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THE ITALIAN VERSION OF THE INTERPERSONAL SEXUAL OBJECTIFICATION SCALE-PERPETRATION VERSION (ISOS-P): ADAPTATION AND PSYCHOMETRIC PROPERTIES OF A TOOL MEASURING SEXUAL OBJECTIFICATION

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The current study assesses the psychometric properties and the adaptation to the Italian context of the Interpersonal Sexual Objectification Scale-Perpetration Version (ISOS-P; Gervais et al., 2018), a tool to measure sexual objectification perpetration among women and men. A pilot study involving a sample of 904 Italian university students and later a study with a national sample of 2198 Italian citizens were conducted. Confirmatory factor analysis was performed to verify the bifactor structure of the scale. Convergent validity and invariance across gender were also tested. The results show good reliability and convergent validity of the scale. Furthermore, a partial metric invariance between males and females was found. The Italian adaptation of the ISOS-P presents appropriate psychometric properties and therefore can be applied to the Italian context. Some limitations and recommendations for future studies are discussed.

Keywords: Sexual objectification; Objectification theory; Adaptation study; Gender discrimination; Gender-based violence.

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Objectification theory, developed by Fredrickson and Roberts (1997), represents a framework for understanding how gender socialization and sexual objectification experiences affect women's well-being and highlights the psychological consequences of sexual objectification. In line with this theory, sexual objectification occurs when a woman's body, parts of her body, or sexual functions are separated from the rest of her person or treated as if they could represent her. This means that the body, or its parts, replaces the whole person, thus depriving the woman of her personality and specificity as a human being (Bartky, 1990; Fredrickson & Roberts, 1997; McKinley & Hyde, 1996).

According to Fredrickson and Roberts (1997), the forms of sexual objectification can be classified along a continuum, ranging from the more subtle body evaluation (e.g., leering and comments made on the body) to the more extreme unwanted explicit sexual advances (e.g., touching, pinching, and unwanted sexual

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assault), expressions of sexual harassment and violence. The whole point of the theory is the idea that being female in a culture that objectifies the female body may negatively impact women's subjective experiences. In particular, Fredrickson and Roberts (1997) stated that there are two main ways through which sexual objectification contributes to the onset of mental health problems for women, one indirect and insidious and one more direct and extreme.

The first starts from the fundamental assumption that women live in a culture in which their bodies are, for whatever reason, evaluated, and always potentially objectified. This promotes a frequent monitoring of body, leaving women with excess of shame and anxiety and such experiences may, for some women, contribute to psychological disorders. In particular, not knowing exactly when and how your body will be looked at and evaluated can create, in women, anxiety about potential exposure. The appearance anxiety of women often manifests itself in the constant preoccupations of controlling and regulating one's appearance (Calogero et al., 2020). Consequences of this could therefore be shame, resulting from a fusion of negative self-evaluation with the potential for social exposure (Fredrickson & Roberts, 1997).

The second route is more direct and extreme: real sexual victimization. With these forms of victimization, a woman's body is literally treated as a simple tool or thing. So again, the mental health risks are very high.

The phenomenon of sexual objectification is closely linked to sexist ideology (Riemer et al., 2014), traditionally defined as "a prejudiced attitude or discriminatory behavior based on the presumed inferiority or difference of women as a group" (Cameron, 1977, p. 340). Ambivalent sexism (Glick & Fiske, 1996, 1997, 2001) affirms that sexism does not exclusively include implicit or explicit hostility toward women but is characterized by ambivalence, that is, the coexistence of positive and negative affects. In particular, hostile sexism seeks to justify traditional gender roles, male power, and the exploitation of women as sexual objects by men.

Treating women as sexual objects to be examined and evaluated based on their physical appearance is one of the most widespread forms of gender discrimination (Fredrickson & Roberts, 1997), and an example of gender inequality is the interaction between men and women, in an interpersonal context, based on treating the woman as a sexual object, even going so far as to consider her body as the possession of the observer (Calogero, 2013). Sexual objectification, therefore, represents a daily, pervasive experience, to which it is impossible to resist (Volpato, 2014). This is why various studies have provided tools to conceptualize and measure this phenomenon.

Specifically, Curran (2004) developed a measure meant to quantify and define the idea of objectification, in particular, an individual difference measure of men's objectification of women. Moreover, Strelan and Hargreaves (2005) provided empirical evidence linking self-objectification to other-objectification, by using Noll and Fredrickson's (1998) Self-Objectification Questionnaire, demonstrating that higher self-objectification among women and men was associated with higher levels of other-objectification of both women and men.

To better understand the effects of self-objectification, Ramsey and Hoyt (2015) used the adaptation of the surveillance subscale of the Objectified Body Consciousness Scale (OBCS) that measures self-objectification (McKinley & Hyde, 1996) for evaluating the sexual objectification of a romantic partner. To emphasize the importance of experiences of being sexually objectified by others, Kozee and colleagues (2007) developed the Interpersonal Sexual Objectification Scale (ISOS), a tool measuring women's reported experiences of interpersonal sexual objectification. However, few studies have considered the perpetuation of sexual objectification. Among these, the Objectification Perpetration Scale (OPS; Riemer et al., 2022) assesses not only men's perpetration of objectifying behaviors directed toward women but also their objectifying cognitions and beliefs.

Starting from the original ISOS, Gervais and colleagues (2018) created a tool, the Interpersonal Sexual Objectification Scale-Perpetration Version (ISOS-P), to evaluate the perpetration rather than the victimization of sexual objectification. This scale has three correlated factors — body gazes, body comments, and unwanted explicit sexual advances — which allowed a measure of the continuum of sexual objectification according to objectification theory (Fredrickson & Roberts, 1997).

