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Menstrual Knowledge and Taboo TV Commercials:
Effects on Self-Objectification among Italian and Swedish Women

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Abstract

Despite menstruation being a physiological phenomenon in women's life, social research has highlighted that there are still many taboos, also conveyed by advertising, which prevent an open discourse on the topic and can have negative impacts on women's well-being. The present study examined the influence of the exposure to existing TV advertisements for sanitary napkins depicting menstruation as a taboo on self-objectification in women from Italy ($n = 160$) and Sweden ($n = 159$). To do so, we also investigated the moderating role of menstrual knowledge in this relationship. Our findings showed that in the Italian sample, exposure to the taboo TV commercial led to more self-objectification especially for participants with lower knowledge of menstruation. These effects did not occur for their Swedish counterparts, showing no differences in self-objectification when women were exposed to the taboo advertisement. The present results are discussed in light of cultural differences in sexual and menstrual education between the two countries. Theoretical and practical implications are drawn.

Keywords: self-objectification, menstrual knowledge, advertising, menstrual taboos, TV commercial, Italy, Sweden

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Television advertisements are a considerably powerful vehicle for the transmission of social representations of culturally acceptable and legitimate images and practices that reinforce gender-based stereotypes and affect women's well-being in general (Cialdini & Trost, 1998; Eisend, 2010; Grabe, Ward, & Hyde, 2008). Objectification Theory has been used as a theoretical framework to capture this phenomenon, emphasizing that women who adhere to cultural representations and normative body standards internalize these messages and objectify themselves (Fredrickson & Roberts, 1997). Along these lines, beauty standards are adopted as lenses for self-evaluation, and conformity to this ideal becomes a measure of self-worth (McKinley & Hyde, 1996).

However, self-objectification experience is not limited to feelings of shame and inadequacy regarding the internalization of physical appearance norms (Tiggemann & Boundy, 2008). Instead, it has been related to other negative attitudes toward feminine reproductive body functions (e.g., breastfeeding, childbearing, and menstruation; Johnston-Robledo, Sheffield, Voigt, & Wilcox-Constantine, 2007), showing consistently that women with a higher tendency to objectify themselves also tend to experience their menstrual cycle as bothersome and/or shameful (Roberts, 2004).

Whereas this correlation has already been the focus of a number of studies (e.g., Johnston-Robledo et al., 2007), no other known experimental evidence exists showing that the media representation of menstruation as a taboo phenomenon might lead women to experience self-objectification, compared to situations in which the same phenomenon is openly targeted. To address these questions, we conducted one experimental study in which we assessed self-

objectification after exposing women to an existing TV commercial of sanitary napkins, depicting menstruation as a taboo or a mentionable phenomenon according to the experimental condition. In addition, we examined a potential moderator (i.e., menstrual knowledge), and we conducted a cross-country comparison between Italian and Swedish women in order to understand the generalizability and boundary conditions of this relationship.

Menstrual Taboo and Self-Objectification

Although menstruation is a biological event, researchers emphasized that this phenomenon is permeated by many stereotypical expectations and taboos (Kowalski & Chapple, 2000; Marván, Ramírez-Esparza, Cortés-Iniestra, & Chrisler, 2006). Historically, menstrual discourse was exploited as a means of patriarchal control (Delaney, Lupton, & Toth, 1988), resulting in a form of actual stigmatization of women who were considered impure, dangerous, and reckless during their menstrual period and, as such, restricted from social and public life (Patterson, 2014). By contrast, in the 20th century, the debate about the menstrual cycle reflected a broader tendency to medicalize women's experience, starting with an emphasis in sanitation and depicting menstruation as a "hygienic crisis" (Whisnant & Zegans, 1975, p. 809).

Past research has highlighted how the menstrual taboo is internalized at an early age, assuming three main different connotations: concealment, activity, and communication (Williams, 1983). Whereas the activity taboo is directly related to women's behavior by prescribing allowed practices during menstruation (e.g., restrictions in sexual and physical activities, Oxley, 1998), the other two taboos reflect the need to keep it secret. Indeed, the concealment taboo is directly linked to the idea that menstruation is shameful and should be kept private and undisclosed (Laws, 1990), whereas the communication taboo restrains women from talking and sharing information about menstruation with others (Kissling, 1996). In fact,

conversation regarding menstruation is generally considered acceptable when it focuses on complaints, mocks or commercial products (Kissling, 2006). Concurrently with the impossibility to openly talk about the topic, these three taboos reinforce a mechanism that compromises young women's knowledge of the phenomenon, reinforcing ignorance, negative attitudes toward it, and shame, which in turn fuels the transmission of the taboo (White, 2013).

Shifting attention from how these representations are transmitted toward their subjective implications, research demonstrates that considering menstruation a taboo topic has meaningful consequences for women in terms of their experiences with their bodies, well-being, and health (Grose & Grabe, 2014). First of all, although the initial pioneering surveys on attitudes toward menstruation had been conducted in the early 1980s (World Health Organization, 1981; Tampax Report, 1981), even more recent empirical studies confirm a similar trend, showing that negative attitudes are still predominant and that women feel ashamed of their period (Çevirme, Çevirme, Karaoğlu, Uğurlu, & Korkmaz, 2010; Johnston-Robledo et al., 2007; Marván, Islas, Vela, Chrisler, & Warren, 2008). Furthermore, the experience of shame of the menstrual cycle is associated with riskier sexual behavior and more reluctance to seek medical help from health professionals for menstrual symptoms (Garside, Britten, & Stein, 2008; Schooler, Ward, Merriwether, & Caruthers, 2005).

