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Abstract
According to objectification theory, being treated as an object leads women to engage in self-objectification, which in turn increases body surveillance and body shame, impairing women's mental health. While most studies focusing on self-objectification rely heavily on Western populations that emphasize individualism, the current work investigates the phenomenon of body surveillance and body shame in a cross-cultural framework, involving a comparison between American, Belgian, Russian, and Thai women (N = 605). This study aims to highlight two predictors – cultural orientation and self-compassion. Results indicate that greater endorsement of vertical individualism is related to body surveillance for American, Belgian, and Russian women; however, this relation occurred in the opposite direction for Thai women. Moreover, Americans' higher levels of body surveillance and body shame coexist with less self-compassion, whereas the reverse was true for Thais. We also tested a complementary moderation model and found that the relation between body surveillance and body shame was moderated by self-compassion, further pointing to the important role of self-compassion in the model posited by objectification theory. As a result, discussion centers on a call for future research to more closely examine how self-objectification and its correlates unfold among women of various cultural backgrounds.

Keywords: Body surveillance, body shame, self-objectification, self-compassion, cultural orientation

> "The worst loneliness is to not be comfortable with yourself."
> Mark Twain

According to objectification theory (Fredrickson & Roberts, 1997), Western society sexually objectifies women by emphasizing their physical appearance and leading people to treat objectified targets as if they were sex objects (e.g. Bernard et al., 2020; Bernard & Wollast, 2019; for a recent review, see Bernard et al., 2020). Women in particular are frequent targets of sexual objectification (e.g. Kozee et al., 2007). These recurring experiences of objectification lead women to self-objectify – focusing on their body as an object to be evaluated by others (Fredrickson & Roberts, 1997). Due to objectification theory's focus on Western cultures, a plethora of research has examined women's experiences of self-objectification and the resulting consequences from a Western perspective (for a review, see Roberts et al., 2018). The present work examined cultural orientation as a predictor of self-objectification and the role self-compassion may play in mediating the link between cultural orientation and self-objectification,

as well as the role of self-compassion in moderating the connection between self-objectification and body shame among women from various cultures.

Self-objectification

Self-objectification involves adopting a third-person perspective of the self – focusing on appearance as opposed to personal thoughts and feelings. Ample research has evidenced the negative impact of self-objectification on women's mental health, increasing appearance concerns, anxiety, body shame, body monitoring, eating disorders, depression, sexual dysfunction, and internalization of cultural standards of beauty (for a review, see Moradi & Huang, 2008). As a result, self-objectification commonly manifests in body surveillance in which women attempt to meet beauty ideals by monitoring their appearance relative to cultural expectations (McKinley & Hyde, 1996). Given the strict beauty standards imposed by society (for a state of empirical research, see Ward, 2016), women frequently report feeling inadequate, despite attempts to habitually monitor their appearance, resulting in feelings of body shame (Szymanski et al., 2011). While body surveillance can serve functions other than self-objectification (i.e. to gain social acceptance), self-objectification and body surveillance are comorbid phenomena (Moradi & Huang, 2008).

As Western (i.e. American) beauty ideals permeate other cultures, recent scholars have explored whether self-objectification is a uniquely Western phenomenon. Through a comparison involving non-Western and Western countries, Loughnan et al. (2015) found that self-objectification, measured with the Self-Objectification Questionnaire (SOQ; Fredrickson et al., 1998), was lower in Eastern nations (i.e. Japan, India, Pakistan) and higher in Western nations (i.e. Australia, US, UK). Conversely, Crawford et al. (2009) found that Nepalese women engage in less body surveillance but report more body shame than American women. Of the limited studies examining East Asian countries specifically, research reveals links between materialism and self-objectification (Teng et al., 2017) among Chinese women, as well as links between self-presentation management and self-objectification among Korean women (Lyu, 2016).

As the review above suggests, the findings from the limited studies in this area are somewhat inconsistent – some studies reveal more self-objectification and related consequences for women from Western than Eastern cultures, whereas others show the reverse, and still others show mixed effects (e.g. lower body surveillance, but higher body shame). Further, the limited number of cross-cultural studies on self-objectification focus on the West vs. East dichotomy. This approach, although frequently used in cross-cultural studies, presents a dramatically simplified image of the world's diversity and cross-cultural differences in psychological processes. Finally, although there are often cross-cultural differences in psychological constructs, there is also substantial variability within cultures in the degree to which individuals have internalized various cultural norms. The current study aims to provide a more nuanced picture of the relation between culture and body image by investigating self-objectification in four distinct cultural contexts, representing different regions of the world. We sampled participants from the US (North America), Belgium (Western Europe), Russia (Eastern Europe) and Thailand (Southeast Asia), along the West-East continuum, providing a broader coverage of cultural differences than earlier studies in this field of research.

The West-East continuum has been consistently linked to cross-cultural differences in values. For instance, Western countries tend to score higher on individualism (or autonomy) and lower on power distance (or hierarchy) (Hofstede, 2001; Schwartz, 2006). Hence, sampling countries along this continuum is likely to provide variation in cultural orientations that would serve as an ideal testing ground for examining self-objectification cross-culturally. Because self-objectification may operate differently in these different cultural contexts, we examined two factors that might play a role in predicting self-objectification – cultural orientation and self-compassion – across the four countries.

Cultural orientation

Individualistic cultures emphasize personal goals (e.g. achievements), and individuals in these cultures tend to view themselves as independent from groups and focused on personal self-concepts,

whereas collectivistic cultures emphasize group goals (e.g. family, teamwork) by sacrificing personal objectives and by displaying loyalty to the ingroup (Singelis et al., 1995; Triandis & Gelfand, 1998). At the same time, individualistic and collectivistic cultures can be further characterized by horizontal orientation – seeing the self as similar to other ingroup members with equality expected – or vertical orientation – seeing the self as distinct from fellow ingroup members with inequality expected. The horizontal dimension is marked by a sense of social cohesion and cooperation with members of the ingroup (Singelis et al., 1995; Triandis, 1995). Individuals high in horizontal cultural orientations strive to be unique without desiring or expecting special status, emphasize interdependence, perceive all members of the collective equivalently, and support egalitarianism. In comparison, the vertical dimension is marked by an emphasis on hierarchy and competition in which the self must sometimes sacrifice ingroup needs in order to move up in the ranks. Individuals high in vertical cultural orientations accept and expect hierarchy and inequality (Singelis et al., 1995; Triandis, 1995).

This framework integrates two important cultural dimensions mentioned earlier: individualism vs. collectivism and egalitarianism vs. hierarchy. Unlike Hofstede's (2001) and Schwartz's (2006) frameworks that only allow for measurement of cultural dimensions on the societal level, this framework (Singelis et al., 1995) offers measurement that can be used on the level of individuals. There are differences in the degree to which people within different cultures have internalized the proclivities associated with their broader culture. Measuring cultural orientations at the individual level, in terms of an support of individualistic vs. collectivistic *and* egalitarian vs. hierarchical worldviews, rather than making assumptions based on country-level scores, offers a possibility to capture within country variations in the endorsement of cultural orientations, making cultural factors a more proximal antecedent of psychological outcomes.

