Objectification Theory and Our Understanding of Indoor Tanning

Media depictions of tanned individuals as healthy and attractive help to establish sociocultural beliefs about appearance, and popular television programs glamorize indoor tanning. Our understanding of media influences in the persistence of tanning behavior may be informed by examining how media influences relate to disordered eating, which, like tanning, can be viewed as an attempt to exert control over one’s physical appearance. According to objectification theory, cultural and media-driven sexual objectification of women, including the portrayal of an ideal feminine body image (eg, thin, toned, bronzed appearance), can socialize women to internalize these ideals and begin to view themselves as objects to be looked at and evaluated. Women may critically compare themselves to these ideal images and find themselves wanting. Feelings of shame often emerge when women realize they do not look like the feminine ideal. These feelings motivate young women to engage in appearance control behaviors in an attempt to look more like the ideal. To our knowledge, this research will be the first to test if the body objectification framework can be applied to indoor tanning.

Methods. Participants were 155 female undergraduate students recruited from an introductory course at a large northeastern university. Participants were given course credit, and the study was approved by the Pennsylvania State University institutional review board.

We used a structural equation model to test the relationship between body objectification constructs and indoor tanning (Figure). The objectified body consciousness scale was used to measure self-objectification (ie, viewing one’s body as an object to be looked at and evaluated) and body shame.

Self-objectification (Figure, SO1, SO2, and SO3) was measured by rating each of 3 statements on a 7-point Likert-type response scale: (1) “I rarely compare how I look with how other people look” (reverse coded); (2) “During the day, I think about how I look many times”; and (3) “I rarely worry about how I look to other people” (reverse coded) (α = .70). Body shame (Figure, BS1, BS2, and BS3) was also assessed by rating 3 statements: (1) “I feel like I must be a bad person when I don’t look as good as I could”; (2) “Even when I can’t control my weight, I think I’m an okay person”; and (3) “When I’m not exercising enough, I question whether I am good” (α = .73). Intentions to engage in indoor tanning (Figure, I1 and I2) were measured by rating the answers to each of 2 questions on a 7-point scale: (1) “Do you intend to indoor tan in the next year?”; (2) “Do you intend to indoor tan more than 10 times in the next year?” The number of past year indoor tanning sessions was measured with an open-ended response item.

Results. Fit indices used to assess model fit indicated a good model fit: χ² = 33.24; P = .13; root mean square error of approximation, 0.046; and comparative fit index, 0.986. The self-objectification latent variable was significantly related to body shame (Figure) (β = 0.358; P < .05). Body shame was significantly related to intentions to indoor tan (β = 0.515; P < .01), which were related to past year indoor tanning (β = 2.297; P < .001). 

Comment. Our results suggest that the central tenets of body objectification theory can help elucidate motives for indoor tanning behavior among college women. In the present study, viewing one’s body critically was related to body shame. Body shame, hypothesized to lead to appearance control behaviors, was related to intentions to indoor tan and, ultimately, to indoor tanning behavior. With 1 notable exception, most published articles on skin cancer interventions do not address the way the media can influence young women’s attitudes about their bodies. Skin cancer intervention messages that address resisting media pressures and increasing body satisfaction and self-esteem, which have some efficacy in disordered eating interventions, may produce reductions in deliberate tanning.

In the present study, the use of a convenience sample and the cross-sectional nature of the data are limitations. However, the extensive literature on body objectification provides support for the hypothesized associations.

Figure. Conceptual structural equation model. Boldface numbers represent regression weights. All factor loadings were significant (P < .001), and all residual covariances were significant (P < .001). *P < .05; †P < .01; ‡P < .001.
angiogenesis is an important facet of tumorigenesis. One method to characterize this process in pigmented lesions is to assess architectural patterns of vascular structures with tools such as dermoscopy and reflectance confocal microscopy.2 Dermoscopic studies have shown distinct vascular patterns in melanoma vs benign pigmented lesions.1 In addition, investigators have measured the number of blood vessels using lectin agglutinin I to label microvessels in excised lesions and have shown that melanomas contain more blood vessels than dysplastic nevi (DN), and DN have more blood vessels than other benign nevi.3 These data suggest that characterizing angiogenesis within a lesion may potentially help distinguish between different melanocytic lesions. Studies using laser Doppler perfusion imaging have already shown that it is possible to noninvasively categorize lesions by measuring velocity of blood flow.1,5

In this pilot study, we investigated the use of a novel instrument, the Nevoscope (TransLite, Sugar Land, Texas), which combines side-transillumination (TL) to measure blood volume with cross-polarization (XP) for superficial imaging, to differentiate melanocytic lesions based on vascularity. The patented TL method makes the skin translucent and allows examination of lesion vascularity and pigmentation.

Methods. The study data were collected at the MD Anderson Cancer Center, Houston, Texas, where 80 patients with suspect pigmented lesions smaller than 1 cm in diameter were prospectively recruited during routine skin examinations to undergo biopsy. After a clinical diagnosis by an expert dermatologist was recorded, the Nevoscope was used to image the lesions. Punch biopsy specimens of suspect lesions were obtained, and the biopsy specimens were submitted for histopathologic diagnosis.

Nevoscope Imaging. This device uses XP and TL to create dermoscopic and blood-volume images, respectively. Side-transillumination directs light into the skin at a 45° angle from the periphery of the lesion. This light, focused under the skin, behaves as a virtual light source and uniformly transilluminates a small area of the skin within the circular area defined by the fiberoptic ring light. All chromophores, including melanin, oxyhemoglobin, and deoxyhemoglobin, are involved. Thus, TL imaging provides information on blood volume and melanin content. Deoxygenated blood, specifically, absorbs light wavelengths between 580 nm and 650 nm and appears dark red on transillumination. On the other hand, XP images are formed via surface reflection and provide information on melanin content.

Image Acquisition and Lesion Classification. Side-transillumination and XP images were obtained prior to biopsy. An automated procedure for accurate boundary detection was used.7 Next, the area within the boundary was quantified from the TL and XP images. Fifty melanocytic lesions were used in the analysis; they included 6 congenital nevi (CN), 5 intradermal nevi, 18 DN with mild atypia, 15 DN with moderate atypia, 2 DN with severe atypia, and 4 malignant melanomas (MMs). Junctional melanocytic nevi with atypia and DN with congenital features were grouped into the DN category. Criteria for characterizing DN based on cytologic atypia are discussed elsewhere.9

Statistical Analysis. Descriptive statistics were used to describe the study lesions. A ratio (TL/XP = melanin...