Objectifying body gazes were defined as visually examining people's bodies or fixed and sexualized body parts (Fredrickson & Roberts, 1997) and are assumed to be a key feature of sexual objectification. For this reason, Hollet and colleagues (2022) validated a self-report scale to measure pervasive body gaze behavior and body gaze provocation behavior in heterosexual women and men. Objectifying body comments include catcalls, evaluative commentary, sexual innuendos, whistles, and sexist remarks (Gervais et al., 2018; Saunders et al., 2017); finally, on the extreme end of the continuum, objectification manifests as unwanted explicit sexual advances, unwelcome touching, sexual harassment, and sexually degrading gestures (Kozee et al., 2007).

The significance of this tool lies in the search for an overall understanding of the phenomenon of sexual objectification, and its negative consequences. This implies taking into account not only the behavior suffered, and the victims' point of view, but also and especially the point of view of the person who perpetuates sexually objectifying behaviors.

As Gervais and colleagues (2018) pointed out, it is still unclear whether the behaviors reported by the recipients correspond to the behaviors reported by the people who perpetrate objectification, who are more likely to engage in these objective behaviors. Currently, to our best knowledge, this is one of the few tools measuring the perpetration of objectifying behaviors and, for this reason, the research goal was to adapt and validate the ISOS-P to the Italian context, testing its reliability and its psychometric validity. We aimed to verify the factorial structure and reliability of the Italian version of the scale. Moreover, the study aimed to verify the convergent validity of the ISOS-P, and its factorial invariance across males and females. The study was part of a larger project, which examined the relationship between ambivalent sexism, sexual objectification, and nonconsensual sharing of sexting images (Agueli et al., 2023).

Method

Participants and Procedure

Two studies were carried out to pursue these goals, namely a pilot study involving university students and a national survey involving Italian citizens. The procedure was approved by the university ethics committee (CERP n. 22/2021).

Pilot study. The pilot study involved a sample of 904 Italian university students, with a mean age of 24.5 (*SD* = 3.8) and homogeneous in terms of gender: with 51% females and 49% males. The students were recruited using the snowball sampling technique. In particular, we asked a group of 50 student-trainees, enrolled in the master's degree course in Psychology, to fill in an online questionnaire. Subsequently, the students were asked to recruit other university students, sending the questionnaire to potential participants in their network of contacts. Before proceeding to the recruitment phase, the students involved were trained in Computer-Assisted Survey Information Collection (CASIC; Couper, 2000).

National study. Subsequently, after about a month, the same 50 trainee students were asked to recruit new participants among citizens of different Italian regions, starting from their network of personal contacts (such as relatives or friends who lived in other areas of the country). At the same time, the questionnaire was spread

online (via social networks, e.g., Instagram and Facebook) to recruit Italian citizens. This method, which is based on the snowball sampling technique, led to the collection of 2500 total responses to an online questionnaire. These responses were then screened based on some criteria: respondents who had not given their consent to process personal data, who were not at least 18 years old, or/and who had not completed at least 80% of the questionnaire, were eliminated from the search. At the end of this procedure, the national sample was made up of 2198 Italian citizens, with a mean age of 32.6 (*SD* = 3.7), fairly homogeneous in gender (55% females and 45% males) and territorial area (51% from the South/Islands and 49% from the North/Center). All sociodemographic characteristics of the pilot sample and the national sample are shown in Table 1.

TABLE 1
Demographic characteristics of the pilot sample and of the national sample

	Pilot sample (university students) *N* = 904	National sample (Italian citizens) *N* = 2198
Age	*M* = 24.5 (*SD* = 3.8)	*M* = 32.6 (*SD* = 3.7)
	N (%)	*N* (%)
Gender		
Female	461 (51%)	1209 (55%)
Male	443 (49%)	989 (45%)
Sexual orientation		
Heterosexual	814 (90%)	1824 (83%)
Homosexual	27 (3%)	132 (6%)
Bisexual	54 (6%)	198 (9%)
Other orientation	9 (1%)	44 (2%)
Marital status		
Single	434 (48%)	1165 (53%)
With partner	298 (33%)	879 (40%)
Married	163 (18%)	132 (6%)
Separated/Divorced	9 (1%)	11 (0.5%)
Widower	0 (0%)	11 (0.5%)
Employment status		
Student	904 (100%)	1055 (48%)
Employee	n.a.	813 (37%)
Self-employed	n.a.	110 (5%)
Unemployed	n.a.	220 (10%)
Territorial area		
South/Islands	768 (85%)	1121 (51%)
North/Center	136 (15%)	1077 (49%)

Note. n.a. = not applicable.

Materials

An online questionnaire was developed and disseminated through the digital platform SurveyMonkey. The pilot study was composed of a sociodemographic section and of the Italian version of the Interpersonal Sexual Objectification Scale-Perpetration Version (ISOS-P; Gervais et al., 2018) for measuring sexual objectification. In the national study, to evaluate the convergent validity, we also added: the Italian version of the

Ambivalent Sexism Inventory-short form (ASI; Glick & Fiske, 1996; Rollero et al., 2014), for the measurement of sexism, and the Italian version of the Balanced Inventory of Desirable Responding-short form (BIDR 6; Paulhus, 1988; see also Bobbio & Manganelli, 2011), for the control of social desirability.

Interpersonal Sexual Objectification Scale-Perpetration Version (ISOS-P). The Italian version of the ISOS-P was created using a translation and back-translation procedure (Brislin, 1970). Two independent researchers translated the scale. The first translated it from English into Italian and then the second from Italian into English. In the end, the final English version was compared to the original English version. The comparison showed that the translation process did not change the meaning of the items that make up the ISOS-P.

