

Women's Perceptions and Use of "Anti-Aging" Products

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Abstract Recent advances in the cosmetics industry have accelerated the availability of products marketed as "anti-aging." Our research goals were to identify the factors that predict women's purchase of these products, and to gain insight into women's perceptions of the anti-aging market. Three hundred and four Canadian women were surveyed about their use of anti-aging products, body satisfaction, aging anxiety, appearance importance, sociocultural pressures and self-esteem, as well as open-ended responses about their perceptions of anti-aging products. Greater aging anxiety and higher importance of appearance were related to greater likelihood of purchasing anti-aging products. Women also described an interesting paradox whereby they report using these products while remaining critical of media messages and embracing the idea of natural aging.

Keywords Women · Anti-aging products · Cosmeceuticals · Appearance · Skin care

Introduction

The purpose of this study is to determine the factors that influence women's decision to purchase "anti-aging" skin care products and the ideas they hold about these products. Past research has identified several psychological factors that are important in the decision to have a cosmetic procedure. However, the role of these factors in the decision to purchase

anti-aging products has not been researched. A regression analysis is used to explore how body satisfaction, aging anxiety, importance of appearance, sociocultural pressures and self-esteem contribute to the decision to purchase anti-aging products in a sample of Canadian women. The growing nature of the anti-aging movement makes this research topic relevant to women in various countries across the world.

Gaining control over aging has been a human ambition since early civilization (Gruman, 1966/2003), and these efforts flourish today, perhaps more than ever (Binstock et al. 2006). Increased accessibility to cosmetic surgeries, the development of several new non-surgical cosmetic treatments, and a new market of scientifically tested "anti-aging" products have provided new ways to respond to an aging appearance. In the medical community, anti-aging refers to a movement that redefines aging as a target for biomedical intervention (Mykytyn 2006). From a social perspective, the anti-aging movement reflects a shift from aging as a natural process experienced by all to a process that is met with increasing cultural disdain, and one that should be remedied (Bayer 2005). North Americans are exposed to an idealized image of beauty in the media, and this image often equates beauty with a youthful appearance. The impact of these messages falls disproportionately on women (Hargreaves and Tiggemann 2004), since there seems to be a "double standard of aging" whereby aging is seen as negative for women's appearance, but as neutral or positive for men's appearance (Halliwell and Dittmar 2003). As a result, older women are underrepresented and more negatively portrayed in popular movies (Bazzini et al. 1997) and television commercials (Ganahl et al. 2003) than older men. Women also report higher discrepancies between their real and ideal self in relation to body image, compared to men (Muth and Cash 1997). These findings may partially explain why the vast majority of people who pursue cosmetic procedures and use anti-aging products are women.

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Hurd Clarke and Griffin (2008) use the term “beauty work” to refer to the range of appearance-enhancing products and procedures available to women, including cosmetic surgeries, hair dye, make-up and non-surgical procedures such as Botox®. One motivation for using these products is in an attempt to conceal or reverse the signs of aging. Within this body of literature a debate exists among theorists about the nature of women’s intentions for engaging in beauty work. One side argues that women who engage in beauty work do so in passive adherence of the cultural standards of beauty for women in a patriarchal society, whereas the other suggests that women’s use of appearance-enhancing procedures is a freely chosen endeavor that can have empowering effects (See Negrin 2002 for a review). Qualitative studies in this area elucidate North American women’s views regarding the various types of beauty-related procedures available to obtain a more youthful appearance. Women report that “anti-wrinkle” creams fit in with the idea of aging naturally, while cosmetic surgeries and non-surgical procedures such as Botox® often do not (Hurd Clarke and Griffin 2007). This line of research exposes the nuances of women’s ideas about cosmetic procedures as opposed to positioning the experience as either oppressive or liberating.

Attempts to control aging have become increasingly linked to science and medicine, and the cosmetic industry is capitalizing on this trend by giving its products a more scientific appearance. For instance, a new buzzword in the cosmetics industry is the term “cosmeceutical,” which represents the marriage of cosmetics and pharmaceuticals. That is, cosmeceuticals are cosmetic products with biologically active ingredients purporting to have medical or drug-like benefits. Often, these products are marketed as having anti-aging effects. Dermatological research suggests that the bioactive ingredients used in cosmeceuticals do indeed have benefits beyond the traditional moisturizer (e.g., Chen et al. 2005). However, despite the reports of benefits from some cosmeceutical products, the term cosmeceutical remains a marketing term, as there are no requirements to prove that the products actually live up to their claims. Therefore, it is up to the consumer to decide whether these claims are valid and worth the cost.

Although we have seen exponential growth in anti-aging medicine and products, the behaviors and attitudes of the consumers of these products have gone virtually unstudied (Binstock et al. 2006). Marketing research presented in the popular media suggests that women over the age of 50 are prepared to use anti-aging products more than any other demographic (Capitalizing on the Cosmeceutical Market 2007), but there are also suggestions, at least in the popular media, that women are beginning to purchase these products at progressively younger ages (Katsigiannis 2005). What factors influence women’s decision to purchase anti-aging products? How do women feel about these

products and the relationship to aging? These are the central questions addressed in this study.

