with others, Autonomy, Environmental Mastery, Personal Growth, and Purpose in Life.

Based on the previous review of the literature, the present study sought to explore the cross-cultural stability of the humor dimensions – as proposed by Martin and colleagues (2003) – by investigating the psychometric properties, gender and age differences, and factor structure of the HSQ applied to Italian adolescents and young adults. The second aim of the research was to examine the possible relationships between participants' styles of humor and the dimensions of psychological well-being as conceived by Ryff (1989) and Ryff and Keyes (1995). In particular, we expected that:

- **a.** the HSQ would show satisfactory psychometric qualities with a clear factor structure corresponding to the four humor styles;
- **b.** males would report more use of Aggressive humor than females;
- **c.** younger participants would report higher scores on Affiliative and Aggressive humor scales than older ones;
- **d.** the adaptive and maladaptive humor styles would show different relations with psychological well-being; specifically Affiliative and Self-enhancing humor styles would play an adaptive role, whereas Self-defeating and Aggressive humor styles would be maladaptive.

Method

Participants

The participants in the present cross-sectional study were 293 (178 females, 115 males) Italian high school and undergraduate university students from central Italy (see Table 1). The participants' ages ranged from 14 to 25 years (14-17 years: 53%; 18-25 years: 47%).

Table 1

Participants by Gender and Age

	Adolescents: 14-17 years		Young adults (18-25 years)		Total by gender	
Gender / Age	***n***	***%***	***n***	***%***	***n***	***%***
Males	60	20.5	55	18.8	115	39.2
Females	95	32.4	83	28.3	178	60.8
Total by age	155	52.9	138	47.1	293	100.0

Measures

The participants completed a questionnaire containing the following self-report measures for assessing humor styles and psychological well-being.

Humor styles — The Italian version (Penzo et al., 2011) of the HSQ (Martin et al., 2003) was employed to assess different styles of humor according to a multidimensional approach. The HSQ is a 32-item measure comprising four eight-item correlated dimensions related to different humor styles: adaptive-positive and beneficial – i.e., Affiliative and Self-enhancing – and maladaptive-negative and detrimental – i.e., Aggressive and Self-defeating. Items were rated on a 4-point Likert scale (from 1 = strongly disagree to 4 = strongly agree). High scores for each dimension indicate high levels for that style of humor.

The following are sample items for each style of humor: “Mi piace far ridere le persone [“I enjoy making people laugh”] for Affiliative; “Se mi sento depresso, di solito riesco a tirarmi su con l'umorismo” [“If I am feeling depressed, I can usually cheer myself up with humor”] for Self-enhancing; “Se non mi piace qualcuno, spesso uso l'umorismo o la presa in giro per buttarlo giù di morale” [“If I don’t like someone, I often use humor or teasing to put them down”] for Aggressive; “Spesso esagero nel prendermi in giro quando scherzo o provo ad essere divertente” [“I often go overboard in putting myself down when I am making jokes or trying to be funny”] for Self-defeating.

The psychometric properties and content validity of the HSQ Italian version were satisfactory, essentially confirming the four-factor structure (Dionigi & Libardoni, 2010; Penzo et al., 2011; Pietrantoni & Dionigi, 2006). Cronbach’s alphas across the four humor scales ranged from .58 to .81 indicating acceptable internal consistency: Affiliative = .81, Self-enhancing = .75, Aggressive = .58, and Self-defeating =.72 (Penzo et al., 2011).

Psychological well-being — The Italian version (Ruini et al., 2003) of the 84-item RPWB (Ryff, 1989; Ryff & Keyes, 1995) was used to evaluate psychological well-being by the following six intercorrelated dimensions according to a multidimensional approach: Self-acceptance (SA), Positive Relations with others (PR), Autonomy (AU), Environmental Mastery (EM), Personal Growth (PG), and Purpose in Life (PL). Items were rated on a 4-point Likert scale (from 1 = strongly disagree to 4 = strongly agree). High scores for each dimension indicate high levels of well-being.

The following are sample items for each dimension: “Sono soddisfatto di come sono andate le cose nella mia vita” [“When I look at the story of my life, I am pleased with how things have turned out”], SA; “Spesso mi sento isolato perché ho poche vere amicizie con cui condividere le mie preoccupazioni” [“I often feel lonely because I have few close friends with whom to share my concerns”], PR; “Non ho paura di esprimere le mie opinioni, anche se esse sono contrarie a quelle della maggior parte delle altre persone” [“I am not afraid to voice my opinions,

even when they are in opposition to the opinions of most people"], AU; "Le richieste della vita di tutti i giorni spesso mi abbattono" ["The demands of everyday life often get me down"], EM; "Per me la vita è stata un continuo processo di apprendimento, cambiamento e crescita" ["For me, life has been a continuous process of learning, changing, and growth"], PG; "Non ho una buona percezione di quello che sto cercando di fare nella vita" ["I don't have a good sense of what it is I am trying to accomplish in life"], PL. Test-retest correlations across the six well-being scales ranged from .21 to .82, indicating acceptable stability for at least four scales (Ruini et al., 2003).