As in the original version (Gervais et al., 2018), the Italian version of the ISOS-P included 15 items, which evaluate the frequency of the implementation of objectifying behaviors concerning a general factor, that is, "sexual objectification" (ISOS-P) and three specific dimensions: five items for "body comments" (BC), six items for "body gazes" (BG), and four items for "unwanted explicit sexual advances" (UESA). But unlike the original scale, which is gender-neutral with respect to the gender of the target, we decided to assess the sexual objectification both toward females and forward males to be able to differentiate them, if necessary.

We invited participants to keep in mind an image of both a female and a male person before responding to the items. In an equality dimension, we wanted to ascertain whether sexual objectification is also a male phenomenon, and therefore a construct that represents gender inequality.

Then each item was presented to the participants twice: once with a female target and once with a male target. In this way, the scale included a total of 30 items, for the evaluation of two general factors, namely "sexual objectification toward females" (ISOS-P-F) and "sexual objectification toward males" (ISOS-P-M), as well as six specific factors: "body comments toward females" (BC-F), "body gazes toward females" (BG-F), "unwanted explicit sexual advances toward females" (UESA-F), "body comments toward males" (BC-M) "body gazes toward males" (BG-M), and "unwanted explicit sexual advances toward males" (UESA-M). Participants had to respond using a 5-point Likert scale ranging from 1 (*never*) to 5 (*almost always*) for each item. The Italian version of the ISOS-P is available from the authors upon request.

Balanced Inventory of Desirable Responding-short form (BIDR 6). The Italian short form of the Balanced Inventory of Desirable Responding (BIDR 6; Paulhus, 1988; see also Bobbio & Manganelli, 2011) was used to assess social desirability. This scale version consists of 16 items evaluating two dimensions: eight items for "self-deceptive enhancement" (SDE) and eight items for "impression management" (IM). For each item, participants had to respond using a 6-point Likert scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*).

Ambivalent Sexism Inventory-short form (ASI). This scale was developed by Glick and Fiske (1996) to measure two types of sexism, namely hostile and benevolent sexism. The Italian short form of the scale (Rollero et al., 2014) includes 12 items, six for the assessment of hostile sexism and six for benevolent sexism. For each item, respondents must report their degree of agreement with the proposed statements, using a 6-point Likert scale ranging from 0 (*strongly disagree*) to 5 (*strongly agree*).

Data Analysis

The collected data were analyzed within the framework of the structural equations model (SEM; Bentler & Yuan, 1999), through the Mplus 8.0 software. Maximum likelihood (ML) was used as the main estimator and missing values were treated by listwise deletion. For goodness-of-fit, we referred to: the root-mean-square error of approximation (RMSEA), the Bentler's comparative fit index (CFI), the Tucker-Lewis index (TLI), and the standardized root-mean-square residual (SRMR). According to Hu and Bentler (1999),

a model has a good fit if RMSEA ≤ .06, CFI and TLI ≥ .95, and SRMR ≤ .08. Furthermore, we observed the Akaike information criterion (AIC) and the Bayesian information criterion (BIC) indices, to choose the best solution among the different models tested.

Confirmatory factor analysis (CFA) was used and standardized factor loading (λ) and interitem reliability values (R^2) were observed to evaluate the relationships between observed variables and latent factors. The Cronbach's alpha coefficient (α) and the Omega coefficient (ω) were used to evaluate the reliability of latent factors, both general and specific: α and ω values greater than .70 indicate good reliability of a measure (Bland & Altman, 1997; Fornell & Larcker, 1981).

Furthermore, given the bifactorial nature of the ISOS-P, the Omega hierarchical coefficients (ω_H), explained common variance (ECV) indices, and percent of uncontaminated correlations (PUC) index were also calculated. On one hand, the Omega hierarchical of the general factor "reflect the percentage of systematic variance in unit-weighted (raw) total scores that can be attributed to the individual differences on the general factor" (Reise et al., 2013, p. 224). On the other hand, the Omega hierarchical of the specific factors evaluates the proportion of variance attributable to a single specific factor, after taking into account the general factor. Omega hierarchical values higher than .50 indicate a good level of reliability (Reise et al., 2013). Finally, the ECV represents the share of common variance that is explained by the single factor, while the PUC represents the share of common variance, which is indicative only of the variance from the general dimension (Rodriguez et al., 2016).

As for convergent validity, we observed the significance, the sign, and the value of Pearson's *r* coefficients relating to the correlation between the general factors measured by the ISOS-P and the two dimensions of sexism (hostile sexism and benevolent sexism) measured by the ASI scale. Furthermore, we also checked the social desirability, observing the correlations of the general factors ISOS-P-F and ISOS-P-M with the two dimensions (self-deceptive enhancement and impression management) measured by the BIDR 6 scale.

Finally, to assess measurement invariance across gender, multigroup confirmatory factor analysis was applied. It tested two levels of invariance between females and males: configural invariance, to verify that the same observed variables indicate the latent constructs hold across groups, and metric invariance, to verify that the psychological meaning of the variables is the same across groups (Abrams et al., 2013; Vandenberg & Lance, 2000). To compare the configural and metric models, the $\Delta\chi^2$ values were observed.

Results

Confirmatory Factor Analysis (CFA)

Following the original scale validation article (Gervais et al., 2018), we tested a first model, with a 3-factor bifactorial structure for the ISOS-P, in which the observed variables simultaneously loaded on three specific factors (BC, BG, and UESA) and on the general factor (ISOS-P). Given the duplication of each item explained above, in our model, we replicated this structure for sexual objectification toward both females (ISOS-P-F) and males (ISOS-P-M). To obtain information about the psychometric validity of both versions of the scale (female and male), we tested this basic model twice, obtaining: Model A1 (for ISOS-P-F) and Model A2 (for ISOS-P-M).

