To Picture or Not to Picture: Levels of Erotophobia and Breast Self-Examination Brochure Techniques[1]

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People's level of erotophobia influences their acceptance of sexually related situations, including the likelihood of engaging in sexually related health care such as breast self-examinations (BSE). Female college students (n = 61) completed a measure of erotophobia and read a BSE brochure that either did or did not contain instructional photographs showing a woman's breasts. As hypothesized when the brochure contained photographs, women high in erotophobia felt less competent in giving themselves BSE and were less likely to claim that they did things to improve their health. When the brochure contained no photographs, women low in erotophobia thought that the information was easier to understand and that BSE was more important.

A well-known proverb advises that an apple a day keeps the doctor away. Clearly the interpretation reflects the importance not just of apples but of a healthy diet to a person's overall health. Interestingly, from a biblical standpoint, the same proverbial fruit helped spawn the birth of erotica. When Adam ate an apple, man and woman first became aware of their physical differences. Enlightening as that knowledge may have been, Adam and Eve also donned fig leaves to hide their embarrassment. Intrigue, wonder, fascination, and surely guilt have accompanied that revelation since its inception. Men's and women's negative reactions to sexuality and sexual cues can, for some, be described as erotophobic. An individual with a high level of erotophobia may be particularly likely to avoid preventive sexual health-related actions involving areas of the body associated with erotica. Thus, ironically, the twist on the proverb inspires the question, Does the apple that Adam ate on this particular day now keep people away (from the doctor)?

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Erotophobia is characterized by having stable negative affective responses to a wide range of sexual cues (Fisher, Byrne, White, & Kelley, 1988). In turn, erotophilia is characterized by a positive affective response to sexual cues. Erotophobic individuals differ from erotophilic individuals in two major ways. First, erotophobic individuals hold different attitudes than do erotophilic individuals. Erotophobia is associated with sex-related guilt, fears, and inhibitions, as well as conservative sexual attitudes. Erotophobic women have more negative attitudes toward sex education and discussing sexual matters. Furthermore, erotophobic persons have greater difficulty in looking at, learning, and recalling sexual or contraceptive information (Fisher et al., 1988). Second, erotophobia is associated with failure to take preventive sexual health-related actions. Erotophobic persons may overgeneralize their negative attitudes toward perceived sexual cues, which may interfere with their ability or plans for sexually related health care (Gerrard, Gibbons, & McCoy, 1993). Erotophobic women are more likely than erotophilic women to neglect to use birth control, and when they do use birth control, they do so inconsistently or use ineffective methods (Gerrard et al., 1993). Also, these women are less likely to get gynecological exams and are less willing to examine their own or their partner's sex organs for signs of sexually transmitted diseases before participating in sexual intercourse (Fisher et al., 1988; Yarber & Fisher, 1983).

Convincing people to engage in health protective behaviors, be it using seat belts, condoms, or motorcycle helmets, is notoriously difficult (e.g., Kaplan, 1985). Furthermore, research on attitude change shows that some individual characteristics make persuasion more difficult. For example, those high in self-monitoring (they are more likely to regulate their behavior, depending on the situation) are more persuaded by messages that promise desirable social images, whereas those who are low in self-monitoring (they are more likely to behave according to their own beliefs and preferences) are more persuaded by information-oriented appeals (DeBono & Packer, 1991). Erotophobia is another individual difference variable which may interfere with persuasive communications to the extent that such communications contain sexual cues. Examining the interaction between message content and individual differences is an important theoretical endeavor in persuasion research.

In addition, although some studies have focused on erotophobic individuals and their reactions to sexual behavior information and condom use (Kyes, 1990; Kyes, Brown, & Pollack, 1991), very few focus on health behaviors that are less directly sexual, such as breast self-examination (BSE). BSE is a procedure which involves squeezing and pinching the breasts and nipples in an attempt to detect lumps or observe discharge. Because early detection is critical for treatment of breast cancer, this procedure is highly recommended as a basic and simple preventive measure for all women older than 20 years of age

(American Cancer Society, 1990, 1992; Fink, 1991). Although several researchers argue for the need for special considerations to educate certain populations about BSE, such as the illiterate, elderly, and minority women (Brown & Williams, 1994; Maddox & Gibson, 1995), little work has been done on effective methods of educating erotophobic women. Pinto and Fuqua (1991) reviewed 19 studies focusing on BSE training, none of which addressed BSE and erotophobia. Thus, although erotophobic women are less likely to give themselves breast examinations (Fisher et al., 1988; Yarber & Fisher, 1983), no studies have directly examined the link between presenting BSE information with different levels of sexual cues and the effect on the attitudes and behavioral intentions of erotophobic and erotophilic women.