Previous studies have also explored the factor structure of the RPWB, highlighting the coexistence of different models that differ in their linear and hierarchical structures and item loadings (e.g., Abbott, Ploubidis, Huppert, Kuh, & Croudace, 2010; Burns & Machin, 2009; Cheng & Chan, 2005; van Dierendonck, Díaz, Rodríguez-Carvajal, Blanco, & Moreno-Jiménez, 2008). Of these, the RPWB six correlated first-order factor model represents one of the models that better fits the data, which was also shown in a previous Italian study (Sirigatti et al., 2009).

Procedure

After a brief presentation of the study's objectives and procedures, consent was directly obtained from participants in legal age and from parents or guardians for underage participants. Research participation was granted only to individuals who had provided informed consent for the processing of personal data. The questionnaires were completed anonymously, and in groups between 15 to 30 individuals, and the staff was present during the data collection. Participation in the study was voluntary and confidentiality was assured; no incentives were offered. Upon completion of the questionnaires, participants received a debriefing that offered further information regarding the study.

Data Analysis

Preliminary data processing was conducted for subsequent analysis. Fifteen out of 309 individuals, who failed to respond to more than one of the 116 items, were excluded from the analyses. The task of dealing with incomplete data was performed using the PRELIS program for the imputation of missing values (Jöreskog & Sörbom, 1996a). With pattern matching imputation, a missing value was replaced with an observed score from another case that had a similar response pattern over a set of variables. For three cases out of four, this replacement was possible, and therefore they were included in the subsequent analyses.

Analyses included descriptive statistics concerning the HSQ and RPWB subscale scores. Uni- and multivariate analyses were performed to test gender and age differences, as well as the relations – hypothesized on the basis of previous studies and conceptualizations – among the four HSQ dimensions and the six RPWB scales, and their total scores.

Evidence of construct validity was sought by conducting a confirmatory factor analysis (CFA) on a matrix of inter-item polychoric correlations on the basis that items may be considered as categorized continuous variables from a normal multivariate distribution (Holgado-Tello, Chacón-Moscoso, Barbero-García, & Vila-Abad, 2010; Jöreskog, 1994). Once the matrix of polychoric correlations had been estimated, the supposition of bivariate normality was tested by calculating the percentage of tests that rejected the null hypothesis of bivariate normality for each pair of correlations. After that, a CFA was performed to test the viability of the hypothesized four-factor structure that had been formulated from theoretical considerations and from results of previous Exploratory Factor Analyses (EFAs) (Martin et al., 2003; Penzo et al., 2011). The goodness of fit of the CFA model was assessed by means of the Weighted Least Squares method, implemented in the LISREL program (Jöreskog & Sörbom, 1996b).

Lastly, Structural Equation Modeling (SEM) – using the Robust Maximum Likelihood estimation procedures – was conducted to test the plausibility of the putative influence of the two adaptive, positive and beneficial humor styles (Affiliative and Self-enhancing) and the two maladaptive, negative and detrimental (Aggressive and Self-defeating) humor styles on the six RPWB dimensions. SEM analysis techniques included the assessment of the measurement and of the structural models (Anderson & Gerbing, 1988; Jöreskog & Sörbom, 1996a, 1996b).

Evaluation of the acceptability of the models was performed using the Satorra-Bentler Scaled Chi-Square (S-B χ^2) and the following fit indices: the S-B χ^2 to degrees-of-freedom ratio (S-B χ^2/df), the Root Mean Square Error of Approximation (RMSEA), the 90 Percent Confidence Interval for RMSEA (RMSEA 90% CI), the Standardized Root Mean Square Residual (SRMR), the Comparative Fit Index (CFI), the Normed Fit Index (NFI), the Non-Normed Fit Index (NNFI), and the Parsimony Goodness-of-Fit Index (PGFI). The criteria recommended by Schermelleh-Engel, Moosbrugger, and Müller (2003) and by Hooper, Coughlan, and Mullen (2008) were utilized to establish goodness-of-fit of the models to the data. Data were analyzed using STATISTICA 12 (Statsoft) and LISREL 8.80 (Jöreskog & Sörbom, 2006).

Results

Scale Descriptive Statistics: Gender and Age Differences

Table 2 presents the mean scores and standard deviations of each of the four scales for males and females as well as for the total sample. In addition, the significance levels of the *t*-test comparing males and females are provided. The discriminant analysis performed to compare the two groups showed a significant difference between males and females on the HSQ dimensions (*Wilk's Lambda* = .94, $F(4,288) = 4.72$, $p < .001$). Such a difference was due to scores on Aggressive humor, in which males scored significantly higher than females ($t(291) = -3.65$, $p < .001$). There were no significant gender differences on the remaining three humor scales although males reported a slightly higher mean score on Self-enhancing and Self-defeating humor and females scored slightly higher average scores on the Affiliative scale.