It thus appears clear that the perception of menstruation as a stigmatizing taboo has many overlapping points with the self-objectification process. Together with a feeling of shame toward one's own body, self-surveillance and control are elements of the objectified body consciousness (McKinley & Hyde, 1996). Menstruation is a condition that requires women to engage in surveillance and control practices to keep it hidden from others. In response to this shame, women may develop a motivation to be embarrassed of the reproductive functions that make

them unappealing as sexual objects (Roberts & Waters, 2004). Indeed, the experience of self-objectification is consistently correlated with more negative attitudes across several studies. In general, women with a higher tendency to self-objectify report the most extreme emotional reactions toward menstruation (Johnston-Robledo et al., 2007; Roberts, 2004), such as the desire to not have it (Johnston-Robledo, Ball, Lauta, & Zekoll, 2003) or explicit support for its pharmacologic suppression (Andrist, 2008). In this line, a study conducted by Grose and Grabe (2014) identified self-objectification as a key experience that indirectly restrains women to purchase menstrual products that require comfort with the body (e.g., the menstrual cup) by affecting their attitudes toward menstruation.

Given these negative feelings and experiences associated with menstruation, building personal knowledge on the topic does not follow a straight path for all women. In the next two sections, we will discuss how taboo permeates the most common sources of menstrual knowledge and how public institutions and policies deal with the issue through sexual education in Italy and Sweden.

Taboos in Menstrual Knowledge Acquisition

Women's experience of their menstrual cycle is deeply affected by the ways this topic is addressed in both familiar and broader sociocultural contexts (Johnston-Robledo & Stubbs, 2013; Marván & Trujillo, 2009). The quality and level of detail of the sexual and menstrual education women receive can affect their attitudes toward menstruation (Rembeck & Gunnarsson, 2004). Additionally, poor knowledge of menstruation has repercussions for women's health. For instance, women who are not adequately aware about the menstrual cycle are more likely to start their sexual activities earlier, which constitutes a risk factor for higher vulnerability to sexually transmitted infections and unplanned pregnancies (White, 2013).

Generally, mothers are the principal source of information and attitudes toward menstruation (Beausang & Razor, 2000). This becomes particularly critical when considering that mothers can also be subject to menstrual taboo and inadequate knowledge, together with general discomfort about these issues (Costos, Ackerman, & Paradis, 2002; Gillooly, 2004). Although mothers play a key role in providing information, young women also learn about menstruation from other distal and authoritative sources (e.g., physicians, magazines, sacred texts, movies). Among them, sanitary industries and menstrual TV commercials are the most prevalent and widely disseminated (Hoerster, Chrisler, & Rose, 2003). Nevertheless, the way in which menstruation has been depicted by popular media reflects the prior mentioned taboos by emphasizing the dimensions of secrecy and need for sanitation. Sanitation industries may also transmit informative materials that do not always present adequate knowledge of menstruation, and even more recent educational materials highlight the need to avoid talking about it openly (Erchull, Chrisler, Gorman, & Johnston-Robledo, 2002).

Young women also get in touch with the topic from other sociocultural sources. In this regard, advertisements are a popular form through which accepted norms on menstruation are conveyed (Erchull, 2013). Recent research shows that communication about menstruation on TV commercials may bolster the taboo, capturing women's experience of shame and fueling stigmatizing and inaccurate stereotypical knowledge about menstruation. For example, an analysis of media use of taboo-related words showed that advertisements of menstrual products reinforce the secrecy and taboo regarding menstruation (Thomas, 2007). Moreover, they highlight the qualities of the product that mostly help the consumers to avoid shame and embarrassment (Raftos, Jackson, & Mannix, 1998), to keep fresh (Johnston Robledo & Chrisler,

2013), to maintain femininity (Simes & Berg, 2001), and to deal with unavoidable symptoms (Cortés-Iniestra, Garduño, & Lama, 2004).

Instead of explicitly targeting women's shame and embarrassment, menstrual advertisements convey taboos in more subtle ways. One popular strategy employed from early ads focuses merely on the characteristics of the product and not on the psychological experience of the target. Sanitary napkins are accurately described in scientific terms and with a professional tone, and the technical aspects that make the product worth purchasing are emphasized (Merskin, 1999). Indeed, some ads present situations that do not seem to have any direct relation with the product (Del Saz-Rubio & Pennock-Speck, 2009) and that minimize any connection with bleeding both in the explicit contents of discussion and through other indirect ads features (e.g., making use of symbols, euphemisms, blue liquid instead of a blood-like one, and prevalence of white color in the environment and clothes; Thomas, 2008). Overall, these commercial strategies that emphasize concealment may actually reinforce the taboo and myths around menstruation, further generating confusion in young women who cannot rely on first-hand experience.

Sexual Education in Italy and Sweden

Attitudes toward reproductive events and menstruation are influenced by cultural representations and vary significantly across different countries (Hoerster et al., 2003; Marvàn & Trujillo, 2009). Italy and Sweden are two countries that traditionally differ in their approach to sexual education and gender equality. In the European context, Sweden is considered as a liberal country when it comes to issues of body and sexuality. Indeed, according to the Gender Equality Index (2012), a composite indicator introduced by the World Economic Forum (2014) with the purpose of capturing the extent of gender-based disparities, Sweden ranks first as the most

gender-egalitarian country. On the other hand, Italy is toward the bottom of the list, ranking 21st among all 28 European countries.