To our knowledge there has been no previous study of the factors involved in the decision to purchase anti-aging skin care products; however there has been a wealth of research conducted on attitudes about cosmetic procedures. Theoretical explanations in the psychology literature highlight body image dissatisfaction as a central factor in the decision to pursue cosmetic surgery (Sarwer et al. 1998). Studies suggest that the acceptance of cosmetic procedures may be more related to fears about becoming unattractive than a desire to be more attractive (Henderson-King and Henderson-King 2005). Individuals who undergo or are considering cosmetic medical procedures typically have higher body image investment (e.g., Delinsky 2005), defined as the degree to which an individual’s physical appearance is important in defining the self, and the extent to which thoughts, beliefs and actions are focused on physical appearance (Cash 2006). However several studies demonstrate that women’s endorsement or pursuit of cosmetic medical procedures is related to a higher dissatisfaction with the specific body part or feature for which they are seeking surgery, rather than dissatisfaction with their body image overall (e.g., Delinsky 2005; Didie and Sarwer 2003). Therefore, it may not be a global dissatisfaction with body image that predicts the pursuit of various types of beauty work, but rather dissatisfaction with a particular body part or aspect of physical appearance.

In terms of purchasing anti-aging products, the specific concern related to this decision may be dissatisfaction with aging and not overall body image. Academic research has demonstrated that a change in one’s physical appearance with age is one dimension that causes anxiety about aging (Lasher and Faulkender 1993). Expectations about aging also appear to influence the future health and health behaviors of older adults (Sarkisian et al. 2005). In fact, a recent study of women in mid-life suggested that aging anxiety is a unique predictor of social motivations toward cosmetic procedures (Slevec and Tiggemann 2010).

Numerous factors have been theorized as having an effect on the attitudes we have towards our bodies, and thus on the behaviors related to maintaining our appearance. Greater exposure to media images is shown to correlate with having an idealized image of women’s bodies (i.e., smaller waist and larger breasts), and predicts greater approval of cosmetic surgery (Harrison 2003). Also, often anecdotally implicated in the pursuit of a younger appearance is the desire to begin or maintain a romantic relationship. Research has demonstrated that women have a more positive body image when they feel that their appearance matches their partner’s expectations (Szymanski and Cash 1995), and that women who have been teased about their appearance by a romantic partner are more likely to have pursued cosmetic

medical treatments than women who had not been teased (Schofield et al. 2002). Sociocultural pressures such as these are shown to increase body dissatisfaction (Stormer and Thompson 1996), which is indicated as an important factor in predicting attitudes toward cosmetic procedures.

In a sample of older women, some report using cosmetic procedures to increase their self-esteem and body image, while others express concern about the physical risks or how using these products can devalue the process of aging (Hurd Clarke et al. 2007). In the current study we assessed women's self-esteem to determine its role in women's likelihood of purchasing anti-aging products. Previous research shows that women who are about to have a cosmetic medical procedure have lower self-esteem than a control group (Hueston et al. 1985), which may lead to the hypothesis that women with lower self-esteem would also be more likely to purchase anti-aging products. However, research also indicates that one's evaluation of body image is the single most important predictor of self-esteem (Harter 1999). Therefore, inasmuch as the use of certain products may be improving appearance and/or increasing one's body image, there is the potential that high self-esteem may also be related to the use of anti-aging products. This is one aspect that we will investigate in the current research.

Given the many unanswered questions regarding women's decisions to purchase anti-aging products and the lack of empirical research on the topic, we approached this study with the goal to explore the individual factors that influence women's use of and decision to purchase anti-aging products. We used a two-prong approach to study this topic and utilized both quantitative and qualitative methods. The quantitative analyses tested three main hypotheses. First, given the increased association between scientific testing and cosmetics, we hypothesized that women would report increased spending habits for products that had been scientifically tested as opposed to products that contained active or natural ingredients (*Hypothesis 1*). Further, since skin care products are non-invasive procedures, we hypothesized that using anti-aging skin care products would be seen as more acceptable than other anti-aging procedures such as Botox® (*Hypothesis 2*).

Our main goal of this study was to explore the factors that contribute to women's likelihood of purchasing anti-aging products. Based on previous literature on cosmetic procedures we specifically investigated body satisfaction (e.g., Sarwer et al. 1998), aging anxiety (Slevec and Tiggemann 2010), importance of appearance (e.g., Cash 2006), sociocultural pressures (e.g., Stormer and Thompson 1996), and self-esteem (e.g., Hurd Clarke et al. 2007) as predictors of purchasing anti-aging skin care products. Also, since anecdotal evidence suggests that older women are more likely to purchase these products (Capitalizing on the Cosmeceutical Market 2007) and the cost of these products is often high, we controlled for age and personal annual income in the first