In order for BSE to be effective, it must be done proficiently and frequently (Bennett et al., 1990; Fletcher, Morgan, O'Malley, Earp, & Degnan, 1989). BSE brochures are often accompanied by pictures of a nude woman performing the procedure. Although surely included for their educational and instructional value, the nude pictures may be a barrier to persuasion for erotophobic women. Two main factors may lead to this barrier. First, consistent with their overall behavior patterns, the pictures may be perceived by erotophobic women as sexual cues that are to be avoided. Several studies show avoidance to be at the root of why erotophobic women know less about contraception as well as other topics (Fisher et al., 1988; Goldfarb, Gerrard, Gibbons, & Plante, 1988). In addition, Hailey (1987) found that women who did examine their breasts were eager to learn more about BSE. Women who did not examine their breasts, and who therefore needed to know more about BSE, showed little interest in learning more about the method. Studies have also found that educational material high in sexual explicitness can create anxiety and arousal in erotophobic individuals which can, in turn, cause discomfort and interfere with learning and knowledge retention (Gerrard, Kurylo, & Reis, 1991; Goldfarb et al., 1988).

Second, nude pictures may prevent erotophobic women from performing BSE because the nude pictures make it explicit (more so than text by itself) that one will have to touch oneself to perform BSE. Erotophobic individuals' avoidance of self-touching or masturbation is consistent with the wide range of negative affective responses to perceived sexual cues noted by Fisher et al. (1988). Masturbatory guilt or shame has been shown to be a powerfully aversive reason for not participating in masturbation. Masturbatory guilt has in turn been linked to avoidance behavior involving diaphragm use (Davidson & Moore, 1994). Thus, for erotophobic women, the perceived sexual nature of the pictures may link BSE to self-touching and masturbation.

In sum, erotophobic individuals may avoid the pictures because they produce general discomfort and because they suggest the requirement of self-touching. Hence, not only are the pictures potentially avoided, but the information and its importance are missed as well. Thus, proficiency and frequency, the two major components of BSE efficacy, may be hindered. New methods of presenting BSE information to sexually sensitive individuals need to be considered.

The present study examined the extent to which a sexual cue (nude pictures) would interfere with the persuasiveness of a BSE brochure. One group received a BSE brochure containing educational text plus pictures of a nude woman performing the procedure, and one group received the same brochure without the nude pictures. Both groups completed a sexual opinion survey to determine levels of erotophobia. We hypothesized that erotophobic women would be more persuaded by the nonpicture brochure, relative to the picture brochure. Avoidance, driven by negative affective reactions in erotophobic women, should not play a role in erotophilic women's reactions to the persuasive message. Therefore, we predicted that erotophilic women would be equally persuaded by the two brochures.

Method

Participants

The design was a 2 × 2 (Type of Brochure: Picture vs. No Picture × Erotophobia vs. Erotophilia) between-subjects factorial. Participants were 61 female college students who were randomly assigned to read one of the two BSE brochures. Forty-three percent of the participants were female students enrolled in a Psychology of Women course at a state university. Those in the class received extra course credit for their participation in the experiment. The remaining 57% of the participants were approached on the same university campus and asked to participate in the experiment. No compensation was provided to these students.

Materials and Procedure

Experimental materials consisted of two short self-report paper-and-pencil questionnaires and the BSE instructional brochure. The materials were presented to each subject in a large envelope with a statement of informed consent and basic instructions for the subject's participation attached to the front.