The two countries also differ in their national policies regarding sexual education. In Italy, there have been many attempts across the years to introduce mandatory school programs. However, they failed at being approved and, to date, sexual education is not formally regulated at a national level (Beaumont, Maguire, & Schulze, 2013). In fact, the Italian debate on sexual education has been strongly influenced by the Catholic Church and conservative political forces (Wanrooij, 2009). Although some Italian schools do provide minimum sexuality education programs designed for 14–19 year-old students, the contents of these lessons are usually discussed in biological terms and presented in a formal way. In contrast, Sweden has a long tradition of sexual education; it was the first European country to establish school-based lessons, introducing mandatory attendance in the school system in 1955 (Beaumont et al., 2013; Löfgren-Mårtenson, 2012). This education begins at an early age, with teachers openly answering pupils' questions about body functioning and sexuality before puberty and with a holistic focus on anatomy, relationships, and emotions (Beaumont et al., 2013). The educational process aims to promote awareness and knowledge in order to prevent and reduce sexual risks.

Given the diverse educational practices between Italy and Sweden, we aimed to explore the role of cultural differences on women's experience with menstruation. According to Fruzzetti and colleagues (2008), menstruation is not considered a comfortable topic among Italian women. They found that about 60% of the 350 Italian women they studied would prefer to bleed less than once a month. Moreover, Ferrero and colleagues (2006) in their study with 270 Italian women found that almost 50% would like not to experience menstruation at all. On the other hand, Swedish women seem to have fewer concerns regarding their period. In a study conducted in

Sweden on educational interventions, pre-pubescent girls who arrived prepared for menarche reported more positive attitudes toward menstruation (Rembeck & Gunnarsson, 2004). In a survey conducted among women across nine countries from all over the world, although 87% of Chinese and 69% of French declared feeling socially uncomfortable during menstruation, only 26% of Swedish reported some degree of discomfort, ranking last among the surveyed countries (SCA, 2011). A more recent qualitative study showed that Swedish women considered menstruation as ways to feel part of a wider group and to reinforce their female identity (Brantelid, Nilvér, & Alehagen 2014). Moreover, Swedish women considered menstruation as evidence for good health and as a natural body function that all women experience. Altogether, these country-level dissimilarities may contribute to different perceptions and reactions to media messages depicting menstruation as a taboo topic.

The Current Study

The present study aimed to examine the effect of exposure to television advertisements of sanitary napkins on women's self-objectification, exploring the influence of menstrual knowledge in this relationship. For this purpose, a 2 (Taboo vs. Mentionable TV commercial) \times 2 (Italy vs. Sweden) between-subjects experimental design was used to investigate the impact of menstruation depictions and country on self-objectification. Although self-objectification is considered a relatively stable disposition, it can also be elicited by body-focused environmental cues, resulting in a temporary state of self-objectification (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998). This state self-objectification constituted the dependent measure of our study.

Because advertisements avoiding open reference to menstruation may actually emphasize a representation of menstruation as a taboo topic (Del Saz-Rubio & Pennock-Speck, 2009), we exposed participants from both countries to one of two different TV commercials that varied in

the degree in which they explicitly talked about menstruation and its related feelings and experience. Accordingly, we expected that state self-objectification would be positively affected by the taboo advertisement when compared to the mentionable one. Moreover, we expected to observe a stronger effect in Italy where women are more exposed to sexual and menstrual education pervaded by taboos (Fruzzetti et al., 2008).

Second, in line with previous research identifying knowledge of menstruation as a protective factor for many negative behavioral outcomes (White, 2013), we predicted that knowledge would moderate the relationship between ad exposure and self-objectification. Specifically, we expected women, both Italian and Swedish, with more accurate knowledge to be less prone to experience state self-objectification after exposure to the taboo advertisement. Given that we were mainly interested in the relative difference between the two ads in predicting state self-objectification and not in the effect of the advertisement per se, we did not put forward specific hypotheses on the moderating role of knowledge in the effect of the mentionable TV ad. Finally, throughout our whole analysis, the comparison between the results derived from the two samples of women from Italy and Sweden was taken into account in order to investigate the generalizability and boundary conditions of this relationship.

Method

Participants

Fully 319 women, 160 Italian and 159 Swedish, were recruited via social media posting in Italy and in Sweden and gave their informed consent to take part in our study, described as an online cross-cultural study on evaluations of advertisement for menstrual products. Participants reported holding the following highest academic qualifications: 114 (71%) Italian and 137 (86%) Swedish university degrees, 28 (18%) Italian and 19 (12%) Swedish high school diplomas, 17 (11%) Italian and 3 (2%) Swedish doctorate degrees, and one Italian participant (1%) only

completed secondary education. The women in the two samples presented similar levels of education, however, they differed significantly in terms of mean age, with the Swedish ($M_{\text{age}} = 30.20$, $SD = 7.51$, range = 16–61) participants being older than the Italians ($M_{\text{age}} = 26.44$, $SD = 6.25$, range = 17–61), $t(317) = 4.87$, $p < .001$, $d = 0.54$. We then added age as a covariate in the subsequent analysis as a control, but it did not affect the consistency of the model so that the more simplified results reported here do not include age as a covariate.

Sample size was determined according to an a priori power analysis computed using the G*Power3 program (Faul, Erdfelder, Lang, & Buchner, 2007), which indicated cell sizes of 139 participants in order to achieve a statistical power of 80% to detect a small-to-medium effect size ($d = 0.30$) of the experimental conditions using a t -test between means with alpha at .05.