Although there is varied endorsement of cultural orientation within countries, Americans, Belgians, Russians, and Thais show important vertical traits. By promoting social comparison, such vertical traits may lead them to focus on physical appearance and induce concerns requiring body surveillance (Chatard et al., 2017). In a survey with a US sample, vertical individualism was associated with perpetration

of sexual objectification, mediated by social comparison (Gervais et al., 2015). According to Gervais et al. (2015), highly hierarchical societies may prompt social comparison to evaluate one's social position. Because appearance provides an estimation of social ranking, hierarchical orientations may increase appearance focused comparisons. Furthermore, other objectification and self-objectification are associated positively (Strelan & Hargreaves, 2005). Like other-objectification (Gervais et al., 2015), self-objectification may also be associated with vertical individualism. In the same vein, feminist perspectives also suggest that orientations supporting power differentials (e.g. vertical orientations) increase self-objectification (Bartky, 1990). Moreover, given the asymmetric relationship between the "objectifier" and the "objectified" (see Gruenfeld et al., 2008), interpersonal objectification may be experienced more frequently when such relationships are prevalent, laying the foundation for women to engage in more self-objectification. Collectivistic cultures also tend to process information holistically while individualistic cultures tend to focus on focal features (see Masuda & Nisbett, 2001). This focus on individual parts, rather than the whole, is also a defining feature of the objectification phenomenon (e.g. Bernard et al., 2018; Gervais et al., 2012; for a review, see Bernard et al., 2018), suggesting that individualistic orientations may prompt narrow and objectifying considerations of self attributes (Gervais et al., 2015), in turn increasing body surveillance and body shame.

Integrating objectification literature with that on cultural orientation suggests that vertical and individualistic cultures may generate more body image concerns than other cultural dimensions. Importantly, while cultural orientation may indirectly shape women's engagement in self-objectification through differences in inequality, cultural orientations may also provide women with a potential protective factor against self-objectification through self-compassion.

Self-compassion

Self-compassion, the ability to kindly accept oneself or show self-directed kindness while suffering, comprises three interconnected components: self-kindness, the perception of personal experience as a common human experience, and mindfulness (Neff, 2003).

Importantly, self-compassion is derived from Buddhist philosophy, which is more widespread in Eastern than Western cultures. In this regard, self-compassion should be higher in Asian cultures (Neff et al., 2008), and specifically in Thailand where 92.6% of the population practice Theravada Buddhism (Pew Research Center on Religion and Public Life, 2010). Because recognition of common humanity and interconnectedness are key factors of self-compassion, we expect self-compassion to be more prevalent in collectivistic cultures emphasizing an interdependent self, relative to individualistic cultures fostering an independent self. Likewise, self-compassion should be associated with a greater endorsement of the horizontal dimension because valuing equality and social cohesiveness is connected to viewing others through the lens of interconnected humanity.

Unlike self-objectification, self-compassion has been found to positively impact individuals' well-being (for a review, see Zessin et al., 2015), and is linked negatively with body surveillance and body shame (e.g. Albertson, Neff & Dill-Shackleford, 2015; Liss & Erchull, 2015; Wollast et al., 2019). Considering the interplay between self-compassion and self-objectification, Wollast et al. (2019) found that self-compassion moderated the effect of body surveillance on depression and happiness (but not body shame) separately among women living in Belgium. For women low in self-compassion, body surveillance was negatively associated with happiness, which was explained by increased depression, but for women high in self-compassion, body surveillance was not associated with happiness or depression. Together these findings suggest self-compassion may influence the relation between women's experiences of body surveillance and body shame, potentially protecting them against the harmful appearance-focused milieu in which they live.

Overview of the present work and hypotheses

We investigated the occurrence of body surveillance and body shame of women by considering the role of cultural orientation (horizontal individualism, horizontal collectivism, vertical individualism, and vertical collectivism) and self-compassion. To do so, we sampled participants from the United States, Belgium, Russia, and Thailand.

Hypothesis 1. First, we expected American women would report engaging in more body surveillance and feeling more body shame than all other women (1a). Additionally, we postulated that self-compassion would be higher among Thais than all other women (1b).

Hypothesis 2. Second, we hypothesized that greater adherence to vertical individualism and vertical collectivism would be related to increased body surveillance and body shame (2a). Whereas greater endorsement of vertical collectivism and horizontal collectivism were expected to be related to increased self-compassion (2b). We also hypothesized that more self-compassion would be associated with less body surveillance and body shame (2 c). Furthermore, we hypothesized that increased body surveillance would predict increased body shame (2d).

Hypothesis 3. Third, to examine the role of cultural orientation in self-objectification, we examined a model including a serial mediation. More specifically, we examined the indirect effect of cultural orientation on feelings of body shame. We expected cultural orientation to be associated with self-compassion, which would predict body surveillance. Body surveillance would then predict body shame. We hypothesized that greater endorsement of vertical individualism would indirectly increase women's feelings of body shame through decreased self-compassion. This mediation model was derived from objectification theory (Fredrickson & Roberts, 1997) and related research (e.g. Przezdziecki et al., 2012); however, we also explored whether there are any cross-cultural differences in the relations between these constructs.

Hypothesis 4. Fourth, we examined a complementary moderation model testing whether self-compassion emerged as a buffer of the effect of body surveillance on body shame. Specifically, self-compassion was hypothesized to moderate the relation between body surveillance and body shame, regardless of cultural orientation (i.e. independently of the serial mediation). In particular, increases in self-compassion were expected to lessen the negative impact of body surveillance on body shame. Moreover, we explored how these relations vary across cultures.

Method

Participants

In total, 605 women ($N_{American}$ = 152, $N_{Belgian}$ = 149, $N_{Russian}$ = 150, N_{Thai} = 154) participated. Participants' age ranged from 18 to 56 years ($M_{American}$ = 19.75, *SD* = 6.10; $M_{Belgian}$ = 21.01, *SD* = 3.39; $M_{Russian}$ = 24.94, *SD* = 5.14; M_{Thai} = 21.20, *SD* = 2.87; M_{all} = 21.72, *SD* = 4.95), with the majority of participants from each country (> 85%) identifying as undergraduate students. Self-reported ethnicity, highest level of education completed, sexual orientation, and marital status for each of the samples are available in the online supplementary material.[1] Supervised by at least one of the authors, participants interested in volunteering to participate in a study about cultural influences on body image were recruited from their university campus and completed the questionnaire voluntarily, using their personal computers and a survey access link. To gain as much data as possible, we also posted the survey link on students' online university work groups and on social media sites.

Materials and procedure

Participants completed a single online questionnaire. Participants in the American sample were provided with English versions of the measures from the original questionnaires validated in the literature. Instruments administered to the Belgian, Russian, and Thai samples were taken from previous studies and back-translated to ensure construct equivalence (Brislin, 1970). Participants self-reported cultural orientation, body surveillance, body shame, self-compassion, and socio-demographics.

Cultural orientation

To assess cultural orientation, we used the Cultural Orientation Scale (Triandis & Gelfand, 1998). This 16-item scale consists of four subscales assessing the extent to which people support attitudes related to horizontal individualism (HI; e.g. "I'd rather depend on myself than others."), vertical individualism (VI; e.g. "It is important that I

do my job better than others."), horizontal collectivism (HC; e.g. "If a coworker gets a prize, I would feel proud."), and vertical collectivism (VC; e.g. "It is my duty to take care of my family, even when I have to sacrifice what I want.") using a scale from 1 (*never or definitely no*) to 9 (*always or definitely yes*) with higher scores indicating stronger support of that particular cultural orientation.