block of the regression. We hypothesized that older women (*Hypothesis 3*) with a higher annual income (*Hypothesis 4*) would be more likely to purchase anti-aging products. In terms of the psychological variables we hypothesized that body dissatisfaction (*Hypothesis 5*), as well as aging anxiety (*Hypothesis 6*) would predict a greater likelihood of purchasing anti-aging products. In addition we hypothesized that importance of appearance (*Hypothesis 7*) and internalization of sociocultural pressures to maintain appearance (*Hypothesis 8*) would be related to greater purchasing behavior. Finally, the role of self-esteem in beauty work has yielded mixed results. We believe the use of anti-aging products to represent appearance maintenance, rather than appearance altering behavior. In previous research, higher self-esteem has been related to appearance maintenance (Hurd Clarke et al. 2007; Harter 1999), and therefore we predicted that higher self-esteem would be associated with greater purchasing of anti-aging products (*Hypothesis 9*). In addition, we asked women for qualitative information about their reasons for purchasing or not purchasing these types of products and what it means in relation to their ideas about aging.

Method

Participants in the current research were 304 Canadian women, recruited both online ($N=206$) and at an Anti-Aging Show ($N=98$), who ranged in age from 19 to 73, ($M=40.5$, $SD=12.9$). A multivariate analysis of variance (MANCOVA) was conducted to compare participants from the two recruitment strategies. Compared to the participants recruited online ($M=36.85$), participants recruited from the Anti-Aging Show ($M=48.33$) were significantly older, $F(8, 241)=52.70$, $p<.001$. Participants recruited at the Anti-Aging show were also significantly more like to purchase anti-aging products ($M=5.58$) than participants recruited online ($M=4.22$), $F(8, 241)=29.92$, $p<.001$. The recruitment groups did not significantly differ on any of the other predictor variables. Participants predominantly identified as White/Caucasian (87.8%) and heterosexual (95.1%). The majority of the sample was either married (47.7%), engaged (3.3%), or living with a partner (9.9%). The remaining participants were single (23.4%), divorced (6.2%), separated (4.3%), or widowed (2.3%). Participants had a diverse range of occupations and their approximate average personal annual income was \$52,000. In general, the sample was educated with half (49%) having a college or university degree, and 12% having a graduate degree.

Participant recruitment for the current study was two-fold. A link to the online survey was sent out via email to the primary researcher's contact list. Recipients of the email were asked to forward the link to women on their contact lists. The link directed women to an online informed consent page and

those who indicated an agreement to participate were directed to the survey. Women who participated in the online survey were entered into a draw to win \$500. As an attempt to sample women with diverse ages and experience with anti-aging products, the researchers also recruited at the Anti-Aging Show in Toronto, Ontario, Canada. The first author and a female research assistant occupied a booth at the show for three days, and asked female attendees of the show to participate in the survey. Participants may also have learned about the study through signage at the booth or word of mouth from other attendees, therefore it is not possible to calculate an exact response rate. Participants could opt to complete the survey on one of the computers provided or use paper and pencil.

Participants in both recruitment groups completed the survey in the same order; quantitative measures followed by open-ended qualitative questions. All those who participated in the survey at the Anti-Aging Show were entered in to a draw to win a weekend spa getaway. The inclusion criteria for both recruitment strategies were that participants had to be English-speaking women aged 18 and older.

Quantitative Measures

Demographic Information

Participants were asked a series of demographic questions including age, relationship status, education, and annual income.

Purchase of Anti-Aging Products

The dependent variable used in the regression analysis was a single item about the general likelihood of purchasing anti-aging products: “How likely are you to purchase anti-aging skin care products?” In addition, participants were asked about factors related to their purchase of these products. Participants were asked to indicate how likely they would be to spend additional money on a product if it fit into the following categories: the product was scientifically tested, the product contained active ingredients, the product contained natural ingredients. All of these items were rated on a 7-point scale from 1 (*not at all likely*) to 7 (*very likely*). A higher score on these questions indicated a greater likelihood. Participants were also asked about their knowledge of the term “cosmeceutical.” Two yes or no questions were included in the survey: “Have you heard the term ‘cosmeceutical’?” and “To your knowledge, have you ever purchased a product that was termed a ‘cosmeceutical’?”

Acceptability of Anti-Aging Products

Participants responded to questions about how acceptable they felt it was to engage in certain beauty work as they

aged. Participants were asked to rate on a 7-point scale from 1 (*completely unacceptable*) to 7 (*completely acceptable*): “How acceptable do you feel it is to use each of the following products or procedures?” The products and procedures included: makeup, hair dye, Botox® injections, injectible fillers, and chemical peels. A higher score on these items indicated greater acceptance.

Self-esteem

Participant’s self-esteem was measured using the 10-item Rosenberg Self-Esteem Scale (1989). Items are rated on a 4-point scale from 1 (*strongly agree*) to 4 (*strongly disagree*) and include “On the whole, I am satisfied with myself” and “I am able to do things as well as most other people.” A mean score was calculated for each participant and scores were coded with higher scores indicating higher self-esteem. The scale yielded good reliability in this sample ($\alpha=.82$).