Procedure and Measures

TV commercials of sanitary napkins used for the experimental manipulation were selected among recent Italian existing ones following a web-based search in order to maximize the ecological validity of the stimuli. According to Whisnant, Brett, and Zegans (1975), messages referring to menstruation conveyed by sanitary products' manufactures have recurring characteristics that encourage a taboo-like representation of the menstrual cycle. Specifically, these messages frame the menstrual cycle in medical, abstract, and complex terms, without considering women's psychological experience and feelings. Moreover, they depict menstruation as a hygiene crisis to solve with the help of experts, presenting it as something that is publicly unmentionable. Accordingly, we classified advertisements in which no explicit mentioning of menstruation and feelings related to it was done throughout as *taboo*. In contrast, TV commercials in which women openly talked about menstruation and their feelings and experiences so that menstruation was seen as possible to discuss were classified as *mentionable*.

To assess the extent to which the TV ads about sanitary napkins used a strategy that minimized references to women's experience of menstruation, we performed a pilot study involving 24 Italian female undergraduates. During this session, participants were exposed to six advertisements and, for each of them, they were asked to evaluate to what degree it was related to menstruation on a 7-point Likert scale from 1 (*not related at all*) to 7 (*completely related*). Moreover, to maintain the cover story, participants were asked to evaluate the ads along other characteristics of no interest to our purposes, such as femininity and fertility. Accordingly, we selected two TV commercials of the same brand, which then constitute our experimental manipulation. A paired-samples *t*-test on TV commercials' association with menstruation showed a significant effect of type of advertisement, $t(23) = 3.39$, $p = .003$, $d = 0.87$, such that the taboo TV commercial ($M = 4.54$, $SD = 2.11$) was rated as significantly less related to menstruation than was the mentionable one ($M = 6.08$, $SD = 1.31$).

Both the advertisements displayed a group of women, but they differ in the ways they focus on the message and women's experience is mentioned. The *taboo* TV commercial employed (some of) the above-mentioned strategies that keep a scientific focus on the product instead of the physical and psychological experience of users. It depicted a group of women dressed in white lab coats, naming all the technical characteristics of the advertised sanitary napkin and performing tests of the product in a sterile, white laboratory setting. Moreover, the emotional tone of the advertisement, as well as the surrounding environment, was neutral. The English translation of the text of this 39-second ad is:

Once upon a time, there were pads. Now there's è. Lines è—the most incredible pad. While a normal pad contains cellulose, Lines è is made of lactifless—an innovative, hypoallergic material never used before. It adapts to your body and

you don't feel it. It stays in place and it keeps its shape. It is also the most absorbent; it absorbs twice as much. Lines é —you don't have to feel it to feel safe.

In contrast, the *mentionable* TV commercial showed some women openly talking about menstruation and its common feelings of discomfort. Although this ad also kept its focus on the product, it directly addressed women's concerns and fears. The emotional tone displayed was confidential, and it encouraged self-disclosure by having the following quoted statements said by different women throughout the ad. The translated text of this 29-second ad said:

Afraid of stains during those days? "In those days I never feel really secure."
"A stain in front of everyone? It never happened to me, but just the thought of it..." "I always keep an eye behind." From today: say STOP to leaking! Lines Seta Ultra is the only one with protective barriers that protects you from leakage and it blocks the liquid on the inside. "These barriers are amazing!"; "Bye bye stains!" Lines Seta Ultra with new protecting barriers: Always dry and clean!

(The original Italian and translated Swedish for the text of both ads is provided in an [Online Supplement](#).)

Adopting a between-subjects experimental design, women were randomly assigned to one of the two experimental conditions (exposure to taboo or mentionable TV commercial). Participants were instructed to carefully watch the advertisement and memorize it in order to complete a subsequent filler evaluation task. Upon completion of this task, they were introduced to a following section of the questionnaire, containing all scales described in the materials section of the present paper. In order to minimize participants' understanding about the research design, we described this subsequent section as unrelated to the previous one. The whole questionnaire

was proposed in participants' respective languages, and the TV commercial was subtitled for the Swedish sample. With the exception of OBCS (McKinley & Hyde, 1996), all scales have been obtained following a back translation procedure. These measures were presented to participants in the following order.

State self-objectification. A state adaptation of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996) was used to assess state self-objectification subsequent to exposure to the advertisement of menstrual products. The OBCS is a 25-item self-report questionnaire composed of three subscales of eight items each, measuring Body Shame (feeling shame when the body does not conform to internalized cultural standards of beauty), Body Surveillance (internalizing an outside observer's gaze on one's own body), and Appearance Control Beliefs (feelings of having control over one's own look). Each item was rated on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). Mean overall scores were used, with higher scores indicating more state self-objectification. Even if self-objectification has been conceptualized as a relatively stable trait (Tiggemann & Boundy, 2008), items of the OBCS have been used as context-dependent variables in previous studies (e.g., Breines, Crocker, & Garcia, 2008; Martins, Tiggemann, & Kirkbride, 2007). Therefore, instructions and original items were rephrased including the wording "right now" in order to capture participants' feelings after the ad exposure and not to assess a stable individual trait. Previous studies have found support for the reliability and validity of OBCS both in Italy (Dakanalis et al., 2015) and Sweden (Lexner, 2009). Cronbach's alpha for this scale in the present study was .67 for the Italian sample and .81 for the Swedish sample. Such a difference in reliability scores between the two countries is consistent with previous studies administering OBCS to ethnically diverse samples (e.g., Crawford et al., 2009; Fitzsimmons-Craft, & Bardone-Cone, 2012).