Body surveillance and body shame

We used two dimensions of the Objectified Body Consciousness Scale (McKinley & Hyde, 1996). Specifically, participants completed the Body Surveillance (e.g. "During the day, I think about how I look many times") and the Body Shame (e.g. "I would be ashamed for people to know what I really weigh") subscales by rating eight items for each scale. Responses ranged from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores indicating more body surveillance or body shame.

Self-compassion

Participants completed the Self-Compassion Scale – Short Form (Raes et al., 2011). Items (e.g. "When something painful happens I try to take a balanced view of the situation") are rated on a 5-point response scale ranging from 1 (*almost never*) to 5 (*almost always*) with higher scores reflecting greater self-compassion.

Measurement invariance

Given our comparison of four nationalities, prior to comparing responses across nationalities, it was necessary to demonstrate all participants interpreted the survey questions in a similar manner (Byrne, 2004). To do so, we estimated different levels of measurement invariance for each measure using Mplus (L. K. Muthen & Muthen, 2009). Model fit was assessed using multiple fit indices to provide a multifaceted assessment of the models (Tanaka, 1993). First, we tested the unconstrained (i.e. configural) model to verify that the general factor structure of the measure was the same across different groups by freely estimating parameters in each of the groups. If the original

model with a single factor and uncorrelated error terms showed poor fit to the data, factor loadings and residual correlations were evaluated. Factor loadings of less than.40 were dropped for suboptimal fit (Brown, 2015) and residual correlations were added between items when necessary and theoretically justified. To determine whether measurement invariance was present, we tested metric invariance (i.e. whether all items have similar loadings on the latent construct across groups) by comparing the metric model with constrained measurement weights to the unconstrained configural model. Then, we tested scalar invariance (i.e. whether the predicted values of the items are similar across groups if the latent factor is equal to zero) by comparing the scalar model with constrained intercepts to the metric model with constrained measurement weights. Changes in CFI < .01 and RMSEA of < .015 are considered indications for non-invariance (Chen, 2007). Importantly, achieving full or partial scalar invariance is a prerequisite for the comparison of latent mean values obtained (Brown, 2015). Partial invariance is achieved when at least two items per latent variable (i.e. factor loadings, factor intercepts) are found to be invariant (B. Muthen & Christoffersson, 1981).

Measurement invariance analysis (detailed in the online supplement) indicated that full metric invariance was established for all constructs, but none of the constructs showed full scalar invariance. Importantly, partial scalar invariance was established for all measures, with the measure of body surveillance showing the largest discrepancies between countries (three out of eight intercepts remained equal) and the measure of body shame showing the least (five out of eight intercepts remained equal). Internal consistency was adequate for each of the measures.[2]

Results

Main effects of nationality

To examine Hypothesis 1, we analyzed main effects of nationality on cultural orientations, self-compassion, body surveillance, and body shame (descriptive statistics can be found in the Table 1).[3]

Table 1. Mean ratings of all variables as a function of nationality.

	American	*Belgian*	*Russian*	*Thai*	*All*
HI	6.86 (1.51)[a]	6.43 (1.67)[b]	7.31 (1.24)[c]	7.10 (1.31)[ac]	6.92 (1.47)
VI	5.38 (1.47)[a]	4.13 (1.70)[b]	5.86 (1.67)[c]	4.72 (1.54)[d]	5.02 (1.72)
HC	6.48 (1.30)[a]	6.72 (1.25)[a]	5.92 (1.45)[b]	6.61 (1.35)[a]	6.43 (1.37)
VC	5.57 (1.79)[a]	5.25 (1.92)[a]	5.54 (1.68)[a]	6.63 (1.64)[b]	5.75 (1.83)
Body surveillance	4.78 (1.23)[a]	4.49 (1.02)[a]	4.66 (1.12)[a]	3.85 (1.01)[b]	4.44 (1.15)
Body shame	3.75 (1.57)[a]	3.01 (1.38)[b]	3.37 (1.31)[b]	3.11 (1.02)[b]	3.31 (1.36)
Self-compassion	2.61 (0.72)[a]	2.82 (0.65)[b]	3.04 (0.61)[c]	3.50 (0.60)[d]	3.00 (0.72)

HI = horizontal individualism, VI = vertical individualism, HC = horizontal collectivism, VC = vertical collectivism. Standard deviations are presented in parentheses. Means within rows with different subscripts are significantly different, *p*s <.05.

Body surveillance and body shame

A one-way analysis of variance (ANOVA) revealed a significant main effect of nationality on body surveillance, $F(3, 601) = 21.73$, $p < .001$, $\eta^2 = .10$. A post-hoc Tukey's test revealed that Thai participants reported significantly less body surveillance than all other women (*p*s < .001, *d*s = .63-.83). Although Americans reported the greatest body surveillance, inconsistent with Hypothesis 1a, Americans' body surveillance was not significantly different from Belgians' ($p = .10$, $d = .26$) or Russians' ($p = .77$, $d = .10$), nor were Belgian and Russian participants' levels of body surveillance significantly different ($p = .54$, $d = .16$). A one-way ANOVA also revealed a significant effect of nationality on body shame, $F(3, 601) = 9.17$, $p < .001$, $\eta^2 = .04$. In line with Hypothesis 1a, Americans reported higher body shame than Belgians ($p < .001$, $d = .38$), Thais ($p < .001$, $d = .35$), and Russians ($p = .06$, $d = .14$), and body shame did not differ between Belgian and Russian ($p = .10$, $d = .27$), Belgian and Thai ($p = .90$, $d = .09$), or Russian and Thai ($p = .36$, $d = .21$) women.

Self-compassion

Finally, a one-way ANOVA revealed a significant main effect of nationality on self-compassion, $F(3, 601) = 52.97$, $p < .001$, $\eta^2 = .21$. In line with Hypothesis 1b, a post-hoc Tukey's test revealed that Thai participants reported higher self-compassion than all other women (*p*s < .001, *d*s = .76–1.34). Russians reported the second highest

self-compassion, which differed significantly from Belgians (p = .03, d = .35), and Americans (p < .001, d = .64), followed by Belgians who also reported higher self-compassion than Americans (p = .03, d = .31). The results of these comparisons reveal that Americans' higher level of body surveillance and body shame coexists with less self-compassion, whereas the reverse occurred for Thais with lower levels of body surveillance and body shame coexisting with more self-compassion.

Cultural orientation

A one-way ANOVA revealed significant effects of nationality on horizontal individualism, F (3, 601) = 10.15, p < .001, η^2 = .05, vertical individualism, F(3, 601) = 33.81, p < .001, η^2 = .14, horizontal collectivism, F(3, 601) = 10.75, p < .001, η^2 = .05, and vertical collectivism, F(3, 601) = 17.96, p < .001, η^2 = .08. Statistical differences between cultural orientations by nationality are reported in greater detail in the online supplementary material.

Serial mediation model

To test the serial mediation model, full information maximum likelihood was utilized in Mplus (Muthen & Muthen, 2009) to conduct a path analysis testing the hypothesis regarding direct and indirect relations. Factor scores were first calculated based on the metrically invariant items for each construct and used to test the serial mediation model including both direct and indirect paths. Cultural orientations were the predictors, self-compassion was the mediator of the effect of cultural orientations on body surveillance, and body surveillance was the mediator of the effect of self-compassion on body shame (see Figures 1–4). A bootstrap approach (Shrout & Bolger, 2002), which maximizes power while minimizing Type I error rate, was implemented with 10,000 resamples to provide an empirical approximation of sampling distributions of indirect effects to produce confidence intervals (CI) (Williams & MacKinnon, 2008). Indirect effects are significant, indicating mediation if the 95% CI does not contain zero (Table 2; see Mallinckrodt et al., 2006).