In both samples, Model A1 showed a satisfactory fit, with indices that fell within the established norms: $\chi^2(71) = 266.69$, $p < .01$; RMSEA = .06; CFI = .97; TLI = .96; SRMR = .05 (pilot sample); and $\chi^2(71) = 645.39$, $p < .01$; RMSEA = .06; CFI = .97; TLI = .95; SRMR = .05 (national sample). As for Model A2, it showed a good fit in the pilot study, $\chi^2(71) = 857.33$, $p < .01$; RMSEA = .06; CFI = .96; TLI = .94; SRMR

= .05, and an acceptable fit in the national study, $\chi^2(71) = 857.33$, $p < .01$; RMSEA = .07; CFI = .96; TLI = .95; SRMR = .06. Moreover, as reported in Table 2, Model A1 showed significant factor loadings and adequate interitem reliability values (R^2) for all the items.

TABLE 2
Factor loadings and interitem reliability (R^2) of Model A and Model B in the pilot and national studies

Model A1 (basic 3-factor bifactorial model for sexual objectification toward females — ISOS-P-F)										
	Pilot study (N = 904)					National study (N = 2198)				
	General factor	Specific factors				General factor	Specific factors			
	ISOS-P-F	BC-F	BG-F	UESA-F		ISOS-P-F	BC-F	BG-F	UESA-F	
Item	Factor loadings	Factor loadings	Factor loadings	Factor loadings	R^2	Factor loadings	Factor loadings	Factor loadings	Factor loadings	R^2
BC1-F	.47	–.21			.22	.57	–.45			.53
BC2-F	.61	.43			.58	.64	.20			.41
BC3-F	.51	–.32			.26	.67	–.39			.59
BC4-F	.66	.67			.89	.73	.10			.54
BC5-F	.77	.29			.68	.84	.33			.81
BG1-F	.75		.23		.61	.60		.45		.57
BG2-F	.53		.45		.48	.42		.52		.45
BG3-F	.66		.58		.77	.53		.66		.71
BG4-F	.62		.27		.45	.56		.43		.50
BG5-F	.74		.41		.71	.62		.58		.72
BG6-F	.76		.13		.57	.69		.23		.53
UESA1-F	.40			.60	.52	.49			.63	.64
UESA2-F	.24			.47	.28	.32			.64	.51
UESA3-F	.37			.74	.69	.43			.69	.66
UESA4-F	.41			.40	.32	.45			.57	.53
Model A2 (basic 3-factor bifactorial model for sexual objectification toward males — ISOS-P-M)										
	Pilot study (N = 904)					National study (N = 2198)				
	General factor	Specific factors				General factor	Specific factors			
	ISOS-P-M	BC-M	BG-M	UESA-M		ISOS-P-M	BC-M	BG-M	UESA-M	
Item	Factor loadings	Factor loadings	Factor loadings	Factor loadings	R^2	Factor loadings	Factor loadings	Factor loadings	Factor loadings	R^2
BC1-M	.55	–.48			.54	.72	–.35			.64
BC2-M	.65	.13			.45	.68	.11			.48
BC3-M	.58	–.42			.51	.81	–.45			.86
BC4-M	.69	.15			.50	.76	.18			.60
BC5-M	.79	.35			.75	.73	.42			.71
BG1-M	.49		.36		.37	.57		.48		.56
BG2-M	.41		.59		.51	.38		.58		.48
BG3-M	.53		.71		.79	.50		.71		.75

(table 2 continues)

Table 2 (continued)

Model A2 (basic 3-factor bifactorial model for sexual objectification toward males — ISOS-P-M)

BG4-M	.46	.47		.43	.51	.53		.54
BG5-M	.56	.60		.67	.55	.66		.74
BG6-M	.55	.31		.40	.65	.42		.59
UESA1-M	.43		.54	.47	.60		.57	.69
UESA2-M	.38		.62	.53	.61		.50	.62
UESA3-M	.42		.52	.44	.59		.62	.73
UESA4-M	.41		.36	.29	.59		.53	.62

Model B1 (adapted 3-factor bifactorial model for sexual objectification toward females — ISOS-P-F)

	Pilot study (N = 904)					National study (N = 2198)				
	General factor	Specific factors				General factor	Specific factors			
	ISOS-P-F	BC-F	BG-F	UESA-F		ISOS-P-F	BC-F	BG-F	UESA-F	
Item	Factor loadings	Factor loadings	Factor loadings	Factor loadings	R^2	Factor loadings	Factor loadings	Factor loadings	Factor loadings	R^2
BC1-F	.47	/			.22	.51	/			.26
BC2-F	.61	.42			.56	.61	.35			.50
BC3-F	.52	/			.27	.59	/			.34
BC4-F	.67	.66			.89	.69	.60			.84
BC5-F	.77	.29			.68	.78	.16			.63
BG1-F	.74		.24		.61	.67		.37		.57
BG2-F	.52		.46		.48	.45		.56		.51
BG3-F	.65		.59		.77	.56		.68		.78
BG4-F	.62		.27		.45	.60		.36		.49
BG5-F	.73		.42		.71	.68		.48		.69
BG6-F	.75		.28		.57	.75		.13		.58
UESA1-F	.40			.60	.52	.48			.64	.64
UESA2-F	.25			.47	.28	.29			.65	.51
UESA3-F	.37			.74	.69	.42			.70	.67
UESA4-F	.41			.40	.33	.43			.56	.49