Menstrual knowledge. Knowledge of menstruation was assessed by using five items from the Knowledge of Menstruation questionnaire (Moore, 1995) with the fewest correct answers in Moore's (1995) research, indicating some of the most popular misconceptions about menstruation. Each item is a true-false statement of fact about menstruation (selected items: "Changes in a girl's routine such as going on holidays can cause changes in her menstrual cycle"(T); "It is dangerous for a girl to go swimming when she is having her period"(F); "Female athletes in heavy training and ballet dancers sometimes stop menstruating"(T); "Menstruation (periods) cleans the body of dirty blood"(F); "Periods help to flush out an egg every month"(F)). Scores on this scale were calculated by summing the respective correct answers, thus higher scores indicate more accurate knowledge concerning menstruation (range 0–5).

Trait self-objectification. The Self-Objectification Questionnaire (SOQ; Noll & Fredrickson, 1998) was used to measure participants' dispositional self-objectification. The questionnaire assesses how individuals classify the importance of five appearance-related (e.g., physical attractiveness and weight) and five competence-related dimensions (e.g., health and strength) on their physical self-concept. Scores range from -25 to 25, with higher scores indicating more importance attributed to appearance and thus greater trait self-objectification (Fredrickson et al., 1998). Following Hill and Fischer (2008), because Cronbach's alpha could not be obtained within the SOQ's ranking scoring system, reliability was determined by calculating Pearson's correlations between the sum of the appearance- and competence-related items for each sample. The correlations between the two sets of attributes were significant and negative ($r = -.55$ for the Italian sample; $r = -.81$ for the Swedish sample), indicating good reliability of the measure.

Attitudes toward menstruation. Attitudes toward menstruation were assessed through the Menstrual Self-Evaluation Scale (MSES, Roberts, 2004). Overall, the MSES is a 16 item self-report questionnaire that measures women's menstrual attitudes. The two subscales used here were menstruation as bothersome (5 items) and shameful or disgusting (6 items). Each item was rated on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Mean overall scores were calculated for each subscale, with higher scores indicating more negative attitudes toward menstruation. The reliability and validity of the scale have received support in previous studies (Dunnivant & Roberts, 2013), and Cronbach's alpha for this scale in the present study was .72 for the Italian sample and .74 for the Swedish one.

Results

In order to determine whether being exposed to media messages depicting menstruation as a taboo phenomenon would lead women to experience state self-objectification, we conducted a 2 (Taboo vs. Mentionable advertisement) \times 2 (Italy vs. Sweden) between subjects ANOVA predicting state self-objectification. This analysis did not reveal a main effect of the country, $F(1, 318) = 3.68, p = .056, d = 0.21$, nor of ad exposure, $F(1, 318) = .045, p = .833, d = 0.024$, on women's state self-objectification. Most relevant to our hypotheses, we found a significant interaction predicting state self-objectification, $F(1, 318) = 8.41, p = .004, \eta_p^2 = .026$. Italians experienced more state self-objectification after being exposed to the taboo advertisement condition ($M = 4.35, SD = .57$) compared to the mentionable one ($M = 4.12, SD = .53$), $t(158) = 2.58, p = .011, d = 0.42$. However, in the Swedish sample there were no differences in state self-objectification due to the experimental conditions, $t(157) = 1.68, p = .094$.

We then examined country differences on participants' prior attitudes toward menstruation, menstrual knowledge, and trait self-objectification. A 2 \times 2 between-subjects

ANOVA showed no significant differences in terms of attitudes toward menstruation ($p = .57$) and knowledge of menstruation ($p = .52$) between Italian and Swedish women. However, when testing for differences in women's trait self-objectification, results revealed that the two samples significantly differed in their scores on the SOQ, with the Italian sample reporting a higher degree of trait self-objectification than the Swedish sample, $F(1, 318) = 6.42, p = .012, \eta^2 = .02$. Descriptive statistics and bivariate Pearson's correlations among all variables included in the study are shown, separately by sample, in Table 1. At the bivariate level, we found that Italian and Swedish women who displayed greater state self-objectification had more negative attitudes toward menstruation and higher tendency to self-objectify dispositionally (see Table 1). Thus, together with participants' age, we included scores at MSES and SOQ as controls in the following moderation analysis.

Given that the effect of ad exposure on self-objectification was found only among Italian participants, we then tested whether knowledge of menstruation would moderate this effect separately for each sample. We used the PROCESS macro (Preacher & Hayes, 2008; Model 1) to test the moderation hypothesis, using bootstrapping analysis with 5000 resamples. For Italian women, data showed a significant and negative interaction between ad exposure and knowledge of menstruation ($b = -.23, 95\% \text{ CI } [-.4125, -.0484]$), $t(156) = -2.5, p = .014$. To examine this interaction, we plotted the simple slopes for participants at -1 SD (-0.95), mean, and +1 SD (0.95) of knowledge of menstruation (see Figure 1). In response to the exposure to the taboo TV commercial, Italian participants with low ($b = .45, 95\% \text{ CI } [.2042, .6863]$), $t(156) = 3.65, p < .001$, and average ($b = .23, 95\% \text{ CI } [.0559, .3945]$), $t(156) = 2.63, p = .009$, levels of menstrual knowledge experienced significantly more state self-objectification.