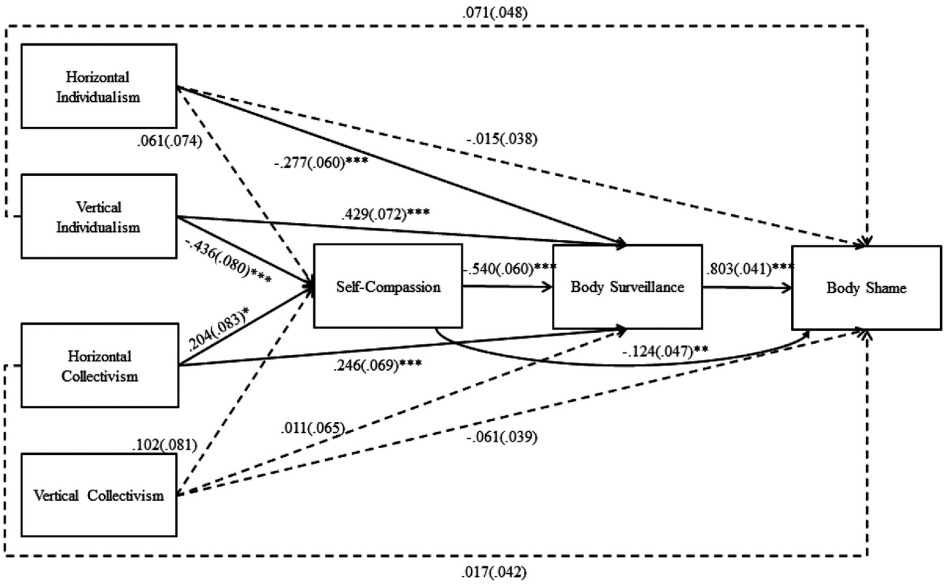

Figure 1. Path analysis of proposed moderated multiple mediation model for sample of American women. ***$p < .001$, ** $p < .01$, * $p < .05$. The number outside the parentheses is the standardized estimate, and the number within the parentheses is the standard error.

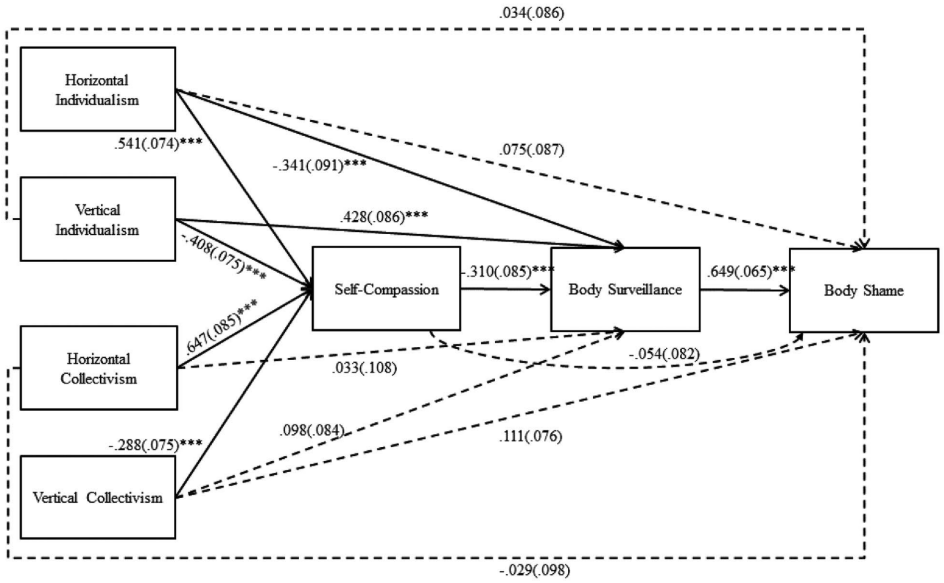

Figure 2. Path analysis of proposed moderated multiple mediation model for sample of Belgian women. ***$p < .001$, ** $p < .01$, * $p < .05$. The number outside the parentheses is the standardized estimate, and the number within the parentheses is the standard error.

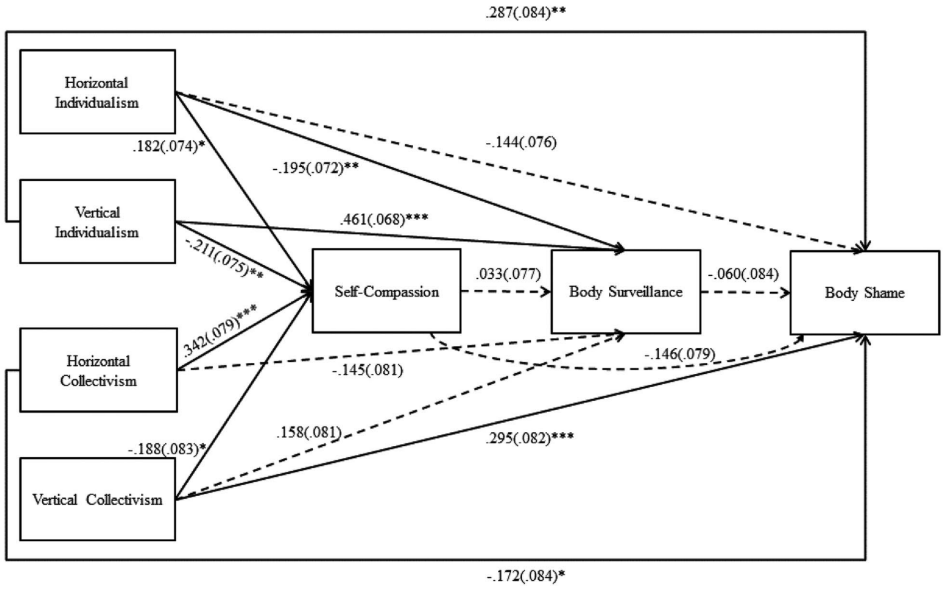

Figure 3. Path analysis of proposed moderated multiple mediation model for sample of Russian women. ***$p < .001$, ** $p < .01$, * $p < .05$, ^ $p = .06$. The number outside the parentheses is the standardized estimate, and the number within the parentheses is the standard error.