The self-report questionnaire used to measure the level of erotophobia consisted of 8 representative items taken from the 21-item Sexual Opinion Survey (SOS). Past research shows that the SOS is a valid and reliable measure of erotophobia and erotophilia (Fisher et al., 1988; Gilbert & Gamache, 1984). The items used in the current study were Items 1, 4, 9, 12, 15, 16, 18, and 20. These particular items were chosen based on their high validity as measures of

erotophobia–erotophilia in females (Fisher et al., 1988). Responses were scored on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The resulting score represented the subject's overall level of erotophobia, so that the lower the score, the higher the erotophobia. Participants in the lowest third of scores were classified as erotophobic, and participants scoring in the highest third of scores were classified as erotophilic.

After the SOS had been completed, participants were asked to read the BSE instructional brochure. Half the participants read the brochure containing text and pictures, and half the participants read the brochure containing only text. The brochure described a seven-step procedure for doing BSE. The pictures (when used) were six photographs of the same woman naked from her waist up, her face partially hidden, shown either standing or lying down. Three of the pictures had what appeared to be the hand of a male physician demonstrating the procedure on the woman's breast.

After reading the BSE brochure, participants were asked to complete a final self-report questionnaire labeled the Breast Self-Examination Survey. The survey consisted of 10 items designed to measure participants' reaction to the brochure. The items addressed performing ("I feel I could properly give myself a breast self-examination"), describing ("I feel I am knowledgeable enough to describe breast self-examination to a close friend"), confidence in doing ("I would feel confident giving myself a breast self-examination"), and embarrassment of performing BSE ("I would not feel embarrassed giving myself a breast self-examination"). Other items concerned health issues such as frequency of healthy behaviors ("I frequently do things to improve my health" and "I am too busy to perform breast self-examinations every month"), the health benefits of BSE ("Breast self-examination is a procedure that every woman must perform to stay healthy"), and future BSE behavior ("I will perform a breast self-examination within the next month"). Finally, the questionnaire asked participants if the information provided on breast self-examination was easy to understand or if it made them feel uneasy. Responses were scored on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

After completing the final questionnaire, each subject sealed the envelope and placed it among a large group of similar envelopes to ensure anonymity. Individually solicited participants were then debriefed. The classroom group participants were awarded extra course credit as they finished and were later debriefed as a group at a class meeting.

Results

To explore the extent to which erotophobia and the type of BSE brochure influenced participants' responses on the BSE survey, a series of 2 × 2 (

Brochure: Picture vs. Nonpicture × Erotophobia vs. Erotophilia) ANOVAs were conducted. It was expected that erotophobic women would be more persuaded by the nonpicture brochure, relative to the picture brochure, whereas erotophilic women would be equally persuaded by the two brochures.

First, for competency in performing BSE ("I feel I could properly give myself a BSE"), a significant main effect of type of brochure was revealed, $F(1, 34) = 3.98$, $p = .05$, such that participants in the nonpicture condition felt more competent ($M = 5.94$) than did participants in the picture condition ($M = 5.29$). However, as seen in Figure 1, this main effect was qualified by a significant Erotophobia × Brochure interaction, $F(1, 34) = 6.98$, $p = .01$, such that erotophobic women felt significantly more competent in the nonpicture condition ($M = 6.09$) than in the picture condition ($M = 4.25$), $F(1, 35) = 10.01$, $p < .001$, whereas erotophilic women felt equally competent in the nonpicture condition ($M = 5.67$) and the picture condition ($M = 5.92$), $F < 1$.

The second dependent variable that was examined was attitudes about leading a healthy lifestyle ("I frequently do things to improve my health"). As is apparent in Figure 2, results showed a significant main effect for type of brochure, $F(1, 34) = 10.35$, $p < .001$, such that women in the nonpicture condition felt that it was more important to lead a healthy lifestyle ($M = 5.88$) than did women in the picture condition ($M = 4.71$). This main effect, however, was again qualified by a significant Erotophobia × Brochure interaction, $F(1, 34) = 3.98$, $p = .05$, such that erotophobic women felt that it was more important to lead a healthy lifestyle in the nonpicture condition ($M = 6.09$) than in the picture condition ($M = 4.13$), $F(1, 35) = 13.86$, $p < .001$. In contrast, erotophilic women felt that it was equally important to lead a healthy lifestyle in the nonpicture condition ($M = 5.50$) as in the picture condition ($M = 5.08$), $F < 1$.