In order to exclude other factors as possible source of explanation of the observed effect among Italian participants, we ran the same moderation model inserting age, trait self-objectification, and attitudes toward menstruation as covariates. Results showed that the moderation remained consistent even controlling for the abovementioned variables at both low ($b = .42$, 95% CI [.1773, .6593]), $t(156) = 3.43$, $p < .001$, and average levels of menstrual knowledge ($b = .23$, 95% CI [.0627, .3949]), $t(156) = 2.72$, $p = .007$. In the Swedish sample, there was no such significant interaction of ad exposure and menstrual knowledge ($b = .02$, 95% CI [-.2188, .2496]).

Discussion

The broad picture that emerges from the current research is that TV advertisements depicting menstruation as a taboo (compared to those representing it as a mentionable phenomenon) led Italian women to experience state self-objectification. This is in line with evidence identifying TV commercials as a possible instrument to fuel the menstrual taboos, mainly because they capture the feeling of shame associated with menstruation in popular culture (Thomas, 2007). In addition, our results supported our hypothesis that knowledge about menstruation might moderate this relationship. In fact, Italian participants who reported lower levels of knowledge of menstruation subsequently experienced more state self-objectification than their counterparts with higher knowledge of menstruation, even when controlling for age, trait self-objectification, and attitudes toward menstruation. It appears that knowledge about menstruation can serve a protective function when facing public discourse about menstruation focused on the need to keep it secret. This finding is in line with previous research showing that a lack of knowledge of the body and the menstrual cycle may put women in a position where they

experience negative feelings such as shame about their reproductive body functions and lower self-esteem (White, 2013).

Our study also brings further evidence to the understanding of the menstrual taboo under the lens of objectification theory (Fredrickson & Roberts, 1997), drawing examples from a number of studies that have highlighted how women with a greater tendency to self-objectify also hold more negative attitudes toward menstruation (e.g., Johnston-Robledo et al., 2007; Roberts, 2004). In addition, our results go beyond correlational claims, showing that the exposure to stimuli subtly reinforcing the taboo surrounding menstruation worked as a prime for Italian women which triggered a state of self-objectification, even if such advertisements did not make explicit mentioning to feminine ideal bodies.

Some have suggested that cultural representations of menstruation may shape subsequent beliefs and attitudes toward it (Marvàn & Trujillo, 2009). Since, in the European context, Sweden is considered a gender-egalitarian country that devotes much effort to promoting informed awareness through sexual education (World Economic Forum, 2014), we conducted a separate analysis with a Swedish sample. As hypothesized, no significant effects were found on Swedish women's state self-objectification due to the experimental condition. That is, only Italian women reported raised levels of state self-objectification after exposure to the taboo TV commercial.

So, why do Swedish women fail to self-objectify when exposed to the taboo condition? This question points to some possible cultural differences that may play a part in this dynamic. One explanation may be linked to participants' dispositional level of self-objectification, in the sense that Swedish women may actually be less vulnerable to the phenomenon in general (e.g., due to the sexual education received). However, even if in our sample we observed lower scores

of self-objectification both as a state and as a disposition for the Swedish compared to the Italian women, literature shows that Swedish women are also subject to self-objectification processes (e.g., Lunde & Frisé, 2011). That being said, by including trait self-objectification as a covariate in the analysis, the current study ruled it out as a possible explanation of the effects of taboo ad exposure even with Italian participants.

Another reason for the null effect among Swedish participants may be linked to the differences that exist between how sensitive the advertisers are to gender-related issues. In Sweden the general public is generally sensitive against sexist advertisements, which can be reported to a self-regulatory organization (the Swedish Advertising Ombudsman, RO), potentially resulting in negative publicity for the advertising company (Swedish Women's Lobby, 2016). In Italian advertisements, compared to other more gender-egalitarian countries, stereotypical depictions of women in a sexualized and objectified manner are often portrayed (Valtorta, Sacino, Baldissarri, & Volpato, 2016). Thus the taboo versus mentionable representation of menstruation in our TV commercials might have been more salient and ecologically valid among Italian women than among Swedish.

Limitations and Future Research Directions

Along with the evidence that the current study presents, some limitations must be considered in the interpretation of the results, beginning with our choice of advertisements used as experimental stimuli. Although we tried to select a TV commercial depicting menstruation as taboo, the specific one we used addressed the topic as a taboo indirectly rather than directly, never specifically mentioning menstruation. Conversely, the mentionable TV commercial did not explicitly use non-taboo words such as "blood" and "vagina," but instead was limited to the mention of first-hand feelings and experiences with expressions like "In those days I never feel

really secure” and “I always keep an eye behind.” Nevertheless, in line with the categorization of the taboo ad as “taboo”, results of the pilot study showed that the participants perceived it as markedly unrelated to menstruation, even if sanitary napkins were explicitly advertised. The choice of the TV commercial was also linked to the difficulty of finding existing advertisements that highlighted the taboo dimension. This is due to the fact that it is a risky strategy for advertisers to be explicit in depicting taboo themes because it often results in more negative consumer attitudes and fewer purchasing intentions (Sabri & Obermiller, 2012).