Body Satisfaction

Seven items assessing body image and body satisfaction (Stone et al. 2007) were included in the survey. Each item was rated on a 5-point scale from 1 (*definitely disagree*) to 5 (*definitely agree*). Due to the low internal reliability for the seven items ($\alpha=.28$), we examined the item-total correlations. Three of the items that referred to how others viewed one’s body revealed had negative item-total correlations ($-.16$ to $-.19$), and therefore we dropped these items. The four-item version of the scale yielded good reliability ($\alpha=.84$). The items that were retained assessed women’s own image of their body and how satisfied they were in general: “I like my looks the way they are,” “My body is sexually appealing,” “I dislike my physique (reverse coded),” and “I am physically unattractive (reverse coded).” Participant’s score was the mean of their scores on the four retained items. A higher scores indicating greater body satisfaction.

Importance of Appearance

The 20-item Appearance Schemas Inventory-Revised scale (ASI-R; Cash et al. 2004) was included to assess how important participants rated their appearance. All items were measured on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Despite having high reliability in previous samples ($\alpha=.88$; Cash et al. 2004), this was not replicated in the current sample ($\alpha=.47$). Seven items on the scale had negative item-total correlations ranging from $-.027$ to $-.424$. These items related to participant’s perceptions of how others were evaluating their appearance (e.g., “When I meet people for the first time, I wonder what they think about how I look”) and how much their appearance had contributed to

success or misfortune in their lives (e.g., “My appearance is responsible for much of what’s happened to me in my life”), and these did not seem to fit in well with the construct underlying the remaining scale items. After removing these negatively correlated items, the scale yielded good reliability ($\alpha=.73$). Two sample items from the items retained are: “Before going out, I make sure that I look as good as I possibly can” and “What I look like is an important part of who I am.” Participant’s score was the mean of their scores on the 13 items that were retained. A higher score indicated greater importance of appearance.

Aging Anxiety

The Physical Appearance subscale of the Anxiety About Aging Scale (Lasher and Faulkender 1993) was used to measure participants feeling about age-related changes to their appearance. Participants were asked to rate the accuracy of five statements on a 5-point scale from 1 (*definitely disagree*) to 5 (*definitely agree*). A sample item is “I have never dreaded the day I would look in the mirror and see grey hairs.” The items were coded so that higher scores indicated greater anxiety about aging. Participants score was a sum of their item scores. The internal consistency was adequate ($\alpha=.70$), which is comparable to previous samples ($\alpha=.71$; Lasher and Faulkender 1993).

Sociocultural Pressures

The 8-item *Perceived Sociocultural Pressure Scale* (PSPS; Stice et al. 1996) was used to measure the amount of pressure participants feel from the media and other people in their lives to maintain or improve their appearance. Items were rated on a 5-point scale from 1 (*none*) to 5 (*a lot*) and included: “I have felt pressure from my family/friends/the media to improve my appearance.” The scale yielded good reliability in the current sample ($\alpha=.82$). A mean was calculated for each participant, with a higher score indicating greater sociocultural pressures.

Qualitative Measures

To obtain more detailed information about women’s views and expectations of anti-aging products the responses to a series of open-ended questions were analyzed using thematic analysis (Braun and Clarke 2006). Braun and Clarke outline six main steps for conducting a thematic analysis that were followed in the current study: 1) Familiarize yourself with the data; 2) Generate initial codes; 3) Group codes into themes; 4) Review themes (generate a thematic ‘map’ of the data); 5) Define and name themes 6) Select excerpts and produce the report (p. 87). The goal of the current analysis was to identify the general

themes in the entire data set, as opposed to focusing on one specific aspect. Additionally the analysis was inductive, in that the themes were strongly linked to the data and did not fit into a pre-existing theoretical framework. A semantic approach was taken to the analysis and the data were organized to show patterns in semantic content and interpreted based on broader meanings and implications.

Participants were asked four open-ended questions: 1) What are your reasons for using or not using anti-aging products? 2) What do you look for in products that you are purchasing? 3) What are some ideas that come about anti-aging products? 4) What does it mean to you to age naturally or gracefully and how does this relate to your use of anti-aging products? The open-ended questions were included in the online survey and respondents typed their answers to each question. Of the 304 participants, 280 (92%) responded to question one, 249 (82%) responded to question two, 234 (77%) responded to question three and 257 (85%) responded to question four. At the end of the survey participants were asked one additional open-ended question: “Do have any other comments you would like to share?” Sixty-seven participants (22%) included an additional comment and these were also coded in the thematic analysis.

The primary female researcher coded the responses to the open-ended questions and over several readings organized the codes into six final themes. An independent female researcher who was not otherwise involved in the study analyzed the data using the six themes and the option to code as not matching any of these themes. A comparison of the coding indicated good interrater reliability (Cohen’s $\kappa=.92$).