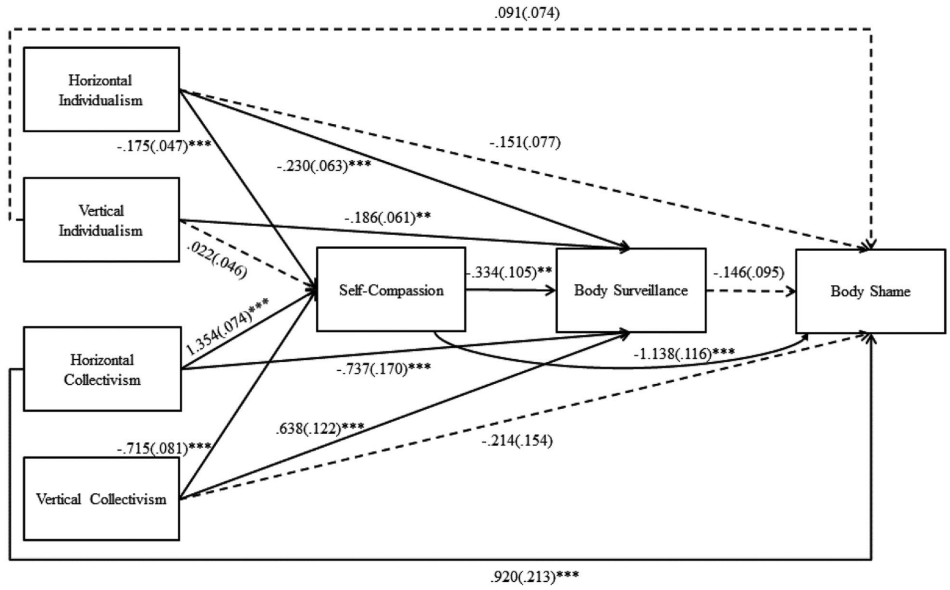

Figure 4. Path analysis of proposed moderated multiple mediation model for sample of Thai women. ***$p < .001$, ** $p < .01$, * $p < .05$. The number outside the parentheses is the standardized estimate, and the number within the parentheses is the standard error.

We conducted a multigroup analysis to test the path model in the four subsamples. All path coefficients were constrained to be equal across groups and this model was compared to the structural model with all paths unconstrained. The unconstrained model was just identified; hence the model fit could not be evaluated. The model with all of the paths constrained showed poor fit to the data ($\chi^2 = 629.04$, CFI = .54, RMSEA = .29), suggesting that the relations between the variables differed significantly between the groups. This implies that the hypothesized model varied across nationalities; we therefore further focus on country-specific effects. Proportions of variance explained by the model differed by nationality for self-compassion (American = 28%, Belgian = 49%, Russian = 21%, Thai = 77%), body surveillance (American = 55%, Belgian = 43%, Russian = 29%, Thai = 60%), and body shame (American = 84%, Belgian = 53%, Russian = 25%, Thai = 44%).

Unique direct relations

We first examined each of the hypothesized direct relations between variables in each country. In partial support of Hypothesis 2a, vertical cultural orientations predicted body surveillance and shame for some women. In particular, more vertical individualism was related to greater body shame for Russian women, and greater body surveillance for American, Belgian, and Russian women, but less body surveillance for Thai women. More vertical collectivism, however, was related to greater body shame for Russian women, and greater body surveillance for Thai women. In line with Hypothesis 2b, collectivist cultural orientation was predictive of self-compassion. While more horizontal collectivism predicted more self-compassion for all women, more vertical collectivism predicted less self-compassion for Belgian, Russian, and Thai women. Supporting Hypothesis 2 c, greater self-compassion was associated with lower body surveillance for American, Belgian and Thai women and lower body shame for American and Thai women. Finally, in partial support of Hypothesis 2d, more body surveillance was related to greater body shame for American and Belgian, but not Russian or Thai women.

Table 2. Bootstrap analysis of magnitude and significance of indirect effects of cultural orientation by nationality.

			American				*Belgian*				*Russian*				*Thai*			
			B	*SE*	*Lower Bound*	*Upper Bound*	*B*	*SE*	*Lower Bound*	*Upper Bound*	*B*	*SE*	*Lower Bound*	*Upper Bound*	*B*	*SE*	*Lower Bound*	*Upper Bound*
HI	Comp. & Surv.	Shame	−.042	.059	−.159	.068	**−.098**	**.039**	**−.193**	**−.038**	.000	.001	−.004	.001	−.008	.007	−.028	.001
	Comp.	Surv.	−.033	.047	−.129	.054	**−.072**	**.026**	**−.131**	**−.030**	.004	.011	−.015	.032	**.047**	**.019**	**.017**	**.093**
	Comp.	Shame	−.012	.019	−.061	.017	−.026	.050	−.126	.073	−.014	.010	−.043	.000	**.194**	**.055**	**.093**	**.310**
	Surv.	Shame	**−.350**	**.089**	**−.534**	**−.187**	**−.199**	**.062**	**−.330**	**−.084**	.006	.009	−.008	.028	.033	.025	−.005	.093
VI	Comp. & Surv.	Shame	**.310**	**.093**	**.149**	**.513**	**.079**	**.033**	**.031**	**.162**	.000	.001	−.001	.005	.001	.003	−.002	.010
	Comp.	Surv.	**.247**	**.075**	**.117**	**.413**	**.058**	**.022**	**.023**	**.111**	−.006	.014	−.039	.021	−.006	.013	−.034	.018
	Comp.	Shame	**.089**	**.042**	**.026**	**.199**	.021	.041	−.057	.106	.018	.013	.000	.053	−.023	.050	−.119	.079
	Surv.	Shame	**.564**	**.112**	**.363**	**.808**	**.268**	**.072**	**.144**	**.429**	−.016	.022	−.062	.025	.025	.021	−.004	.078
HC	Comp. & Surv.	Shame	**−.092**	**.042**	**−.182**	**−.017**	**−.245**	**.094**	**−.478**	**−.101**	.000	.001	−.005	.001	.063	.049	−.010	.185
	Comp.	Surv.	**−.073**	**.033**	**−.142**	**−.013**	**−.180**	**.063**	**−.325**	**−.076**	.006	.016	−.025	.038	**−.354**	**.116**	**−.585**	**−.128**
	Comp.	Shame	**−.026**	**.016**	**−.070**	**−.004**	−.065	.126	−.321	.177	−.020	.013	−.054	.000	**−1.471**	**.180**	**−1.828**	**−1.127**
	Surv.	Shame	**.206**	**.078**	**.051**	**.354**	.040	.118	−.181	.278	.004	.006	−.004	.022	.103	.072	−.017	.276
VC	Comp. & Surv.	Shame	−.059	.046	−.158	.024	**.059**	**.026**	**.021**	**.127**	.000	.001	−.001	.004	−.039	.030	−.117	.005
	Comp.	Surv.	−.047	.036	−.124	.019	**.044**	**.018**	**.016**	**.088**	−.005	.013	−.036	.018	**.219**	**.075**	**.079**	**.371**
	Comp.	Shame	−.017	.015	−.057	.004	.016	.032	−.039	.090	.016	.013	.000	.051	**.908**	**.136**	**.662**	**1.201**
	Surv.	Shame	.012	.074	−.140	.154	.065	.053	−.034	.178	−.005	.009	−.032	.007	−.104	.072	−.264	.023

HI = horizontal individualism, VI = vertical individualism, HC = horizontal collectivism, VC = vertical collectivism, Comp. = self-compassion, Surv. = body surveillance, Shame = body shame. Confidence intervals that do not contain zero are considered significant (Mallinckrodt et al., 2006).

Indirect effects

We also examined whether cultural orientation indirectly predicts body shame through a serial mediation model with self-compassion as the first mediator and body surveillance as the second mediator (Hypothesis 3). All indirect effects can be found in Table 2. Partially supporting Hypothesis 3, body shame was indirectly increased among American and Belgian women who endorsed more vertical individualism. Furthermore, body shame was indirectly increased among Belgian women who endorsed more vertical collectivism. Endorsement of both vertical individualism and vertical collectivism indirectly increased body shame through less self-compassion and more body surveillance. The indirect effect of cultural orientations on body shame including both self-compassion and body surveillance did not emerge for Russian or Thai women. Ultimately, body shame was also found to be indirectly decreased for Belgian women who endorsed more horizontal individualism, and for American and Belgian women who endorsed more horizontal collectivism.