Model B2 (adapted 3-factor bifactorial model for sexual objectification toward males — ISOS-P-M)

	Pilot study (N = 904)					National study (N = 2198)				
	General factor	Specific factors				General factor	Specific factors			
	ISOS-P-M	BC-M	BG-M	UESA-M		ISOS-P-M	BC-M	BG-M	UESA-M	
Item	Factor loadings	Factor loadings	Factor loadings	Factor loadings	R^2	Factor loadings	Factor loadings	Factor loadings	Factor loadings	R^2
BC1-M	.46	/			.21	.69	/			.48
BC2-M	.64	.45			.60	.66	.41			.60
BC3-M	.50	/			.25	.77	/			.59
BC4-M	.66	.54			.72	.71	.58			.85
BC5-M	.71	.24			.57	.62	.31			.48

(table 2 continues)

Table 2 (continued)

Model B2 (adapted 3-factor bifactorial model for sexual objectification toward males — ISOS-P-M)							
BG1-M	.54	.30	.38	.57	.49	.56	
BG2-M	.44	.56	.51	.34	.62	.49	
BG3-M	.57	.68	.80	.46	.75	.77	
BG4-M	.51	.42	.43	.50	.55	.55	
BG5-M	.60	.54	.65	.54	.66	.73	
BG6-M	.61	.24	.43	.65	.42	.60	
UESA1-M	.43	.67	.63	.64	.52	.69	
UESA2-M	.38	.49	.39	.65	.45	.62	
UESA3-M	.42	.65	.60	.62	.59	.74	
UESA4-M	.37	.34	.25	.62	.49	.62	

Note. All values are significant at .01 alpha level. R^2 = interitem reliability values; ISOS-P-F = sexual objectification toward females; BC-F = body comments toward females; BG-F = body gazes toward females; UESA-F = unwanted explicit sexual advances toward females; ISOS-P-M = sexual objectification toward males; BC-M = body comments toward males; BG-M = body gazes toward males; UESA-M = unwanted explicit sexual advances toward males.

However, examining the parameters of Model A1 and Model A2, we noticed an issue with some factor loadings within the specific factors BC-F and BC-M. The problem was the same for both factors, that is, items BC1-F and BC3-F on the one hand, and items BC1-M and BC3-M, on the other showed negative standardized factor loadings on the BC-F factor and on the BC-M factor, respectively. The same result was observed in both the pilot sample and the national sample (see Table 2).

Therefore, according to Gervais and colleagues (2018), who highlighted a similar problem with the specific BC factor, we decided to test two new models, eliminating these negative factor loadings and including for these items only the factor loadings on the respective general factors, namely ISOS-P-F and ISOS-P-M. In this way, we obtained Model B1 (for ISOS-P-F) and Model B2 (for ISOS-P-M).

Model B1 had good fit indices for both the pilot sample, $\chi^2(73) = 267.38$, $p < .01$; RMSEA = .05; CFI = .97; TLI = .96; SRMR = .04, and the national sample, $\chi^2(73) = 702.77$, $p < .01$; RMSEA = .06; CFI = .96; TLI = .95; SRMR = .06. As for Model B2, the fit parameters were good in the pilot study, $\chi^2(73) = 313.66$, $p < .01$; RMSEA = .06; CFI = .96; TLI = .94; SRMR = .06, but borderline acceptable in the national study, $\chi^2(73) = 1020.60$, $p < .01$; RMSEA = .08; CFI = .96; TLI = .94; SRMR = .07. Both Model B1 and Model B2 showed all significant and positive factor loadings and adequate interitem reliability values (R^2) for all the items (see Table 2).

Reliability

As for reliability, in both Model B1 and Model B2 the α coefficients were greater than .70 for both general and specific factors. As for Model B1, α values ranged from .77 for UESA-F to .89 for ISOS-P-F in the pilot study, and from .76 for UESA-F to .87 for ISOS-P-F in the national study. As for Model B2, they ranged from .76 for UESA-M to .87 for ISOS-P-M in the pilot study, and from .84 for BC-M to .91 for ISOS-P-M in the national study.

The same was true for the ω coefficients, in both models. In Model B1, they ranged from .76 for UESA-F to .91 for ISOS-P-F in the pilot sample, and from .84 for BC-F to .93 for ISOS-P-F in the national sample. Whereas in Model B2, they ranged from .77 for UESA-M to .91 for ISOS-P-M in the pilot sample, and from .84 for BC-M to .95 for ISOS-P-M in the national sample.

As for ω_H indices, in the pilot sample, the values were respectively .79 and .74 for the two general factors ISOS-P-F (in Model B1) and ISOS-P-M (in Model B2). A similar situation also occurred in the national

study, where values were .78 both for ISOS-P-F (in Model B1) and for ISOS-P-M (in Model B2). ECV values for the general factors were .64 and .57 in the pilot study and .60 and .60 in the national study for Model B1 and Model B2, respectively. Finally, the PUC index was .77 for both ISOS-P-M and ISOS-P-F, in both studies. As reported by Rodriguez et al. (2016), all these values show a relative parameter bias of less than 15%. All the reliability indices for both the pilot sample and the national sample are reported in Table 3.