Results

Women’s Perceptions of Anti-Aging Products

To test hypothesis 1, we used a repeated-measures analysis of variance (RMANOVA) to compare product characteristics that influenced the amount women would spend on anti-aging products. Significant differences were found between the influence of scientific testing, active ingredients and natural ingredients, $F(2, 301)=12.11, p<.001$. Post-hoc tests using a Bonferroni correction revealed the nature of these differences. While all factors considered were rated as relatively important in influencing the amount spent on an anti-aging product, scientific testing of a product was slightly, but significantly, less important ($M=5.22, SD=1.63$) to women’s spending intentions than if the product contained active ingredients ($M=5.66, SD=1.22$), $t(302)=-4.84, p<.001$, or was made with natural ingredients ($M=5.59, SD=1.34$), $t(302)=-3.56, p<.05$. We found no significant difference in women’s spending intentions for products containing active ingredients and products made with natural ingredients,

$t(302)=-1.17, p=.24$. Therefore, hypothesis 1 was not supported. Of the product characteristics that we asked about in the current study, scientific testing was the least likely to increase women's spending intentions. Similarly, the term "cosmeceutical," which implies scientific advancement, did not resonate with the majority of the sample. Only 21% of the women reported knowing this term and only 15% reported purchasing a product termed a "cosmeceutical." However, the majority of the sample (66.8%) was at least somewhat likely to purchase anti-aging skin care products.

To test hypothesis 2, we conducted an RMANOVA to understand how acceptable participants believe that it is to use anti-aging products compared to other types of beauty work. The RMANOVA indicated that there were significant differences, $F(4, 299)=153.82, p<.001$, in acceptability across the categories of beauty work. Post-hoc tests using a Bonferroni correction ($p<.01$) indicated that using anti-aging products ($M=6.66, SD=.90$) was just as acceptable as wearing make-up ($M=6.76, SD=.72$), $t(302)=-2.89, p=.04$ (non-significant with Bonferroni correction), or using hair dye ($M=6.70, SD=.85$), $t(302)=-1.06, p=.29$. However, it was significantly more acceptable to use anti-aging products than to have Botox® injections ($M=4.60, SD=1.98$), $t(302)=11.61, p<.01$, injectible fillers ($M=4.50, SD=1.99$), $t(302)=19.22, p<.01$, or chemical peels ($M=4.88, SD=1.86$), $t(302)=17.49, p<.01$. Therefore, hypothesis 2 was supported.

Predictors of Purchasing Anti-Aging Products

The means, standard deviations and ranges of the dependent and predictor variables are presented in Table 1. The correlations between the predictor variables (body satisfaction, aging anxiety, importance of appearance, sociocultural pressures, self-esteem) and the dependent variable (likelihood of purchasing anti-aging products) are presented in Table 2. As can be seen, age, income, aging anxiety, and importance of appearance were all positively correlated with the likelihood of purchasing anti-aging products. Interestingly, although the sociocultural pressures scale was not significantly related to purchasing anti-aging products, this variable was positively related to importance of appearance and aging anxiety.

Table 1 Means, standard deviations and ranges for main variables.

The total score for the aging anxiety scale is summed; the total scores for all other measures are calculated using the mean of all items.

Variable	Mean	Standard Deviation	Minimum	Maximum
Purchasing "Anti-Aging" Products	4.65	2.13	1.00	7.00
Body Satisfaction	2.66	.90	1.00	5.00
Aging Anxiety	13.37	3.74	5.00	25.00
Sociocultural Pressures	2.46	.81	1.00	5.00
Importance of Appearance	3.08	.48	1.62	5.00
Self-Esteem	2.24	.53	1.30	4.00

A stepwise multiple regression analysis was conducted to explore the factors that predict a greater likelihood of purchasing anti-aging products (See Table 3). The dependent variable was a one-item measure: "How likely are you to purchase anti-aging skin care products?" Both age and income were significantly positively correlated with purchasing anti-aging products, and therefore we included these variables as covariates in the regression model. The remaining independent predictors (body satisfaction, aging anxiety, sociocultural pressures, importance of appearance, self-esteem) were entered together into block two. The size and significance of the Beta values indicate the strength and unique effect of each predictor. Although some of the predictor variables are significantly correlated, a multicollinearity problem was not indicated in the tolerance values (all greater than .72).

Hypothesis 3 was supported and older women were significantly more likely to purchase anti-aging products ($\beta=.36, p<.001$). However, although annual income was a significant predictor in step one ($\beta=.12, p<.05$), it did not remain significant once the other variables were added in block two. Therefore, hypothesis 4 was not supported. After controlling for age and annual income, anxiety about aging ($\beta=.26, p<.001$) and the importance of appearance ($\beta=.20, p<.01$) were the only significant predictors of purchasing anti-aging products accounting for 28% and 21% of unique variance respectively. Therefore, hypotheses 6 and 7 were supported; holding more negative expectations about aging, as well placing more importance on appearance predicted a greater likelihood of purchasing anti-aging products. Hypothesis 5, 8, and 9 were not supported; self-esteem, body satisfaction, and sociocultural pressures were not significant predictors of purchasing anti-aging products in the current sample. The final model was significant, $F(7, 261)=13.02, p<.001$, and accounted for 25% of the variance in purchasing behaviors.