Moderated relations

Finally, we examined a complementary moderation model testing whether self-compassion emerged as a buffer of the effect of body surveillance on body shame among women from each nationality, regardless of cultural orientation (Hypothesis 4). To do so, we considered body surveillance as the predictor, self-compassion and nationality as moderators, and body shame as the outcome. Results are depicted in Figure 5. First, the relation between body surveillance and body shame was qualified by self-compassion (B = −.276, SE = .051, $p < .001$, 95%CI [−.375, −.177]). While women low in self-compassion experienced greater body shame as a result of more body surveillance, for women high in self-compassion the association between body surveillance and body shame was significantly diminished. Second, the three-way interaction with nationality as the second moderator showed significant differences between the nationalities. As indicated in Figure 5, the interaction was stronger in the US (B = −.216, SE = .082, $p = .009$, 95%CI [−.378; −.055]) and Russia (B = −.224, SE = .139, $p = .109$, 95%CI [−.499; −.051]) as compared to Thailand (B = −.125,

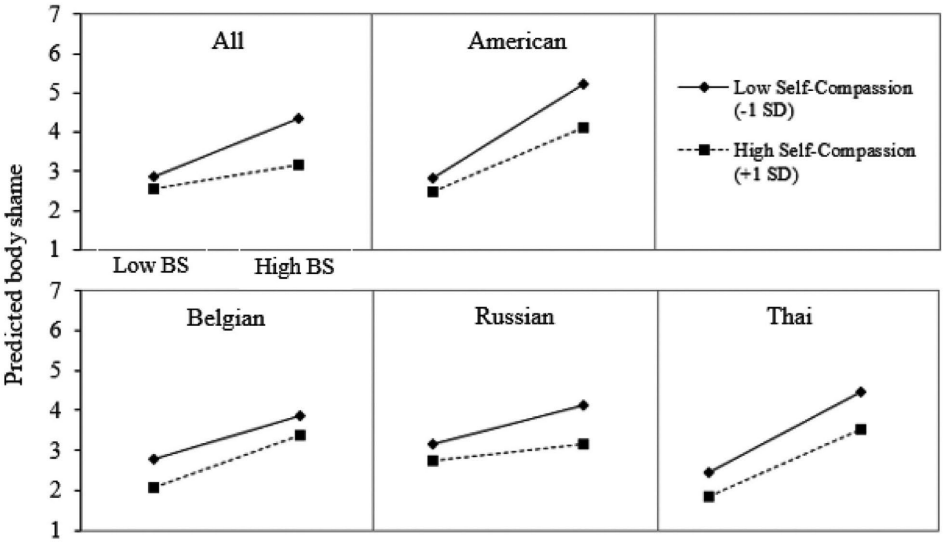

Figure 5. Predicted body shame by BS (body surveillance; low = −1 SD, high = + 1 SD) for each country with low (−1 SD; solid lines) and high (+1 SD; dashed lines) self-compassion.

SE = .119, p = .296, 95%CI [−.360; .110]) and Belgium (B = .079, SE = .134, p = .557, 95%CI [−.186; .344]). In sum, these results are consistent with our hypotheses suggesting that self-compassion may mitigate the negative impact of body surveillance on body shame and evidenced the positive effect self-compassion on body image concerns.

Discussion

Research examining self-objectification from a Western perspective is flourishing; however, little is known about self-objectification as a function of culture. The current work examined cultural orientation and self-compassion, as potential predictors of self-objectification across cultures. We stepped outside the typical objectification participant samples by surveying women from the United States, Belgium, Russia, and Thailand who varied in the extent they endorsed cultural orientations of vertical/horizontal individualism vs. collectivism. In line with a plethora of previous research (e.g. McKinley & Hyde, 1996), we found that increased body surveillance was related to increased body shame for American and Belgian women. Moreover,

and consistent with previous work (Gervais et al., 2015), several cultural orientations increased body shame and body surveillance, although differences emerged across nationalities. While these findings replicate previously identified detrimental effects of body surveillance, in a hopeful light of potential interventions for this relation, we found a moderating effect of self-compassion on the relation between body surveillance and body shame.

The role of cultural orientation in body image

Partially consistent with hypotheses, our results indicated that greater endorsement of VI was related to body surveillance for American, Belgian, and Russian women; however, this relation occurred in the opposite direction for Thai women. Interestingly, we found that HI predicted decreased body surveillance for all women. These results suggest the role of culture in self-objectification may be more nuanced than originally thought. Although we commonly consider culture in terms of individualistic versus collectivistic, the horizontal versus vertical dimension of individualism plays an important role. In line with Gervais et al. (2015), people in highly hierarchical societies (i.e. vertical dimension) may engage in social comparison to evaluate their social position. Given that appearance is a cue of social ranking, this may increase focus on one's own physical appearance. Furthermore, in a collectivistic culture (i.e. Thailand), it is more important to be attentive to one's appearance to fit well into the collective whereas in individualistic culture it is to distinguish oneself. Depending on one's cultural orientation, one may surveil oneself for different reasons. In order to further test the cultural tenets of objectification theory, we invite other scholars to test these cultural differences in the light of possible factors such as social comparison, global perspective, power orientation, and more frequent experiences of sexual objectification.

Body surveillance and body shame across cultures

While scholars suggest that sexual objectification, and by extension, self-objectification is primarily a Western phenomenon (e.g. Loughnan et al., 2015), recent studies reveal that body surveillance and body shame also occur in Non-Western countries (e.g. Crawford et

al., 2009). Our survey demonstrated that body surveillance and body shame are prevalent in the United States, Belgium, Russia, and Thailand. Thai women reported less body shame and surveillance than American, Belgian, and Russian women, and although Americans reported the greatest engagement in body surveillance, this level was not significantly different from Belgians' or Russians' body surveillance. Moreover, we observed that Americans reported higher body shame than all other women who reported similar levels.

In sum, the cultural differences in body surveillance and body shame suggest self-objectification is widespread across cultures, yet most predominant in American society where examples of instrumentalization of bodies are conspicuous. Importantly, the American mass media imposes appearance norms by conveying sexualized, idealized, and stereotyped images, which then seep into other cultures, including Thailand (Chaipraditkul, 2013), Belgium (e.g. Wollast et al., 2018), and Russia (Arina & Martynov, 2009). Taken together, these results suggest that the mental health of women across the world who suffer from an unfavorable body image demands urgent attention.

The moderating effect of self-compassion

Previous findings suggest self-compassion has a positive impact on mental health and body image (e.g. Liss & Erchull, 2015; Wollast et al., 2019; Wollast et al., 2020). We tested a complementary moderation model and found, consistent with hypotheses, that self-compassion moderated the relation between body surveillance and body shame in the pooled sample. While women low in self-compassion experienced greater body shame as a result of more body surveillance, for women high in self-compassion the association between body surveillance and body shame was significantly diminished. In other words, being kind with oneself helps women reduce feelings of shame generated by body surveillance. Interestingly, interaction effects were strongest in the US, followed by Russia, and absent in Belgium and Thailand. Given that the US is a particularly individualistic society, in which body surveillance and body shame are socialized among women from a young age, it was not surprising that self-compassion had the strongest effect on the relation between engaging in body surveillance and feeling body shame for this subsample. This finding is consistent with other

studies evidencing benefits of self-compassion on body image in the United States (e.g. Liss & Erchull, 2015) and consistent with Wollast et al. (2019) who did not find evidence of the same interaction effect among women living in Belgium.