TABLE 3
Reliability of the scale

			α	ω	ω_H	ECV	PUC
Model B1 (ISOS-P-F)	Pilot study (*N* = 904)	*General factor*					
		ISOS-P-F	.89	.91	.79	.64	.77
		Specific factors					
		BC-F	.82	.87	.27	.08	/
		BG-F	.88	.90	.22	.12	/
		UESA-F	.77	.76	.54	.16	/
	National study (*N* = 2198)	*General factor*					
		ISOS-P-F	.87	.93	.78	.60	.77
		Specific factors					
		BC-F	.78	.84	.19	.26	/
		BG-F	.86	.90	.29	.36	/
		UESA-F	.76	.84	.60	.71	/
Model B2 (ISOS-P-M)	Pilot study (*N* = 904)	*General factor*					
		ISOS-P-M	.87	.91	.74	.57	.77
		Specific factors					
		BC-M	.78	.84	.27	.29	/
		BG-M	.86	.87	.36	.44	/
		UESA-M	.76	.77	.50	.66	/
	National study (*N* = 2198)	*General factor*					
		ISOS-P-M	.91	.95	.78	.60	.77
		Specific factors					
		BC-M	.84	.84	.25	.06	/
		BG-M	.90	.90	.51	.22	/
		UESA-M	.89	.89	.35	.11	/

Note. ECV = explained common variance; PUC = percent of uncontaminated correlations; ISOS-P-F = sexual objectification toward females; BC-F = body comments toward females; BG-F = body gazes toward females; UESA-F = unwanted explicit sexual advances toward females; ISOS-P-M = sexual objectification toward males; BC-M = body comments toward males; BG-M = body gazes toward males; UESA-M = unwanted explicit sexual advances toward males.

Models' Comparison

To obtain further verification of the adequacy of the adapted 3-factor bifactorial structure for sexual objectification toward females (Model B1) and sexual objectification toward males (Model B2), we tested additional possible solutions, that may explain the data. We tested two second-order hierarchical solutions, one in which the items loaded on the subfactors BC-F, BG-F, UESA-F were loaded on the superordinate factor ISOS-P-F (Model C1), and the other one in which the items loaded on the subfactors BC-M, BG-M, and UESA-M were loaded on the superordinate factor ISOS-P-M (Model C2). Moreover, we tested a 1-factor solution, in which the items loaded directly on the factors ISOS-P-F (Model D1) and ISOS-P-M

(Model D2). Finally, we tested two last solutions with three correlated factors, in which the items loaded only on the respective factors BC-F, BG-F, and UESA-F (Model E1), and BC-M, BG-M, and UESA-M (Model E2), without considering the superordinate factors ISOS-P-F and ISOS-P-M.

As reported in Table 4, Model C1 and Model C2 present fit indices at the limits of acceptability, and yet worse compared to the fit indices of Model B1 and Model B2, respectively. The same considerations also apply to Model E1 and Model E2. Finally, both Model D1 and Model D2 had indices far outside the expected thresholds, showing a poor goodness of fit. In conclusion, Model B1 and Model B2 were the solutions with the best fit, compared to all the alternatives considered.

TABLE 4
Fit indices for all alternative solutions

Fit indices	*df*	χ^2	RMSEA	CFI	TLI	SRMR	AIC	BIC
Model A1 Basic 3-factor bifactorial solution for ISOS-P-F	71	645.39	.06	.97	.95	.05	55729.10	56095.01
Model A2 Basic 3-factor bifactorial solution for ISOS-P-M	71	857.33	.07	.96	.95	.06	51255.35	51621.26
Model B1 Adapted 3-factor bifactorial solution for ISOS-P-F	73	702.77	.06	.96	.95	.06	55782.47	56136.95
Model B2 Adapted 3-factor bifactorial solution for ISOS-P-M	73	1020.60	.08	.96	.94	.07	51414.62	51769.10
Model C1 Second-order hierarchical solution for ISOS-P-F	83	1118.05	.07	.94	.92	.06	56177.75	56475.05
Model C2 Second-order hierarchical solution for ISOS-P-M	83	1297.92	.08	.94	.93	.07	51671.94	51969.24
Model D1 1-factor solution for ISOS-P-F	86	3778.91	.14	.79	.74	.11	58832.61	59112.76
Model D2 1-factor solution for ISOS-P-M	86	4567.00	.15	.80	.75	.12	54935.44	55215.59
Model E1 3-correlated-factors solution for ISOS-P-F	83	1064.43	.07	.94	.93	.06	56124.13	56421.44
Model E2 3-correlated-factors solution for ISOS-P-M	83	1297.92	.08	.94	.93	.07	51671.94	51969.24

Note. RMSEA = root-mean-square error of approximation; CFI = comparative fit index; TLI = Tucker-Lewis index; SRMR = standardized root-mean-square residual; AIC = Akaike information criterion; BIC = Bayesian information criterion; ISOS-P-F = sexual objectification toward females; ISOS-P-M = sexual objectification toward males.

Convergent Validity

In the national study, along with the two versions of sexual objectification (ISOS-P-F and ISOS-P-M), we measured benevolent sexism (B-SEX), hostile sexism (H-SEX), self-deceptive enhancement (SDE), and impression management (IM). The measure of these variables allowed us to verify the convergent validity and the possible effect of social desirability on the participants.

To analyze the data, given the complexity of the proposed model, we used CFA with parcels instead of single items (Cadamuro et al., 2022; Little et al., 2013; Trifiletti et al., 2021). Based on the number of items included in each scale, we created three parcels for ISOS-P-F, three parcels for ISOS-P-M, two for B-SEX, two for H-SEX, two for SDE, and two for IM.

This model presented acceptable fit indices: $\chi^2(58) = 500.34$, $p < .01$; RMSEA = .06; CFI = .96; TLI = .94; SRMR = .04. As reported in Table 5, we observed that both general factors of the ISOS-P are positively associated with both forms of sexism. In particular, there were strong or moderate correlations of ISOS-P-F with B-SEX (.29) and with H-SEX (.51) and of ISOS-P-M with B-SEX (.31) and with H-SEX (.48). This means that the participants consider sexual objectification (toward females and toward males) associated with sexism, but clearly distinguish these two constructs.