Thematic Analysis of Responses to Anti-Aging Products

Six themes were identified in the data that related to women's feelings and motivations toward using or not using anti-aging products: appearance maintenance, embracing aging, effectiveness, cost, age, routine/self-care. Only the three main themes will be discussed in detail in this manuscript. Themes

Table 2 Correlations among variables.

	<i>AA</i>	<i>Age</i>	<i>Income</i>	<i>BS</i>	<i>A-ANX</i>	<i>SOC-P</i>	<i>APP</i>	<i>SE</i>
Purchasing “Anti-Aging” Products (AA)	–	.38***	.23**	.08	.21**	–.06	.23***	.05
Age		–	.25***	.091	–.10	–.28***	.07	.09
Income			–	–.013	.12	–.09	.03	–.02
Body Satisfaction (BS)				–	–.08	.13*	.23***	.58***
Aging Anxiety (A-ANX)					–	.24***	.09	–.02
Sociocultural Pressures (SOC-P)						–	.36***	.11
Importance of Appearance (APP)							–	.26***
Self-Esteem (SE)								–

* $p < .05$, ** $p < .01$, *** $p < .001$

that were discussed relatively infrequently (i.e., by less than 15% of participants) will not be outlined in detail. See Table 4 for all themes identified and the percentage of the participants who discussed each theme. The percentages provided indicate the percentage of women who endorsed a particular theme out of the total number of participants who responded to at least one of the open-ended questions ($N=280$). The three main themes are further explicated below. Exemplar quotes are provided, along with demographic information about the participant quoted. All names used are pseudonyms.

Appearance Maintenance

The most common reason participants reported for purchasing anti-aging products was to maintain a youthful looking appearance. This is consistent with the finding in the quantitative data that importance of appearance is a significant predictor of purchasing anti-aging products. Participants discussed using these products to “help stop the aging process” (Margaret, age 62, white/Caucasian, married, high school diploma, less than \$20,000 per year) and to maintain a “youthful appearance” (Anna, age 41, Portuguese, married, high school diploma, \$40,000–49,999).

The reduction or prevention of wrinkles was an important aspect of maintaining a youthful appearance. Participants of all ages mentioned goals of “lessening the look of wrinkles” (Michelle, age 48, white/Caucasian, married, college degree, over \$100,000) and “keeping wrinkles as small as possible” (Gina, age 58, white/Caucasian, divorced, university degree, \$50,000–59,000). Participants in their 20s mentioned that they were already thinking about wrinkle prevention. Sally said “I don’t want to look old – I hate wrinkles” (age 27, white/Caucasian, engaged, graduate degree, \$30,000–39,000). Jennie stated, “I use products now to prevent wrinkles and lines as I age” (age 25, white/Caucasian, serious relationship, university degree, \$40,000–49,999). And Lily mentioned using anti-aging products because “I am getting wrinkles, and have age/sun spots” (age 24, white/Caucasian, serious relationship, university degree, \$30,000–39,999).

One factor that seemed to underlie appearance maintenance considerations is that women related their physical appearance to their general well-being. Women who endorsed this idea stated that when they looked better, they also felt better:

I spend a lot of money on my skin care products. I probably spend nearly \$350 every couple months to replenish my supplies. I do notice that these products

Table 3 Stepwise multiple regression of the predictors of purchasing “Anti-Aging” products.

Predictors	Adjusted R^2	β	t	p
Step 1	.16			
Age		.36	6.18	.000
Income		.12	2.05	.041
Step 2	.25			
Age		.38	6.05	.000
Income		.08	1.31	.162
Body Satisfaction		.04	1.05	.559
Aging Anxiety		.26	4.52	.000
Sociocultural Pressures		–.06	–.45	.345
Importance of Appearance		.20	3.21	.002
Self-Esteem		–.09	–1.16	.193

Table 4 Themes identified in women's discussion of anti-aging products.

Themes	Description	Percentage
Appearance Maintenance	Participants discussed the use of “anti-aging” products as related to an attempt to maintain a youthful appearance.	52%
Embracing Aging	Aging was discussed as something that is natural and inevitable. Participants felt that women should embrace their age. However, women also felt that this could include using certain products to assist with looking and feeling better.	38%
Effectiveness	Participants discussed the effectiveness of these products. Most commonly the effectiveness was questioned and products were thought to be “gimmicky.”	26%
Cost	Participants mentioned that the high cost of “anti-aging” skin care products makes them less accessible. While several participants reported spending a great deal of money on skin care products, the high cost was most often mentioned as a reason for not purchasing these products.	12%
Age	The current sample includes a broad age range. Therefore, some participants mentioned that they were too young to start purchasing “anti-aging” products. However, young women differed in the future intentions they discussed. Some felt it was best to start using these products early to maintain their youthful appearance, while others did not have intentions to use these products in the future. These various intentions are captured by the others themes.	9%
Routine/Self-Care	A small percentage of the women in the sample discussed using skin-care products as part of a self-care regime and did not mentioned appearance specifically. Instead they mentioned caring for their skin by cleaning, moisturizing and using sunscreen. The benefits were related to the health of the skin rather than the appearance.	7%

make my skin appear tighter, smoother and more even. I feel more confident when my skin looks good (Allie, age 28, white/Caucasian, single, university degree, \$50,000–\$59,999).