Third, women were asked how easy it was to understand the information on BSE. As is evident in Figure 3, a significant Erotophobia × Brochure interaction emerged for comprehension of information about BSE, $F(1, 34) = 6.08$, $p < .05$. Women who were erotophobic thought that the information was equally easy to understand in the picture condition ($M = 6.00$) and the nonpicture condition ($M = 6.36$), $F(1, 35) = 1.07$, $p < .05$, whereas women who were erotophilic thought that the information was easier to understand in the picture condition ($M = 6.62$) than in the nonpicture condition ($M = 5.67$), $F(1, 35) = 6.42$, $p < .05$.

Fourth, analysis revealed a significant Erotophobia × Brochure interaction for importance of performing BSE, $F(1, 34) = 4.67$, $p < .05$ ("BSE is a procedure that every woman must perform to stay healthy"). As shown in Figure 4, erotophobic women thought that BSE was equally important in the picture condition ($M = 6.25$) and in the nonpicture condition ($M = 6.46$), $F < 1$, [illegible]philic women thought that BSE was more important in the

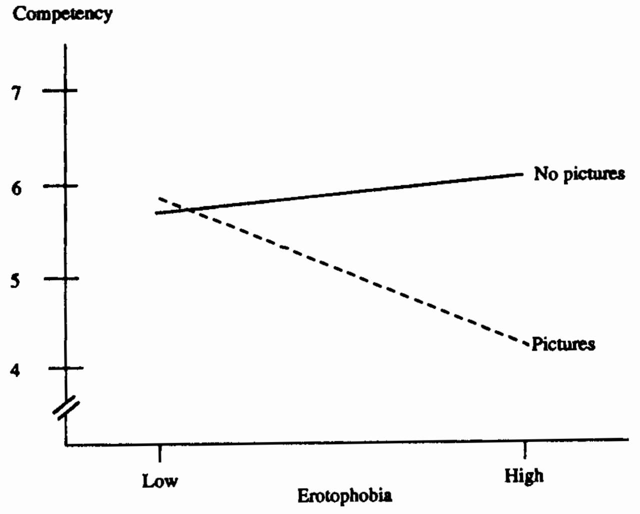

Figure 1. Competency in performing BSE as a function of erotophobia and brochure condition.

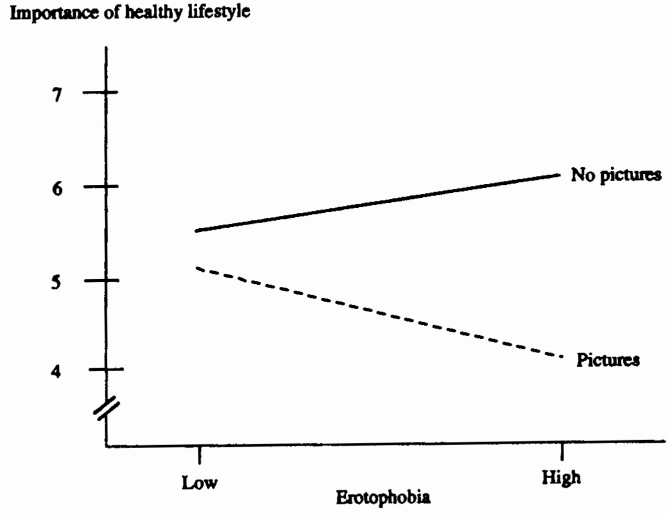

Figure 2. Importance of leading a healthy lifestyle as a function of erotophobia and brochure condition.

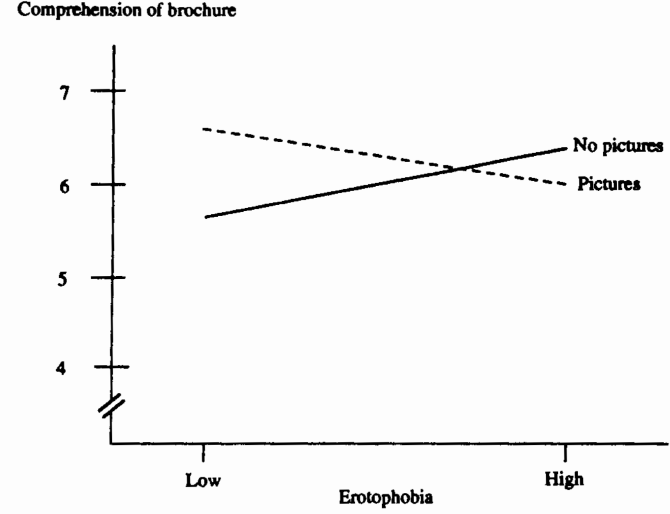

Figure 3. Comprehension of brochure information as a function of erotophobia and brochure condition.