Our promising finding reinforces the literature and suggests self-compassion can have a protective effect on women's mental health by alleviating harmful consequences generated by toxic environments where sexual objectification is prevalent (e.g. through self-kindness versus self-judgment, common humanity versus isolation, mindfulness versus overidentification, through resilience, see Leys et al., 2020 or sexual subjectivity, see De Wilde et al., 2020). Recent studies have revealed that self-compassion interventions indeed have a positive influence on mental health and concerns about body image (e.g. Albertson et al., 2015). For instance, Albertson et al. (2015) found that women who meditated for three weeks experienced reductions in body dissatisfaction, body shame, and contingencies of self-worth based on appearance, as well as gains in self-compassion and body appreciation compared to the control group even three months later.

Limitations and future directions

Although this study expands our understanding of how culture shapes women's self-objectification, this study is not without limitations. First, several measures did not reach commonly used thresholds of internal consistency. Since Cronbach alpha values are very sensitive to the number of items (Cortina, 1993; Schmitt, 1996), this occurred for smaller scales (i.e. cultural orientation). Furthermore, low reliability mostly seems to be culture-specific (i.e. Thai and Russian samples) and appears to be low or below the conventional threshold in other recent cross-cultural studies (e.g. in Germany and Poland, Tang et al., 2016). This raises the question of whether such constructs can meaningfully be comparable across cultures. Given that culture is an elusive object – cultural groups are changeable and mutable entities that defy essentialization, it is difficult to provide a straightforward answer to this question. Although measurement invariance analysis ensured that partial scalar invariance was established, allowing us to compare measures across groups, full scalar was not, showing that many items were not invariant across cultures. Importantly,

the hypothesized model was found to vary as a function of nationality, suggesting that there are larger forces such as cultural norms or developmental differences influencing the way that participants engaged in body surveillance and felt resulting body shame. Examining cultural differences is a major strength of this work, but the nuanced intricacies specific to the cross-cultural samples added limitations. For example, body surveillance as measured by the items on McKinley and Hyde (1996) Objectified Body Consciousness Scale might not capture the type of body surveillance that triggers shame in Eastern cultures. This scale is heavily based on interpersonal comparisons, whereas shame in Eastern cultures derives specifically from the image individuals project on their audience. For instance, while a lack of hygiene is shameful in Eastern cultures for disrespecting other people, poor hygiene within Western cultures is viewed as a sign of lacking self-respect. According to some religions and cultures, "*the concept of dirt is not strictly visual, but reflects a wider meaning which refers to interior and exterior purity. [. . .] For instance, hand cleansing as a measure of preventing the spread of disease is clearly in harmony with the fundamental Hindu value of non-injury to others (ahimsa) and care for their well-being (daya)*." (World Health Organization, 2009). In other words, the type and process of experiencing body shame as a result of body surveillance might differ across cultures. Future work should explore new measures and facets of body surveillance and shame to accurately capture manifestations of self-objectification as they may vary across countries.

Second, future research may benefit from experimental studies manipulating cultural orientation mind-sets and measuring self-compassion and self-objectification. Inspired by Kramer et al. (2007), participants could be exposed to objectified images that would be supposedly selected either on the preferences of other participants (i.e. collective) or on their own preferences (i.e. individual). If manipulated mind-sets have the ability to influence women, interventions aimed at inducing cultural orientation mind-sets could be advantageous for reducing women's self-objectification.

Third, participants were mostly students who differed little in terms of sexual orientation, marital status, and highest level of education completed. Interestingly, we found a positive correlation between education level and self-compassion on the whole sample, but

only among Russian women. This is consistent with research evidencing that self-compassion and education level were each significantly negatively correlated with negative affect (Wren et al., 2012). Interestingly, Stellar et al. (2012) found that lower-class individuals reported higher trait, state, and physiological levels of compassion, as compared to upper-class counterparts suggesting that compassion (for others) is not randomly distributed across social classes. In this context, future research would benefit from expanding the samples to include more diverse women (i.e. in education level, SES, age, nationality) with potential for greater variability in self-compassion, body image, and cultural orientation endorsement.

Ultimately, the present research evidences that in cross-cultural comparisons, multigroup measurement invariance testing is essential. In the current work, we conducted within-country analyzes, allowing us to test the generality of our proposed model within and across four distinct cultural contexts. Even though confirmatory factor analyses indicated adequate model fit, several items had variant factor loadings across groups. We view this as an important contribution; however, crucial next steps should involve the development and validation of new scales that achieve stronger measurement invariance to better explain group-level differences. As a whole, measurement issues suggest the complexity of conducting cross-cultural research, implying the current work offers a useful starting point, but only a glimpse into the larger question regarding how self-objectification operates within cultures.

Conclusion

Self-objectification and its consequences are not exclusively a Western phenomenon. The current work revealed that women's cultural orientation indirectly predicts feelings of body shame through body surveillance and self-compassion. Importantly, women's perspectives of their social environments, and more specifically their cultural orientations, impinges on their body monitoring. And moreover, self-compassion can mitigate the negative impact of self-objectification on body shame. Together these findings illuminate an important pathway for future interventions to reduce the consequences of

self-objectification for women, because after all, "The worst loneliness is to not be comfortable with yourself" (Mark Twain).

Notes

1. Online supplementary material can be found here: https://osf.io/f29sw/
2. **HI:** α_{All} =.71; $\alpha_{American}$ =.72; $\alpha_{Belgian}$ =.79; $\alpha_{Russian}$ =.62; α_{Thai} =.63. **VI:** α_{All} =.72; $\alpha_{American}$ =.68; $\alpha_{Belgian}$ =.78; $\alpha_{Russian}$ =.73; α_{Thai} =.63. HC: α_{All} =.64; $\alpha_{American}$ =.69; $\alpha_{Belgian}$ =.67; $\alpha_{Russian}$ =.65; α_{Thai} =.71. **VC:** α_{All} =.66; $\alpha_{American}$ =.75; $\alpha_{Belgian}$ =.80; $\alpha_{Russian}$ =.64; α_{Thai} =.61. **Body surveillance:** (α_{All} =.84; $\alpha_{American}$ =.88; $\alpha_{Belgian}$ =.80; $\alpha_{Russian}$ =.82; α_{Thai} =.79. **Body shame:** α_{All} =.84; $\alpha_{American}$ =.90; $\alpha_{Belgian}$ =.88; $\alpha_{Russian}$ =.78; α_{Thai} =.72. **Self-compassion:** α_{All} =.83; $\alpha_{American}$ =.85; $\alpha_{Belgian}$ =.82; $\alpha_{Russian}$ =.69; α_{Thai} =.79.
3. Unless otherwise indicated, analyses were conducted using the average scores of each measure.

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Supplementary material (4 pp) follows.

Supplementary material

Additional sociodemographic characteristics

There was variation in self-reported ethnicity, highest level of education completed, sexual orientation, and marital status (see Table below).