Skin care products are great – it's important for a person to take care of themselves and take pride in their looks because when you look better you feel better about yourself (Bronwyn, age 38, white/Caucasian, single, college degree, \$40,000–49,999).

As can be gleaned from the previous excerpts, for many women looking “better” meant looking “younger.” Further, looking young was often equated with being young. Participants talked about using products to “stay young” (Irene, age 65, white/Caucasian, married, college degree, \$30,000–\$39,999) and to “keep myself younger” (Julie, age 43, white/Caucasian, married, college degree, \$30,000–\$39,999).

Unlike cosmetic surgeries and other non-surgical cosmetic procedures (e.g., Botox®), women did not expect anti-aging products to have a drastic effect on their appearance. Instead participants discussed using products to “maintain” or “preserve” the look of their skin. Participants also described using the products as “prevention” against aging, which might explain use in younger participants. Although the quantitative data indicates that older women are more likely to purchase anti-aging products, the qualitative data suggests that this may be starting at earlier ages as younger women in our sample were also contemplating or currently using these products.

Embracing Aging

Despite many participants' indication that they used products to look and feel younger, a fair proportion of respondents also

talked about the importance of embracing aging. In fact, participants' ideas about “natural” and “graceful” aging often included appearance maintenance strategies. These respondents stressed that physical appearance should not become an obsession, but maintaining an appearance that makes you feel good is an important part of taking care of yourself. One participant noted, “It means a great deal to age naturally and gracefully if I am in good health and look good inside out” (Lana, age 58, West Indian, married, college degree, did not indicate income). Another participant defined natural aging as: “Caring for our looks but accepting our appearance. Knowing we are more than what we look like and having confidence in ourselves as people” (Genevieve, age 43, French Canadian, living with partner, college degree, \$40,000–\$49,999). As such, women felt that they could embrace aging and still care about their appearance.

Often, surgery was not seen as part of natural aging, but the use of cosmetics could be. Aging naturally more often meant, “no surgeries, but maintaining your system properly; taking care of yourself without drastic procedures” (Ella, age 49, white/Caucasian, single, undergraduate degree, \$30,000–\$39,999). One participant described it as “being healthy, happy and fit without cosmetic surgery. I think one can age naturally and still use cosmetics and hair dye and wear fashionable clothing” (Maggie, did not report age, white/Caucasian, single, Master's degree, \$70,000–\$79,999).

Some respondents indicated that an important part of embracing your age was to avoid becoming obsessed with looking younger or trying to “cheat” time. To one woman, embracing your age was “accepting those physical changes that come with age, and not becoming desperate to look younger” (Sarah, age 27, white/Caucasian, living with partner, undergraduate degree, \$40,000–49,999). Another

participant challenged women to redefine their idea of what was beautiful:

Women should accept the natural aging process and stop worrying about doing anything and everything in order to appear young. Be who you want to be, and do not change your appearance for others ... also realize that younger is only represented as better for women ... know that wrinkles, grey hair etc are natural and beautiful in their own way (Jasmine, age 22, white/Caucasian, single, undergraduate degree, \$20,000–29,999).

A few women in the current sample were critical of the media's portrayal of aging women, and believed that using these products represented acceptance of these messages. However, caring about one's appearance and choosing to use certain products was not always perceived to be synonymous with accepting the media's messages about aging and beauty. One example of a respondent being critical of the societal standards of beauty while still being conscious of their appearance is:

I use make-up and hair dye and I like clothes. I like to dress well, but I am not dependent on any of that for my feelings of well-being. I resent the beauty industry and the media for trying to make women feel they don't measure up if they don't fit the stereotype beauty mould (Agnes, age 57, white/Caucasian, married, high school diploma, \$60,000–69,999).

In sum, this theme represented women's desire to look and feel their best without devaluing the aging process or becoming obsessed with these goals. Perhaps in this way, the use of anti-aging skin care products is perceived as a strategy that allows women to maintain a youthful appearance, if that is what they desire, without going to "drastic" measures such as cosmetic surgeries or injections. In the regression analysis, aging anxiety (specifically related to appearance) was predictive of purchasing anti-aging products. It seems then that the women in the current sample want to maintain a youthful appearance, but at the same time remain positive about the aging process. Many women described it as acceptable to engage in some appearance maintenance activities (such as using anti-aging products) as long as aging was still considered a natural process.

Effectiveness

Although a key reason for using or to consider using anti-aging products was to maintain a youthful appearance, few participants actually felt these products worked well. Only 3% of respondents in the current sample stated that they used anti-aging products because they felt they were effective. It was more common for participants to question the effectiveness of these products and suggest that anti-aging products are

gimmicky. One participant described that it is challenging to determine the effectiveness of anti-aging products: "There seem to be so many different products on the market it is hard to know which ones really work and are worth the money" (Susan, age 40, white/Caucasian, married, Master's degree, \$50,000–59,999). Another participant echoed this feeling: "Most of them [anti-aging products] seem like gimmicks to me" (Erienne, age 26, white/Caucasian, living with partner, undergraduate degree, \$20,000–29,999).