Table 2

Means and Standard Deviations of HSQ Scores, and Student's T-Test for Gender Difference

	Total sample[a]		Males[b]		Females[c]			
Scale	***M***	***SD***	***M***	***SD***	***M***	***SD***	***t* value**	***p***
Affiliative	27.02	3.85	26.78	4.26	27.17	3.56	.84	n.s.
Self-enhancing	21.18	4.38	21.66	4.33	20.88	4.40	-1.50	n.s.
Aggressive	17.73	3.12	18.54	3.25	17.21	2.92	-3.65	<.001
Self-defeating	17.39	4.36	17.92	4.11	17.04	4.50	-1.70	n.s.

[a]$N = 293$. [b]$n = 115$. [c]$n = 178$.

Table 3 presents the mean scores and standard deviations of each of the four scales for adolescents and young adults; in addition, the significance levels of the *t*-test are provided. The discriminant analysis performed to compare the two groups showed a non-significant difference on the HSQ dimensions (*Wilk's Lambda* = .97, $F(4,288) = 2.07$, $p < .085$).

Table 3

Means and Standard Deviations of HSQ Scores, and Student's T-Test for Age Difference

	Adolescents[a]		Young adults[b]			
Scale	***M***	***SD***	***M***	***SD***	***t* value**	***p***
Affiliative	27.42	3.26	26.57	4.39	1.90	n.s.
Self-enhancing	21.23	4.30	21.08	4.50	.30	n.s.
Aggressive	17.50	2.89	17.99	3.34	-1.32	n.s.
Self-defeating	17.01	4.01	17.81	4.71	-1.57	n.s.

[a]n = 155. [b]n = 138.

Scale Reliability and Intercorrelations

Reliabilities of the four HSQ scales for males, females, adolescents, and young adults separately, as well as for the total sample are presented in Table 4. Adequate internal consistencies were observed for the Self-defeating, Self-enhancing, and Affiliative humor scales, demonstrated by Cronbach's alphas ranging from .70 to .85; the Aggressive humor scale had a lower score for internal consistency (Cronbach's alpha from .50 to .61). The intercorrelations among the four scales were generally rather low, indicating that each scale is relatively distinct from the others, ranging from -.06 to .31 for the total sample, from .03 to .39 for males, from -.01 to .26 for females, from .02 to .29 for adolescents, and from .12 to .34 for young adults. Positive and significant correlations were observed between Affiliative and Self-enhancing (r = .39 for males; r = .26 for females; r = .29 for adolescents; r = .32 for young adults) and between Affiliative and Aggressive humor scales (r = .29 for males; r = .16 for females; r = .34 for young adults). Lastly, the Self-enhancing style showed a positive association with the Aggressive scale for males and young adults (r = .29), and with the Self-defeating scale for males (r = .19).

Table 4

Cronbach's Alphas Coefficient of the HSQ Scales

Sample	Affiliative	Self-enhancing	Aggressive	Self-defeating
Total[a]	.80	.74	.58	.74
Males[b]	.84	.75	.61	.72
Females[c]	.76	.74	.50	.75
Adolescents[d]	.72	.73	.53	.70
Young adults[e]	.85	.76	.61	.77

[a]N = 293. [b]n = 115. [c]n = 178. [d]n = 155. [e]n = 138.

HSQ Confirmatory Factor Analysis

CFA was performed to test the viability of the hypothesized structure that had been formulated from theoretical considerations and results of past studies. The goodness of fit of the confirmatory factor model, with polychoric correlations and asymptotic covariance matrix, was assessed by means of the Weighted Least Squares method, implemented in the LISREL program (Jöreskog & Sörbom, 1996b). Measurement error was assumed to be uncorrelated between items, whereas the four latent variables were allowed to covary.

Model fit was evaluated using multiple indicators, obtaining some conflicting results (see Table 5).

Table 5

CFA of the HSQ: Goodness-of-Fit Indexes

S-B χ^2	*df*	*p*	S-B χ^2/*df*	RMSEA	RMSEA 90% CI	SRMR	CFI	NFI	NNFI	PGFI
697.67	458	<.00001	1.52^{++}	.042^{++}	.036 - .049^{+}	.094^{+}	.96^{+}	.88	.95^{+}	.66^{+}

Note. N = 293.

$^{+}$acceptable fit; $^{++}$good fit (Hooper et al., 2008; Schermelleh-Engel et al., 2003).