Moreover, because menstrual advertisements are different across countries, it was not possible to choose the same TV commercial aired in both Italy and Sweden. Thus, we decided to expose both samples to the same Italian ads, providing subtitles for Swedish participants. This procedure meant that, while both samples were exposed to the same video as an experimental manipulation, the information that was presented as auditory for the Italian women was displayed with additional text to the Swedish women. Still, the presence of written text should not impair the effectiveness of information processing (Perego, Del Missier, Porta, & Mosconi, 2010) among the Swedish participants, and furthermore the behavioral effects of auditory and textual stimuli on ostensibly unrelated tasks should be similar (e.g., Scaffidi Abbate, Boca, Spadaro, & Romano, 2014).

We acknowledge that creating an ad hoc stimulus similar to existing TV commercials would have provided a stronger basis to manipulate the taboo representation of menstruation, and constituted more comparable experimental conditions for both samples. However, we were interested in using a subtler and more ecologically valid operationalization of taboo, similar to those that women are routinely exposed to. Future studies should, however, address these points regarding comparability across manipulations.

Practice Implications

Results of the current research are in line with literature on the influence of media on self-objectification, which suggests that explicit messages depicting sexualized ideal bodies lead women to experience appearance anxiety and body dissatisfaction (Hargreaves & Tiggemann, 2004; Grabe et al., 2008). Additionally, the present findings also point out that advertisements that indirectly depict menstruation as a taboo topic have parallel detrimental effects on some women's self-objectification.

Remarkably, it is important to highlight that Italian participants with more accurate knowledge of the menstrual cycle were not vulnerable to these effects. This raises an important point about how valuable knowledge and education are as protective factors for individuals and the need to encourage them, along with increasing public awareness (Chrisler, 2011). In fact, one of the negative effects of lack of knowledge is the potential perpetuation of a vicious circle. For example, if mothers are not well informed about these topics, they may experience discomfort in engaging in such conversation with their daughters, resulting in reinforcement of the taboo and the lack of knowledge to the next generation of women (Gillooly, 2004).

Knowledge of menstruation and, more broadly, sexual education also have consequences in terms of health. In Sweden, sexual education programs are aimed to raise awareness and confidence in dealing with body-related knowledge and experience, resulting in a low prevalence of HIV and sexually transmitted diseases (Beaumont et al., 2013). Furthermore, in Sweden it is a compulsory legal requirement to inform sexual partners of a diagnosis of sexually transmitted infection (STIs), ranking it the first country in Europe for its level of medical consultations provided for this purpose (Danielsson et al., 2012; European Centre for Disease Prevention and Control, 2013). By contrast, Italy follows a more common trend characterized by a lack of

knowledge and information about reproductive functions, contraception, and STI's among young people (Donati, Medda, Spinelli, & Grandolfo 2000).

Nevertheless, optimistic signals are coming from both countries in the direction of developing more accurate and open knowledge about menstruation. In the last few years Sweden has gone through what has been defined as a “menstrual revolution,” and menstruation has become a topic that is now publicly discussed (Kissling, 2014). Indeed, several different menstrual art projects have received attention from the media, radio programs have hosted discussions about the topic on their broadcasts, and new books about menstruation have been published (e.g., Henry, 2015). Even in Italy, people are starting to get involved in the menstrual awareness debate. In 2015, a large petition was launched on the platform change.org, asking to reduce the so-called “tampon tax” from 22% to 4%, equating sanitary napkins to other essential goods (such as bread and pasta), which in Italy are subject to a reduced taxation. This initiative received massive attention and drew more than 34,000 signatures, resulting in a formal legislative proposal advanced by the Democratic Party that referred to sanitary napkins as necessary for women to fully participate in civic and social life.

Conclusion

Even if menstruation is a physiological phenomenon in women’s life, social research has highlighted that it is still characterized by taboos and stereotypical expectations (Kowalski & Chapple, 2000; Marván et al., 2006). In Western society, advertisements are a popular medium to conduct public discourse about menstruation (Erchull, 2013). Our study suggested that TV commercials of sanitary napkins depicting menstruation as something that is not talked about led Italian participants to experience an elevated state of self-objectification. Interestingly, this effect was not completely generalizable for all participants involved in the study. Our findings show

that self-objectification was more pronounced for those women who were less knowledgeable of the menstrual cycle, and it was totally absent for Swedish women, regardless their level of menstrual knowledge. Although long-term effects of taboo menstrual advertising have not been investigated in our study, we hope that our research raises awareness of the need to include menstruation in our daily discourses. Our focus on TV advertisements represents only a starting point in this direction, while the establishment of open sexual education, free from taboos and shame, seems increasingly urgent.

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Table 1

Descriptive Statistics and Correlations Among Study Variables

	Italy	Sweden	Correlations				
	<i>M (SD)</i>	<i>M (SD)</i>	1	2	3	4	5
1. State Self-Objectification	4.23 (.56) _a	4.09 (.73) _a	---	.03	.48**	.26**	-.16*
2. Menstrual Knowledge	2.99 (.95) _a	3.06 (.98) _a	-.05	---	-.02	-.07	-.06
3. Trait Self-Objectification	-4.64 (10.88) _a	-8.09 (13.32) _b	.21**	.02	---	.25**	-.26**
4. Attitudes toward Menstruation	3.57 (.93) _a	3.62 (1) _a	.17*	-.12	.05	---	-.15
5. Age	26.44 (6.25) _a	30.20 (7.51) _b	-.09	.01	-.14	-.02	---

Note. Correlations for Italian women are presented below the diagonal; for Swedish women, above. Means with differing subscripts comparing Italians and Swedes (i.e., within a row) are significantly different at $p < .05$.

* $p < .05$. ** $p < .01$.