	American	Belgian	Russian	Thai
Ethnicity				
White	86%	93%	96%	1%
Black	5%	1%	1%	0%
Hispanic	6%	1%	0%	0%
Asian	1%	0%	1%	99%
Middle-Eastern	0%	2%	1%	0%
Other ethnicity	2%	3%	1%	0%
Education level completed				
High school diploma or less	91%	65%	12%	19%
Bachelor's degree	5%	28%	45%	76%
Master's degree or more	4%	7%	43%	5%
Sexual orientation				
Heterosexual	78%	83%	88%	81%
Bisexual	16%	12%	9%	8%
Lesbian	1%	3%	0%	4%
Other or no response	5%	2%	3%	7%
Marital status				
Single	74%	59%	86%	94%
In a committed relationship, not married	22%	40%	4%	3%
Married	3%	1%	4%	3%
Divorced	1%	0%	6%	0%

Measurement invariance analyses

Cultural orientation measurement invariance. Given the small number of items in the cultural orientation subscales, we tested invariance models including measures of HI with VI, and HC with VC in which the two constructs were correlated with each other. For individualistic measure items, we tested a model with a single factor, in which one poorly loaded item was dropped (item 4). This model showed good fit to the data (χ^2 = 93.09, *df* = 52, CFI = .957, RMSEA = .072, SRMR = .062). Full metric invariance was established across the four nationalities (ΔCFI = .003, ΔRMSEA = .013). Because establishing scalar invariance is essential

to making comparisons between nationalities and full scalar invariance was not established (ΔCFI = .164, ΔRMSEA = .051), we freed intercepts of three of the seven items that showed the most discrepancies across nationalities (items 1, 2, and 6), until the difference between the model with unconstrained intercepts and the constrained intercepts became negligible (ΔCFI = .005, ΔRMSEA = .001). Similarly, for collectivistic items we tested a model with a single factor, excluding a low loading item (item 16), and including a correlation between two items (items 11 and 12), which revealed adequate model fit (χ^2 = 99.10, *df* = 48, CFI = .942, RMSEA = .084, SRMR = .061). Full metric invariance for collectivistic items was reached (ΔCFI = .01, ΔRMSEA = .001), but full scalar invariance was not (ΔCFI = .466, ΔRMSEA = .115). As a result, we freed three of the seven items that showed the most discrepancies across nationalities (items 10, 12, and 14), until the difference between the model with unconstrained intercepts and constrained intercepts became negligible (ΔCFI = .011, ΔRMSEA = .004).

Body surveillance and body shame measurement invariance. We first tested measurement invariance for the measure of body surveillance using a single factor model with correlations added between items (items 1, 5, 6, and 7), which revealed adequate model fit (χ^2 = 140.42, *df* = 56, CFI = .944, RMSEA = .100, SRMR = .048). Full metric invariance was achieved (ΔCFI = .008, ΔRMSEA = .009); however because full scalar invariance was not reached (ΔCFI = .064, ΔRMSEA = .023), five of the eight items that showed the most discrepancies between nationalities (items 1, 3, 4, 5, and 7) were freed until the difference between the model with unconstrained intercepts and constrained intercepts became negligible (ΔCFI = .011, ΔRMSEA = .014). The process was repeated for the measure of body shame, revealing adequate model fit for a single factor model with two correlations (items 2 with 3 and items 1 with 8) added, (χ^2 = 204.06, df = 72, CFI = .926, RMSEA = .110, SRMR = .050). While full metric invariance was reached (ΔCFI = .017, ΔRMSEA = .003), full scalar invariance was not (ΔCFI = .113, ΔRMSEA

= .038), so three of the eight items showing the most discrepancies between nationalities (items 4, 5, and 6) were freed to vary until the difference between the unconstrained and constrained intercept models became negligible (ΔCFI = .001, ΔRMSEA = .002).

Self-compassion measurement invariance. To determine whether we could make comparisons of self-compassion scores based on nationality we again conducted a test of measurement invariance. We first tested the self-compassion items, with one low loading item excluded (item 10), and including correlations between multiple items (items 1, 2, 3, 6, 7, 8, 9, 11 and 12), revealing adequate model fit (χ^2 = 244.39, *df* = 104, CFI = .921, RMSEA = .094, SRMR = .069). Full metric invariance was achieved (ΔCFI = .004, ΔRMSEA = .008); however because full scalar invariance was not reached (ΔCFI = .104, ΔRMSEA = .030), five of the eleven items that showed the most discrepancies between nationalities (items 1, 3, 4, 9, and 12) were freed until the difference between the model with unconstrained intercepts and constrained intercepts became negligible (ΔCFI = .014, ΔRMSEA = .003).

Measurement invariance conclusions. In sum, partial scalar invariance was established for all measures. Because measurement invariance factor scores were calculated as proxies for latent variables within Mplus for the path analysis (Brown, 2015), prior to using the calculated factor scores in subsequent analyses, the degree of factor score indeterminacy was evaluated in which validity coefficients of .80 or greater are considered an acceptable level of factor score determinacy (Gorsuch, 1983). An examination of the validity coefficients revealed that the factor score determinacies were all within acceptable ranges for the American (≥ .89), Belgian (≥ .90), Russian (≥ .81), and Thai (≥ .80) samples, suggesting the use of factor scores as proxies for latent variables within the path modelling was appropriate.

Mean ratings for cultural orientation across cultures

A one-way ANOVA revealed significant effects of nationality on horizontal individualism, $F(3, 601) = 10.15$, $p < .001$, $\eta^2 = .05$, vertical individualism, $F(3, 601) = 33.81$, $p < .001$, $\eta^2 = .14$, horizontal collectivism, $F(3, 601) = 10.75$, $p < .001$, $\eta^2 = .05$, and vertical collectivism, $F(3, 601) = 17.96$, $p < .001$, $\eta^2 = .08$. A post-hoc Tukey's test revealed that Russian and Thai ($p = .88$, $d = .09$), Russian and American ($p = .10$, $d = .28$), and American and Thai ($p = .39$, $d = .19$) women reported similarly greater horizontal individualism than Belgian (compared to: American $p = .04$, $d = .25$, Russian $p < .001$, $d = .52$, and Thai $p = .001$, $d = .43$) women. Furthermore, Russians reported the greatest vertical individualism (compared to American $p = .00$, $d = .31$, Belgian $p < .001$, $d = 1.03$, and Thai $p < .001$, $d = .71$ women), followed by Americans (compared to Belgian $p < .001$, $d = .79$ and Thai $p = .002$, $d = .44$ women), Thais (compared to Belgian $p = .008$, $d = .36$ women), and finally Belgians. Belgians and Americans ($p = .38$, $d = .19$), Belgians and Thais ($p = .88$, $d = .09$), and Americans and Thais ($p = .83$, $d = .10$) reported similarly greater horizontal collectivism than Russians (compared to Americans $p = .002$, $d = .40$, Belgians $p < .001$, $d = .60$, and Thais $p < .001$, $d = .49$). Finally, Thai participants reported greater vertical collectivism than Americans, Belgians, and Russians (ps $< .001$, d =.62-.77), who reported similar levels of endorsement (Americans and Belgians $p = .70$, $d = .12$, Americans and Russians $p = .99$, $d = .03$, and Belgians and Russians $p = .54$, $d = .15$).

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