The hypothesized structure did not match the observed data when the evaluation of the model was performed using the Satorra-Bentler Scaled Chi-Square (S-B χ^2 = 697.67; p < .00001). However, given that the Chi-square may suggest significant misfit for a model that is slightly misspecified (Marsh, Hau, & Wen, 2004), additional absolute, relative, and parsimony fit indexes were employed to evaluate the model's goodness-of-fit. The observation of the S-B χ^2/*df*, the RMSEA, the RMSEA 90% CI, the SRMR, the CFI, the NNFI, and the PGFI suggested that the model offered a good or an acceptable fit to the data; in contrast, the NFI suggested an unsatisfactory model fit.

Factor loadings of the 32 items on their respective latent variables averaged .55 (in absolute value), ranging from -.68 to .89. Particularly low factor loadings occurred between latent variables: Self-enhancing humor and item 30 ("*Non ho bisogno di stare con gli altri per divertirmi. Riesco di solito a trovare cose su cui ridere anche quando sono solo*" ["I don't need to be with other people to feel amused – I can usually find things to laugh about even when I'm by myself"]); Aggressive humor and item 11 ("*Quando racconto barzellette o dico cose divertenti, di solito non mi interessa molto il modo in cui le altre persone la stanno prendendo"* ["When telling jokes or saying funny things, I am usually not very concerned about how other people are taking it"]) and item 23 ("*Non mi associo mai a ridere di altri, anche se tutti i miei amici lo fanno"* ["I never participate in laughing at others even if all my friends are doing it"]); Self-defeating humor and item 28 ("*Se ho problemi o mi sento infelice, spesso lo nascondo scherzandoci su, in modo che persino i miei amici più stretti non sappiano come mi sento veramente"* ["If I am having problems or feeling unhappy, I often cover it up by joking around so that even my closest friends don't know how I really feel"]).

Relations Between Humor Styles and Psychological Well-Being

Descriptive statistics and correlation coefficients between each of the HSQ humor scales and the RPWB dimension were computed for the total sample as well as for males, females, adolescents, and young adults separately (see Tables 6, 7, 8, 9 and 10). Considering the total sample, results revealed positive and significant associations between both Affiliative and Self-enhancing humor and all psychological well-being dimensions, including the overall score, ranging from r = .23 to r = .55 for Affiliative and from r = .25 to r = .46 for Self-enhancing. A similar trend was observed for males and females although with occasionally different significance levels; the only exception was the relation between Self-enhancing humor and Autonomy (AU) which was non-significant among males. Considering adolescents, results revealed positive and highly significant associations between Self-enhancing humor and all psychological well-being dimensions, but often lower correlations between Affiliative style and some aspects of well-being (see Table 9). With regard to young adults (see Table 10), Affiliative humor was positively correlated with all dimensions of RPWB, while Self-enhancing showed positive links with SA, EM, PL, PG, and Total psychological well-being (T_RPWB).

Table 6

Means, Standard Deviations, and Correlations Between HSQ and RPWB Dimensions for Total Sample (N = 293)

Dimension	SA	PR	AU	EM	PL	PG	T_RPWB
Affiliative	.33***	.55***	.23***	.29***	.33***	.29***	.44***
Self-enhancing	.43***	.25***	.26***	.38***	.38***	.40***	.46***
Aggressive	.07	.01	.08	.06	-.04	.07	.05
Self-defeating	-.27***	-.14*	-.18**	-.24***	-.18**	-.05	-.24***
M	38.86	44.08	40.89	39.28	41.57	43.79	248.46
SD	7.06	6.17	6.44	5.80	6.80	5.54	28.88

Note. SA = Self-acceptance; PR = Positive Relations with others; AU = Autonomy; EM = Environmental Mastery; PL = Purpose in Life; PG = Personal Growth; T_RPWB = Total psychological well-being.
*p < .05. **p < .01. ***p < .001.

Table 7

Means, Standard Deviations, and Correlations Between HSQ and RPWB Dimensions for Males (n = 115)

Dimension	SA	PR	AU	EM	PL	PG	T_RPWB
Affiliative	.43***	.55***	.33***	.39***	.41***	.41***	.56***
Self-enhancing	.31**	.22*	.15	.30**	.34***	.31**	.36***
Aggressive	.11	.17	.08	.18	.09	.09	.16
Self-defeating	-.29**	.04	-.20*	-.19*	-.19*	.04	-.18
M	39.59	42.99	40.38	39.03	41.12	42.86	245.98
SD	6.24	6.42	5.76	5.78	6.80	5.44	27.49

Note. SA = Self-acceptance; PR = Positive Relations with others; AU = Autonomy; EM = Environmental Mastery; PL = Purpose in Life; PG = Personal Growth; T_RPWB = Total psychological well-being.
*p < .05. **p < .01. ***p < .001.