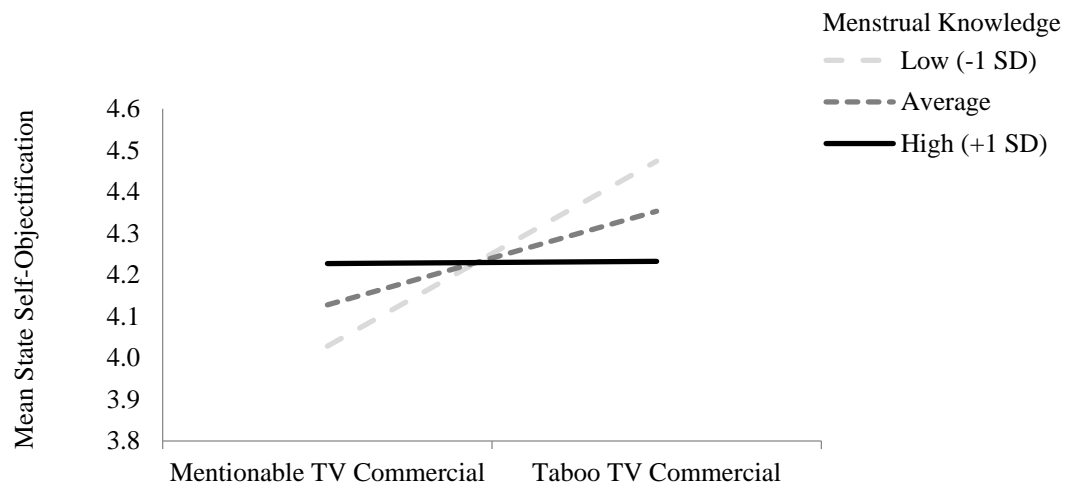


Figure 1. Interaction of menstrual knowledge and ad exposure (mentionable vs. taboo TV commercials) on state self-objectification among Italian women. Menstrual knowledge and state self-objectification are significantly correlated for Italian women whose menstrual knowledge is low or average (at the mean), but are unrelated for those with high menstrual knowledge.

Online Supplement for Spadaro, G., d’Elia, S. R. G., and Mosso, C. O. (2017). Menstrual knowledge and taboo TV commercials: Effects on self-objectification among Italian and Swedish women. *Sex Roles*. Cristina O. Mosso, University of Turin. E-mail: cristina.mosso@unito.it

Ad	English	Italian	Swedish
Taboo	Once upon a time, there were pads. Now there’s è. Lines è—the most incredible pad. While a normal pad contains cellulose, Lines è is made of lactifless—an innovative, hypoallergic material never used before. It adapts to your body and you don’t feel it. It stays in place and it keeps its shape. It is also the most absorbent; it absorbs twice as much. Lines é —you don’t have to feel it to feel safe.	C’era una volta l’assorbente. Adesso “è”. “Lines è” - l’assorbente più incredibile che c’è. Mentre un normale ultra contiene cellulosa. “Lines è” è fatto di lactifless - un materiale innovativo ipoallergenico - mai usato prima. Si adatta al tuo corpo e non lo senti. Torna al suo posto, e non si deforma. E poi è il più assorbente che c’è, assorbe il doppio “Lines è” - non hai bisogno di sentirlo per sentirti protetta.	En gång fanns det bindor, Nu finns “è”. ”Lines è” är en otrolig binda. Medan en normal binda innehåller cellulosa så är ”Lines è” gjord av lactifless - ett innovativt material med hypoallergena egenskaper som tidigare inte använts. Den anpassar sig efter kroppen så att du inte känner den. Den håller sig på plats och den tappar inte formen Och så är det bidan med bäst uppsugningsförmåga. Den suger upp dubbelt så mycket. ”Lines è” - du behöver inte känna av den för att känna dig säker.
Mentionable	Afraid of stains during those days? “In those days I never feel really secure.” “A stain in front of everyone? It never happened to me, but just the thought of it...” “I always keep an eye behind.” From today: say STOP to leaking! Lines Seta Ultra is the only one with protective barriers that protects you from leakage and it blocks the liquid on the inside. “These barriers are amazing!”; “Bye bye stains!” Lines Seta Ultra with new protecting barriers: Always dry and clean!	In quei giorni hai timore di macchiarti? - “In quei giorni sicura, sicura non mi sento mai” - “Una macchia davanti a tutti... a me non è mai successo ma solo il pensiero...” - “Io, un’occhiata dietro la butto sempre” Da oggi dì stop alle fuoriuscite! “Lines Seta Ultra” L’unico con le nuove barriere protettive. Aiuta a proteggere dalle fuoriuscite E a bloccare il flusso all’interno. - “Queste barriere – Mitiche!” - “Ciao ciao macchie!” “Lines Seta Ultra” con nuove barriere protettive Asciutto e pulito sempre!	Är du rädd för fläckar under “de där dagarna”? - “Helt säker känner jag mig aldrig under “de där dagarna” - “En fläck inför alla andra... mig har det aldrig hänt men bara tanken...” - “Jag slänger alltid ett öga över axeln” Från och med idag kan du säga STOP till läckage “Lines Seta Ultra” Den enda med skyddande barriärer som hjälper att skydda mot läckage. Och den blockerar flödet på insidan. - “Dessa barriärer – fantastiska!” “Hejdå fläckar!” “Lines Seta Ultra” med nya skyddsbarriärer Alltid Torrt och rent!