Furthermore, both general factors of the ISOS-P are significantly associated, but with low or moderate magnitude, with the two factors measured by the BIDR 6-short form (Bobbio & Manganelli, 2011). Indeed, the correlation values were .13 and –.38 for ISOS-P-F with SDE and with IM, and .10 and –.22 for ISOS-P-M with SDE and with IM. This means that the ability of the ISOS-P to measure sexual objectification is little affected by social desirability.

TABLE 5
Correlations of the general factors of the ISOS-P with the dimensions of the ASI and BIDR six scales

Factor	ISOS-P-F	ISOS-P-M	B-SEX	H-SEX	SDE	IM
ISOS-P-F	1					
ISOS-P-M	.36**	1				
B-SEX	.29**	.31**	1			
H-SEX	.51**	.48**	.67**	1		
SDE	.13**	.10*	.24**	.26**	1	
IM	–.38**	–.22**	–.15**	–.31**	–.11**	1

Note. ISOS-P = Interpersonal Sexual Objectification Scale-Perpetration Version; ASI = Ambivalent Sexism Inventory; BIDR = Balanced Inventory of Desirable Responding; ISOS-P-F = sexual objectification toward females; ISOS-P-M = sexual objectification toward males; B-SEX = benevolent sexism; H-SEX = hostile sexism; SDE = self-deceptive enhancement; IM = impression management.
*$p < .05$; **$p < .01$.

Measurement Invariance across Gender

Finally, we evaluated the measurement invariance of the ISOS-P across females and males. We first tested the chosen models (i.e., Model B1 and Model B2) with males and females separately and adequate fit indices were found in both groups (see Table 6). For both Model B1 and Model B2 we checked the configural invariance and in both cases, adequate fit indices were found. These results showed that the same number of items represents the same factors across females and males. So, we compared the configural models and the

metric models, but the comparisons showed the absence of metric invariance, both for Model B1, $\Delta\chi^2(26) = 133.3$, $p < .01$, and for Model B2, $\Delta\chi^2(26) = 256.1$, $p < .01$.

At this point, we considered the modification indices of both models and noted that the factor loadings related to UESA were not invariant across females and males. Then we tested partial metric invariance, allowing these factor loadings to be free to vary in both Model B1 and Model B2. This time the comparisons between the configural and metric models showed two different results: while in Model B2 the metric invariance between males and females continued to be absent, $\Delta\chi^2(16) = 88.5$, $p < .01$, in Model B1 the partial metric invariance held across the two groups, $\Delta\chi^2(16) = 23.2$, $p > .05$. This means that while sexual objectification toward males is not represented by the same items in an equivalent way across gender, sexual objectification toward females seems to be represented by the same items, except for those related to unwanted explicit sexual advances.

TABLE 6
Indices of fit for measurement invariance across gender

Model B1: revised 3-factor bifactorial model for sexual objectification toward females (ISOS-P-F)							
Fit indices	χ^2 (*df*)	RMSEA	CFI	TLI	SRMR	AIC	$\Delta\chi^2$ (Δdf)
Female	382.6** (73)	.06	.96	.94	.03	24913.2	
Male	350.0** (73)	.06	.97	.95	.03	28442.1	
Configural invariance	732.6** (146)	.06	.96	.95	.03	53355.3	
Metric invariance	865.9** (170)	.06	.96	.95	.04	53440.6	133.3** (26)
Partial metric invariance[a]	755.8** (162)	.06	.96	.95	.03	53398.7	23.2 (16)
Model B2: revised 3-factor bifactorial model for sexual objectification toward males (ISOS-P-M)							
Fit indices	χ^2 (*df*)	RMSEA	CFI	TLI	SRMR	AIC	$\Delta\chi^2$ (Δdf)
Female	784.8** (73)	.07	.94	.92	.08	29981.8	
Male	803.8** (73)	.07	.93	.91	.08	20469.1	
Configural invariance	1588.6** (156)	.06	.94	.91	.08	50450.9	
Metric invariance	1844.7** (178)	.06	.92	.91	.08	50658.9	256.1** (26)
Partial metric invariance[a]	1677.1** (170)	.06	.93	.92	.08	50507.3	88.5** (16)

Note. RMSEA = root-mean-square error of approximation; CFI = comparative fit index; TLI = Tucker-Lewis index; SRMR = standardized root-mean-square residual; AIC = Akaike information criterion; $\Delta\chi^2$ = difference between χ^2s. For the meaning of symbols, see also Tables 2-5. a = in all the partial metric models, the factor loadings of the items UESA1-F, UESA2-F, UESA3-F, UESA4-F, UESA1-M, UESA2-M, UESA3-M, and UESA4-M (UESA = unwanted explicit sexual advances) were free to vary across the two gender groups.
**$p < .01$.

Discussion

An Italian adaptation of the Interpersonal Sexual Objectification Scale-Perpetration Version (ISOS-P) for measuring sexual objectification was presented. The research involved a pilot sample of 904 university students and a national sample of 2198 Italian citizens.

Compared to the original version of the scale, which presented the items as gender-neutral form, our adaptation has introduced the measuring of sexual objectification toward both males and females. In fact, all the items have been doubled, being declined once to the feminine and another to the masculine form and this allows investigators to keep these two evaluations separate and to obtain double specific and general factors.