Table 8

Means, Standard Deviations, and Correlations Between HSQ and RPWB Dimensions for Females (n = 178)

Dimension	SA	PR	AU	EM	PL	PG	T_RPWB
Affiliative	.29***	.54***	.16*	.22**	.26***	.19*	.35***
Self-enhancing	.50***	.29***	.32***	.44***	.42***	.48***	.53***
Aggressive	.03	-.05	.10	.00	-.11	.11	.01
Self-defeating	-.27***	-.24**	-.16*	-.26***	-.17*	-.08	-.26***
M	38.39	44.78	41.21	39.44	41.85	44.39	250.06
SD	7.52	5.91	6.84	5.82	6.81	5.54	29.71

Note. SA = Self-acceptance; PR = Positive Relations with others; AU = Autonomy; EM = Environmental Mastery; PL = Purpose in Life; PG = Personal Growth; T_RPWB = Total psychological well-being.
*p < .05. **p < .01. ***p < .001.

When Aggressive humor was considered, no significant association emerged between this style and all dimensions of psychological well-being in either the total sample or when males, females, adolescents, and young adults were considered separately. Instead, negative and occasionally highly significant associations were observed between

Self-defeating humor and several dimensions of psychological well-being. This tendency was present in both the total sample (from r = -.05 to r = -.27), among males (from r = .04 to r = -.29), in females (from r = -.08 to r = -.27), in adolescents (from r = .00 to r = -.18), and among young adults (from r = -.13 to r = -.38).

Table 9

Means, Standard Deviations, and Correlations Between HSQ and RPWB Dimensions for Adolescents (n = 155)

Dimension	SA	PR	AU	EM	PL	PG	T_RPWB
Affiliative	.21**	.50***	.15	.20	.27***	.41***	.37***
Self-enhancing	.51***	.37***	.27***	.48***	.47***	.46***	.56***
Aggressive	.09	-.01	-.02	.02	.00	-.04	.01
Self-defeating	-.12	-.09	-.16	-.18*	-.09	.00	-.15
M	38.82	44.69	40.86	38.99	41.28	43.56	248.21
SD	6.44	5.59	6.54	5.37	6.47	4.94	26.78

Note. SA = Self-acceptance; PR = Positive Relations with others; AU = Autonomy; EM = Environmental Mastery; PL = Purpose in Life; PG = Personal Growth; T_RPWB = Total psychological well-being.
*p < .05. **p < .01. ***p < .001.

Table 10

Means, Standard Deviations, and Correlations Between HSQ and RPWB Dimensions for Young Adults (n = 138)

Dimension	SA	PR	AU	EM	PL	PG	T_RPWB
Affiliative	.41***	.55***	.32***	.37***	.37***	.29***	.50***
Self-enhancing	.37***	.19	.14	.30***	.32***	.27**	.34***
Aggressive	.09	.11	.10	.10	-.04	.01	.08
Self-defeating	-.38***	-.16	-.22**	-.27***	-.26**	-.13	-.31***
M	38.82	43.20	41.10	39.58	41.76	44.38	248.85
SD	7.82	6.85	6.16	6.40	7.24	5.01	30.90

Note. SA = Self-acceptance; PR = Positive Relations with others; AU = Autonomy; EM = Environmental Mastery; PL = Purpose in Life; PG = Personal Growth; T_RPWB = Total psychological well-being.
*p < .05. **p < .01. ***p < .001.

Regression analyses were used to determine the predictive value of each humor scale (see Tables 11 and 12). In the overall sample, they indicated that T_RPWB was positively predicted by both the Affiliative and Self-enhancing styles and negatively predicted by Self-defeating humor (R = .61; R^2_{adj} = .36). Similar tendencies were observed in both males and females, in adolescents, and in young adults, with multiple correlation coefficients of .63 for males, .63 for females, .63 for adolescents, and .61 for young adults, with determination coefficients of .37, .38, .38, and .36 respectively. As Tables 11 and 12 show, the role played by the humor styles in predicting the well-being dimensions varied, to some extent, according to gender and age of participants.

The Lisrel computations were implemented (Jöreskog, Sörbom, Du Toit, & Du Toit, 2001) to verify the hypothesized structural model concerning the relations among HSQ scales and RPWB dimensions – as suggested by the preliminary results of the present study and by the previous conceptualizations and empirical findings. Therefore, a structural model with both the two adaptive, positive and beneficial humor styles and the two maladaptive, negative and detrimental humor styles (represented by the latent variable Humor) and the six dimensions of psychological

well-being (represented by the latent variable Well-being) was developed and then tested to verify the goodness-of-fit to the data.