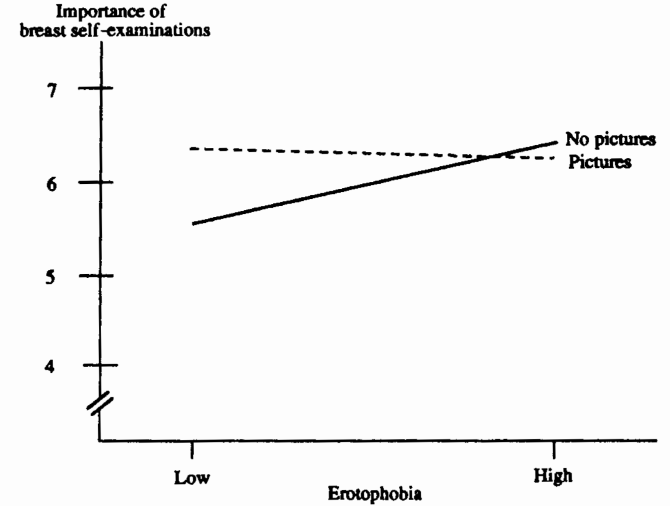

Figure 4. Importance of BSE as a function of

picture condition (M = 6.39) than in the nonpicture condition (M = 5.50), $F(1, 35) = 4.01, p = .05$.

Overall, two patterns emerged in these data. First, erotophobic women felt less competent in giving themselves BSE and were less likely to claim that they did things to improve their health when they read the picture brochure compared with the nonpicture brochure. For erotophilic women, the presence or absence of pictures made no difference. Second, women who were erotophilic thought that the information was easier to understand and that BSE was a more important procedure when they read the picture brochure compared with the nonpicture brochure. Erotophobic women did not differ as a function of the pictures on these two variables. Other analyses showed no significant main effects or interactions with respect to the other dependent variables: ability to describe BSE, embarrassment associated with BSE, confidence in performing BSE, being too busy to perform BSE every month, and willingness to perform BSE within the next month.

Discussion

As predicted, erotophobic women were more persuaded by the BSE materials when not accompanied by nude pictures, whereas erotophilic women were equally persuaded by the BSE materials with or without nude pictures. Specifically, erotophobic women reported that they did things less frequently to improve their health and felt less competent in performing BSE when they read the brochure with the pictures than when they read the brochure without the pictures, while erotophilic women were equally likely to agree to improve their health and felt equally competent in both brochure conditions. In addition, erotophilic women thought that BSE was important and comprehended the information provided better when the brochure had pictures than no pictures. Yet, women who were erotophobic perceived no differences in the importance, and comprehended the brochure information no better in the picture condition than in the nonpicture condition.

Lack of knowledge may be one underlying characteristic associated with erotophobia which can explain the current findings. Erotophobic individuals have a tendency to avoid materials that are sexually explicit, including, but not limited to, information on contraception (Gerrard et al., 1993; Goldfarb et al., 1988). In fact, it has been suggested that erotophobic individuals show avoidance responses when exposed to sexual cues (Fisher et al., 1988). These avoidance responses are probably a result of the fact that sexual information, such as BSE and contraceptive issues, causes physiological arousal and anxiety in erotophobic individuals (Goldfarb et al., 1988). Consistent with this reasoning, the present study found that erotophobic women felt less competent when they read the brochure with the pictures compared with erotophobic women who read the brochure without the pictures. The picture may have made them feel so uncomfortable that they did not attend to the factual information provided in the written text. Thus, erotophobia alone was not the cause of the discomfort, but rather the unique combination of erotophobia and perceived sexual explicitness of the information presented.