Furthermore, the results showed that the Italian adaptation has good validity and reliability, even if the 3-factor bifactorial structure of the original scale (Gervais et al., 2018) required some modifications. In particular, the factorial loadings of items BC1 and BC3 on the factor body comments (BC) were not included. Therefore, in our model, these two items only contribute to the variability of the general factor ISOS-P.

The results showed that both general factors of the ISOS-P, that is, sexual objectification toward females and sexual objectification toward males, have low to moderate correlations with benevolent sexism and hostile sexism and with self-deceptive enhancement and impression management. Therefore, the Italian adaptation of the ISOS-P has good convergent validity and it is moderately conditioned by social desirability.

Finally, the results showed that the distinction between sexual objectification toward females and males can be useful to testing the factorial invariance between males and females. In fact, while sexual objectification toward males is not represented by the same elements in an equivalent way across gender, the items that measure sexual objectification toward females have the same meaning for males and females, except for those relating to unwanted explicit sexual advances. Furthermore, in general, the fit indices have shown that objectification toward females operates better than that toward males. This result suggests that doubling the items was advantageous otherwise we could not have demonstrated the invariance of objectivity toward females. In fact, this result is in contrast with the conclusion of the absence of invariance that the authors of the original scale had come to.

This data could be in line with the literature that shows how, although attention is being paid more and more to male objectification (Davidson et al., 2013; Green et al., 2014; Rollero, 2013) unfortunately, it remains a tool mainly used by men to create, maintain, and strengthen patriarchal behaviors (Fredrickson & Roberts, 1997). Female sexual objectification can therefore be understood as the manifestation of a broader sexist ideology that legitimizes gender inequalities (Calogero & Jost, 2011). In fact, empirical evidence shows that women continue to be subject to sexist discrimination (Swim et al., 2001) and one of the most widespread forms is to treat them as mere sexual objects to look at and evaluate according to their physical appearance, ignoring their needs and desires (Fredrickson & Roberts, 1997).

Harsey and Zurbriggen (2021) have shown that the acceptance of female sexual objectification by men and women is associated with sexist beliefs. In particular, the hostile sexism of men and women has been predictive of higher levels of sexual objectification of women supporting the idea that the objectification of women derives from sexism (Mackinnon, 1989).

Ultimately, sexual objectification is related to hostile sexism, sexist attitudes, hostility toward women, likelihood of sexual aggression, and rape proclivity (Cikara et al., 2011; Rollero, 2013; Rudman & Mescher, 2012); sexual objectifying behaviors are also associated with the perpetration of sexual harassment, sexual aggression, and/or sexual exploitation (Franz et al., 2016; Fredrickson & Roberts, 1997; Gervais & Eagan, 2017; Gervais et al., 2014; Kozee et al., 2007).

Regarding the objectification of women by other women, as argued by Parent and colleagues (2020), women who objectify other women are engaged in downward social confrontation to preserve their self-esteem in the face of a constantly objectifying culture and therefore the theory of social comparison (Festinger, 1954) could explain the objectification of women by other women. The experience of sexual objectification promotes the internalization of cultural standards of attractiveness and therefore many women can internalize these standards but can also apply them to other women.

However, this research has some limitations. First, the sampling technique used is not probabilistic, and this aspect places limits on the possibility of generalizing the results obtained. Further studies will be necessary to confirm the psychometric validity of the Italian version of the ISOS-P.

Secondly, the national sample is made up of many students (about 48%) and has a low mean age (about 33 years), compared to the national mean of the Italian population, which is about 46 years (ISTAT, 2021). This aspect poses some issues for the representativeness of the sample and implies the need for future studies with further samples with a different composition.

Thirdly, both the pilot and national samples are well balanced with respect to gender, but not with respect to sexual orientation. In both cases, most participants are heterosexual and this did not allow for any differences in the application of the ISOS-P due to this variable.

Another limitation is relative to the convergent validity, indeed we considered only sexism because, like sexual objectification, it reflects cultural models shared within social contexts. Future studies could deepen this aspect, adding more constructs.

Further studies are therefore needed to evaluate any construct differences, for example in gay men and lesbian women. The tendency to objectify, in fact, could vary according to the combinations between of gender and sexual orientation, as well as the feeling of being objectified (Engeln-Maddox et al., 2011).

Conclusion

The literature on sexual objectification, starting from the objectification theory (Fredrickson & Roberts, 1997), has extensively highlighted the negative consequences on women of experiences of objectification, developing measurement tools to capture self-objectification. However, fewer studies considered the objectifying behaviors and the consequences of the difference between males and females in the enactment of this behavior.

The peculiarity of the Italian adaptation of ISOS-P, therefore, offers the possibility of evaluating the perpetration of objectifying behaviors toward men and women, implemented by both and this has allowed us to highlight how sexual objectification is still a phenomenon that mainly affects female bodies, despite the growing attention to the phenomenon from the male point of view. Sexual objectification is thus configured as a cultural practice that perpetuates gender inequality. For this reason, it is important to increase knowledge about this phenomenon if we consider that objectification, in addition to influencing attitudes toward interpersonal and sexual violence, has also been linked to the perpetration and victimization of intimate partner violence (IPV; Jonnson et al., 2018; Sáez et al., 2022) and it is part of the sexual victimization and harassment that women suffer in their everyday life (Fredrickson & Roberts, 1997). In fact, sexual objectification is a system, a structured set of social arrangements reinforcing the gender hierarchy that particularly prescribes interdependent roles and behaviors to men and women (Calogero & Tylka, 2014); and female sexual objectification and gender-based violence are closely related (Wright & Tokunaga, 2016); men who objectify women in their social environment, including their intimate partners, have paved the way for IPV (Gervais et al., 2014).

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