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Table 11

Beta Weights, Multiple Correlation Coefficients, R^2 and Adjusted R^2 for the Multiple Regression Analyses for Total Sample and Gender

	SA			PR			AU			EM			PL			PG			T_RPWB		
	Tot[a]	M[b]	F[c]	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F
Affiliative	**.19**	**.34**	.14	**.53**	**.55**	**.50**	*.14*	*.31*		*.17*	*.29*		**.24**	**.33**	.17	**.18**	**.36**		**.32**	**.48**	**.21**
Self-enhancing	**.40**	*.24*	**.47**	.11		*.18*	**.22**		**.30**	**.35**	.22	**.42**	**.35**	**.27**	**.40**	**.36**	.19	**.46**	**.39**	*.22*	**.48**
Aggressive				-.11		-.15							*-.14*		*-.19*						
Self-defeating	**-.28**	**-.34**	**-.25**	-.11		*-.17*	**-.19**	*-.23*	*-.16*	**-.25**	*-.25*	**-.24**	**-.18**	**-.25**	-.14				**-.24**	-.23	**-.23**
R	.56	.56	.59	.58	.55	.61	.35	.40	.37	.49	.49	.52	.50	.52	.51	.44	.45	.49	.61	.63	.63
R^2	.31	.32	.34	.33	.31	.38	.13	.16	.12	.24	.21	.27	.25	.24	.26	.20	.17	.24	.37	.37	.39
R^2_{adj}	.30	.29	.33	.32	.28	.36	.11	.13	.12	.23	.21	.25	.24	.24	.24	.18	.17	.23	.36	.37	.38

Note. SA = Self-acceptance; PR = Positive Relations with others; AU = Autonomy; EM = Environmental Mastery; PL = Purpose in Life; PG = Personal Growth; T_RPWB = Total psychological well-being.

[a]N = 293. [b]n = 115. [c]n = 178.

Beta weights: **Bold**: $p < .001$; *Italic*: $p < .01$; Normal: $p < .05$; not significant beta weights are not reported. All R, R^2, and R^2_{adj} are significant ($p < .001$).

Table 12

Beta Weights, Multiple Correlation Coefficients, R^2 and Adjusted R^2 for the Multiple Regression Analyses for Age

	SA		PR		AU		EM		PL		PG		T_RPWB	
	Ado.[a]	Y. Ad.[b]	Ado.	Y. Ad.	Ado.	Y. Ad.	Ado.	Y. Ad.	Ado.	Y. Ad.	Ado.	Y. Ad.	Ado.	Y. Ad.
Affiliative		**.26**	**.44**	**.56**		*.26*		*.25*	.15	**.31**	**.31**	*.24*	**.24**	**.40**
Self-enhancing	**.49**	**.34**	**.26**		*.26*		**.47**	*.25*	**.44**	**.30**	**.38**	*.24*	**.51**	**.27**
Aggressive										-.19				
Self-defeating		**-.38**			*-.17*	-.21	*-.20*	**-.27**		*-.22*			*-.17*	**-.28**
R	.54	.61	.57	.56	.34	.37	.52	.49	.51	.53	.55	.38	.63	.61
R^2	.29	.37	.33	.32	.11	.14	.27	.24	.26	.28	.31	.14	.40	.37
R^2_{adj}	.27	.35	.31	.30	.09	.11	.25	.22	.24	.26	.29	.12	.38	.36

Note. SA = Self-acceptance; PR = Positive Relations with others; AU = Autonomy; EM = Environmental Mastery; PL = Purpose in Life; PG = Personal Growth; T_RPWB = Total psychological well-being.

[a]n = 155. [b]n = 138.

Beta weights: **Bold**: $p < .001$; *Italic*: $p < .01$; Normal: $p < .05$; not significant beta weights are not reported. All R, R^2, and R^2_{adj} are significant ($p < .001$).

The goodness of fit for the model, implying the putative influence of humor on well-being, was assessed using the Robust Maximum Likelihood method, and the goodness of the model fit was evaluated using several indicators. An evaluation performed using the Satorra-Bentler Scaled Chi-Square (S-B χ^2 = 54.04; *df* = 28; *p* < .0022) showed that the hypothesized structure did not match the observed data. However, a different picture emerged when some additional indexes were employed to evaluate the model's goodness-of-fit. The S-B χ^2 to degrees of freedom ratio, the RMSEA, the RMSEA 90% CI, the SRMR, the CFI, the NFI, the NNFI, and the PGFI suggested that the model offered a good or an acceptable fit to the data (see Table 13).

Table 13

Influence of Humor on Well-Being: Goodness-of-Fit Indexes

S-B χ^2	*df*	*p*	S-B χ^2/*df*	RMSEA	RMSEA 90% CI	SRMR	CFI	NFI	NNFI	PGFI
54.04	28	<.0022	1.93^{++}	.056^{+}	.033 -.079^{+}	.043^{++}	.98^{++}	.97^{++}	.98^{++}	.49^{++}

Note. *N* = 293.

$^{+}$acceptable fit; $^{++}$good fit (Hooper et al., 2008; Schermelleh-Engel et al., 2003).

Well-being appeared to be strongly and directly affected by humor (see Figure 1). Affiliative and Aggressive humor styles were correlated as were the Self-enhancing and Self-defeating styles. The latent variable Humor showed direct and positive links with the Affiliative and Self-enhancing styles, whereas with Self-defeating humor, the connection was direct but negative. Conversely, the latent variable Well-being established direct and positive associations with all six dimensions, with path coefficients ranging from .50 to .90.