Although lack of knowledge can be linked to avoidance of sexual information or to arousal of the individual in the presence of perceived sexual information, erotophobia does not necessarily interfere with the retention of the sexual information (Goldfarb et al., 1988). Past research has found that erotophobic persons retain birth-control information as well as do erotophilic persons. In fact, erotophobic individuals can learn sexual information when exposed to it, but they may ignore the information, making it seem as though they are not learning the information (Gerrard et al., 1991).

The fact that erotophobia alone does not create a barrier to persuasive sexual information implies that something may be a cocreator of the barrier. One such factor is self-esteem. Gerrard et al. (1991) found that being high in self-esteem and high in erotophobia was particularly likely to inhibit learning. The present study suggests another possible cofactor to learning inhibition in erotophobic individuals, namely the level of sexual cues provided. When no pictures were present, the erotophobic women felt just as competent in performing a BSE as did the erotophilic women. Thus, it appears that the erotophobic women were unable to discern the information only when the sexual cue (pictures of bare breasts) was provided along with the information. These findings give support for the idea that several factors, such as personality and the context of the information, must interact to create a barrier to persuasion. It is interesting to note that erotophobic women felt that it was more important to lead a healthy lifestyle in the nonpicture condition, compared with the picture condition. Effect on such a broad, non-BSE-related question, is slightly surprising and future research will have to replicate this effect to determine if reactions to materials on one health-related topic typically influence attitudes toward health behavior in general.

Whereas BSE is not related to sexuality per se, it does involve touching the breasts, an act that may appear sexual for erotophobic women. Thus, one would expect, as past research shows, that erotophobic women are less likely to perform BSE than are erotophilic women (Fisher et al., 1988; Yarber & Fisher, 1983). In the present study, everyone was presented with identical written information about the BSE procedure, only varying the presence or absence of the nude pictures. The presence of the pictures likely served as a sexual cue, which in turn made the erotophobic women react more negatively than the erotophilic women. Although one may argue that the solution from a practical perspective is simply to remove any explicit pictures from BSE materials, these data do not support such a conclusion. In this study, the erotophilic women

found that the information was easier to understand when the pictures were present (as opposed to absent) and were also more likely to think that BSE was an important procedure. Thus, BSE information must either be presented in a way that is persuasive to both groups, or BSE information must be tailored specifically for the intended group. This latter argument has been made for other special groups, such as older women. Brown and Williams (1994) argued that there are special barriers to BSE in older people, which include a lack of confidence, lack of knowledge, and embarrassment. Health-care practitioners need to include BSE instruction in their examination of older women. This simple procedure could possibly increase the likelihood of early detection of breast cancer among older women (American Cancer Society, 1990, 1992). Some recommended specific strategies include making the information inexpensive, more accessible, and more available. Other strategies include increasing knowledge, involving the community, and using a variety of methods such as brochures, instructional sessions, films, health forums, and speakers (Brown & Williams, 1994). People who are erotophobic can be considered a special population and, hence, should also have information targeted toward them.

How to target such strategies is important to address in future research. However, one must consider the gender of the person, possible individual difference factors (e.g., erotophobia), and the content of the persuasive message. In a study on the effects of different condom advertisements, Alden and Crowley (1995) found that condom purchase intentions were influenced by the gender of the person, the level of sex guilt, and the content of the condom advertising (whether self-focused or other-focused). Also speaking from a marketing perspective, Lascu (1991) suggests that when products are promoted which produce guilt, one should attempt to address the guilt directly while promoting the direct benefits of the product. Although guilt associated with eating ice cream, for example, is likely different from guilt associated with sexual issues, future research might address the suggestion of directly addressing guilt while at the same time emphasizing the positive outcomes of adopting the behavior.

The development of successful educational strategies for BSE in erotophobic women would have implications for a variety of related health-care procedures. Targeted strategies that show significant results with a specific population, such as erotophobic persons, could be modified across additional health-care procedures, such as testicular self-examinations, prostate examinations, and gynecological examinations. Health agencies concerned with providing information about such topics as unplanned pregnancy and sexually transmitted diseases including HIV/AIDS need to be certain that their message is received by the entire intended audience. Any agency involved in teaching preventive sexually related health-care techniques should be aware of sexually related barriers to precautionary behaviors.

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