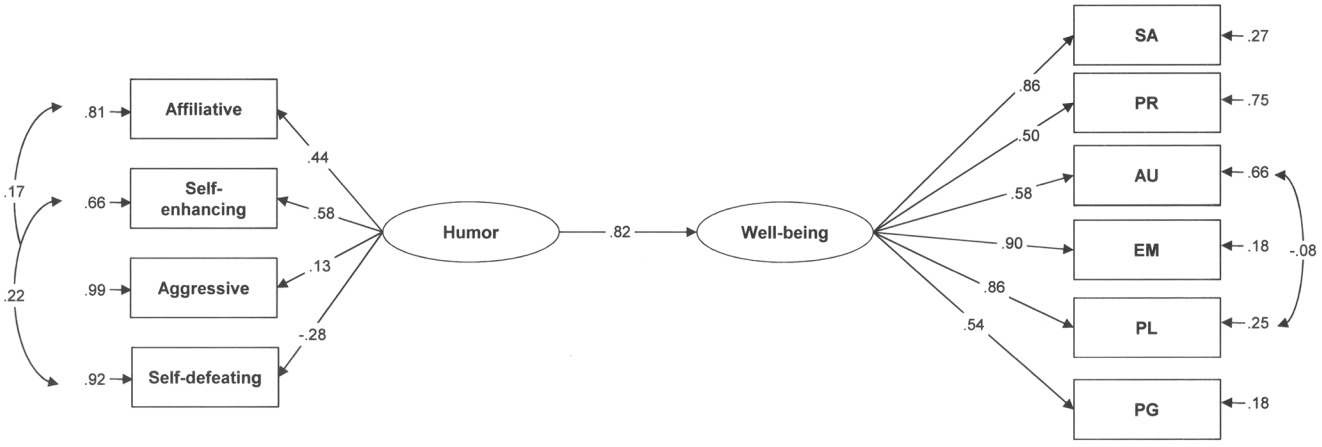

Figure 1. Path Diagram of Humor Influence on Well-Being.

Note. Chi-Square = 54.04; df = 28; P-value = .00221; RMSEA = .056.

Discussion

The present cross-sectional study– realized within an Italian context and among adolescents and young adults – explored the psychometric properties, the factor structure, the gender and age differences of the HSQ. In addition, the relations of both *adaptive* and *maladaptive* humor styles, as proposed by Martin et al. (2003), to the six dimensions of psychological well-being, as theorized by Ryff (1989) and Ryff and Keyes (1995), were investigated.

The HSQ was developed and applied in several European, American, Middle Eastern, and Eastern cultures generally showing satisfactory psychometric qualities with good levels of reliability (Kuiper, 2010; Kuiper et al., 2010; Martin, 2007). In the same vein, this study contributed by establishing that the Italian version of the HSQ showed psychometrically appropriate levels of reliability and validity when measuring humor styles in a sample of Italian adolescents and young adults, providing further evidence that these distinct dimensions of humor, may be found in a wide range of cultures.

In the present research, the internal consistencies were somewhat lower than those reported by Martin et al. (2003) but similar to those reported by Cassaretto and Martínez (2009), Chen and Martin (2007), Erickson and Feldstein (2007), Kazarian and Martin (2004), and Saroglou and Scariot (2002). Even though three of the reliabilities were acceptable, the reliability of the Aggressive humor scale remained somewhat low. This outcome may suggest that the questionnaire manifests some limitations when applied to this Italian context. This could be due to an inappropriate translation of the questionnaire but also may be a result of the different and peculiar forms of expression that humor may have in different socio-cultural contexts. In particular, some items – such as 11, 23, 28, and 30 – are poorly represented by the hypothesized factor model and require a careful review.

The correlations among the four scales tend to be moderate, confirming the findings of previous studies and showing that the four scales are distinct from one another (e.g., Kuiper, 2010; Kuiper et al., 2010; Martin, 2007; Martin et al., 2003). The CFA – referring to the total sample – with good or acceptable goodness-of-fit indexes, supported the four-factor model of humor as measured by the HSQ, consistent with previous research with various samples (e.g., Chen & Martin, 2007; Erickson & Feldstein, 2007; Kazarian & Martin, 2004, 2006; Saroglou & Scariot, 2002; Taher et al., 2008).

Regarding gender differences in humor styles, males reported higher use of Aggressive humor than did females. There were no significant gender differences in Affiliative, Self-enhancing or Self-defeating humor. These data are consistent with Edwards and Martin (2010) and, in part, with Bilge and Saltuk (2007).

As far as age differences are concerned, the hypothesis based on the study by Martin et al. (2003) – according to which younger participants would report higher scores on Affiliative and Aggressive humor scales than older participants – was not confirmed. Perhaps this result was due to the restricted range of ages in the Italian sample (14 – 25 years) which did not allow us to observe the eventual modifications in the use of humor linked to developmental changes.

Findings from the present study clearly suggest that there is an important role of humor in the enhancement of positive life experiences, but the findings also indicate that different humor styles can have different, and even contrary, effects on well-being. Humor is a multidimensional concept: some of its facets may be associated with psychological health and well-being, whereas others, such as the Aggressive styles, appeared unrelated. Replicating the results of previous research, our findings showed that different humor dimensions are not highly correlated with one another and supported the necessity of ascertaining the role that humor styles may differentially play in psychological well-being (e.g., Chen & Martin, 2007; Kuiper et al., 2004; Kuiper & McHale, 2009; Martin et al., 2003).

Affiliative humor was observed to be positively correlated in males, females, and young adults with PR and SA; however, some differences emerged in relation to age. According to Ryff and Keyes' definitions (1995), high scorers often reported enjoying warm, satisfying, trusting relationships with others, being capable of empathy and

intimacy, and showing interest in human relationships. Higher scorers in SA possess a positive attitude towards oneself and past life, accepting both their own good and bad qualities.

Self-enhancing humor appeared to be highly correlated with well-being showing, however, some differences in relation to gender and to age. Female and adolescent high scorers, in addition to presenting an elevated level of SA, often conveyed a feeling of continued development, a sense of realizing their own potential, and a firm belief in personal improvement and in aims and objectives for living. In addition, they expressed a sense of mastery and competence in managing their environment and confidence in their ability to choose or create context appropriate personal needs and values. With regard to males and young adults, associations between Self-enhancing humor and well-being dimensions manifested a similar but weaker trend, particularly evident when the well-being dimensions of SA and PG were considered.

The Aggressive and Self-defeating humor styles – generally both deemed maladaptive, negative and detrimental (Bilge & Saltuk, 2007; Chen & Martin, 2007; Erickson & Feldstein, 2007; Galloway, 2010; Kazarian & Martin, 2004, 2006; Kazarian et al., 2010; Kuiper et al., 2004; Kuiper & McHale, 2009; Martin et al., 2003; Saroglou & Scariot, 2002) – established diverse relationships with psychological well-being. Consistent with some previous research (Chen & Martin, 2007; Dozois et al., 2009; Dyck & Holtzman, 2013; Kazarian & Martin, 2004, 2006; Kuiper et al., 2004; Martin et al., 2003), no significant evidence emerged for a connection between the Aggressive humor style and any dimension of well-being even though the use of this humor style was more frequent in males. Conversely, Self-defeating humor style displayed negative links to several dimensions of well-being. Male high scorers frequently reported dissatisfaction with oneself and past life, worry about certain personal qualities, concern regarding the expectations and evaluations of others, conformity to social pressures, difficulty managing everyday affairs, and lack of control over the external world and a sense of meaning in life. Additionally, female high scorers mentioned the scarcity of close warm and trusting relationships with others, isolation and social frustration. While in adolescents, Self-defeating humor showed a weak negative link to well-being dimension of Environmental Mastery, in young adults this style displayed moderate and negative associations with almost all well-being dimensions. Notably, the observed relationships could be bi-directional with psychological well-being providing opportunities for participants to increase the use of their adaptive humor styles and to limit the manifestations of the negative styles.

The present research adds plausibility to the adaptive role played by Affiliative and Self-enhancing humor styles and to a maladaptive effect generated by Self-defeating humor. Nonetheless, some study limitations deserve mention: the cross-sectional design impeded the identification of the direction between variables; the collection of data, only based on self-report, hampered the validity of measures; the sample, limited to Italian adolescents and young adults, reduced the findings' generalizability. Therefore, longitudinal and daily diary studies have been recommended as well as experimental investigations to better understand how contextual factors interact with humor styles to influence everyday psychological well-being.

The notion that humor may influence psychological well-being immediately poses the question of whether effective humor use can be trained (Edwards & Martin, 2010; Falkenberg, Buchkremer, Bartels, & Wild, 2011; Kuiper, 2012; Martin, 2007; Tugade & Fredrickson, 2007; Vernon et al., 2009). Psycho-educational and therapeutic interventions, focusing on the development of Affiliative and Self-enhancing humor styles, could facilitate the regulation of emotions, improve social relationships and promote psychological well-being. Conversely, significant benefits may also be derived from learning to contain the use of maladaptive humor styles, particularly Self-defeating expression. The implementation of specific training in the effective use of humor may contribute to enriching programs

that inspire psychological and psychotherapeutic well-being (Fava et al., 2005; Ruini et al., 2009; Sirigatti & Giangrasso, 2013), promote adequate coping responses to enhance positive psychological functioning, and enhance psychological and social well-being.

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