Although participants often questioned the effectiveness of these products, the majority of the sample (67%) was at least somewhat likely to use them. One woman wrote, "I am smart and educated and fairly confident yet I still pay a lot for skin care products!" (Lisa, age 34, white/Caucasian, married, Master's degree, \$60,000–69,999) Another woman indicated, "I use them as a preemptive measure. Although I'm skeptical that anti-aging products actually work" (Erika, age 24, white/Caucasian, single, law student, \$30,000–39,999).

This finding suggests an interesting paradox by which women, on one hand, questioned the effectiveness of anti-aging products (and felt they were overpriced) but, on the other hand, still purchased and used them. However, women who used these products wanted to be more confident in their effectiveness and suggested that the cosmetics industry should be more accountable for their claims.

I wish they wouldn't come out with something "supposedly miraculous" every other day. They should explain the products and their effects better and not try to sell us with ridiculous wording, claims and promises—be more respectful of our intelligence (Donna, age 53, white/Caucasian, living with partner, some university, variable income).

I wish that the cosmetic/skin care industries were forced to adhere to higher standards. In general, I feel that I live in a complex world that doesn't afford the time to learn about all the things I need to know in order to take better care of myself ...It would be nice if I could trust the labels on the things I purchase (Rebecca, age 41, Portuguese, married, education in ethnic and classical dance, less than \$20,0004).

Discussion

Recent years have witnessed a commercial and clinical movement that has increased the offering of anti-aging products and interventions (Binstock et al. 2006). However, little is known to date about the attitudes and behaviors of the targeted consumers who are typically women and often concerned about the physical consequences of aging. The current study was an initial attempt to explore women's use

and perception of products marketed as “anti-aging.” Women were the focus of the current research as pressure to remain youthful is typically more salient in the lives of women (Halliwell and Dittmar 2003; Hargreaves and Tiggemann 2004; Muth and Cash 1997). Perhaps not surprisingly, and consistent with past research on factors associated with the likelihood of contemplating cosmetic surgery (Cash 2006; Delinsky 2005; Didie and Sarwer 2003), the likelihood of purchasing anti-aging products was significantly increased for women whose appearance is more important to them and who experience more anxiety about aging. These factors significantly predict purchasing intentions above and beyond the influence of age and annual income.

Consistent with the quantitative findings, the most common reason women reported in the qualitative data for using anti-aging products is to achieve or maintain a youthful appearance. However, very few women perceived anti-aging products to be effective. It was more common for women to report their skepticism about the effectiveness of these products and believe them to be gimmicky. Despite questioning the effectiveness of these products, the majority of women in the sample were at least somewhat likely to purchase anti-aging products. Perhaps this finding can be seen as parallel to findings regarding health locus of control and health behavior. Research demonstrates that those who feel they have more control over their health will engage in more health related behaviors (See Norman et al. 1998 for a review). A feeling of control over the aging process may explain why women purchase anti-aging products despite questioning their effectiveness. Of course, the paradox described could simply be associated with some degree of risk management. While the effectiveness of the anti-aging products may be suspect, women may still purchase them just in case they turn out to be effective. In other words, doing something may be perceived as a better strategy than doing nothing.

Binstock and his colleagues (2006) identify consumer protection as an important social concern of the anti-aging movement because the efficacy of some products and interventions has not been established with traditional clinical evidence. However, they also suggest that we cannot discount the beneficial results through placebo effects. While participants discussed using products to reduce fine lines and wrinkles, they more often focused on how using these products, in conjunction with a healthy lifestyle, helps them to both look and feel better. Despite scientific claims being increasingly embedded in the marketing of anti-aging products, research has found that individuals are often skeptical of these claims (Dodds et al. 2008). When women reported the product factors that are influential in their decision to purchase anti-aging products, scientific testing of the product was the least important factor. This seems to parallel the finding that women generally question the effectiveness of these products.

Female consumers report desiring more information about product effectiveness, while simultaneously remain skeptical about the information provided.

In response to the qualitative questions, women frequently commented that the use of anti-aging products is distinct from intentions to pursue cosmetic surgery. In general, the current sample of women felt that using anti-aging products was very acceptable, as acceptable as using makeup and hair dye. Using anti-aging products appeared to fit in with ideas about aging naturally, whereas surgical and non-surgical cosmetic interventions primarily did not. In a previous study of beauty work and aging, women perceived surgical and non-surgical procedures as unnatural or as an overly drastic measure, while cosmetics, anti-wrinkle creams and hair dyes were normative and in some cases necessary aspects of women’s beauty work (Hurd Clarke and Griffin 2007).

In the feminist literature, ideas about women’s appearance-related behaviors are often positioned as either oppressive or empowering (Negrin 2002). However, when we polarize these perspectives we lose many of the complexities of women’s experiences. In the current study, women described an interesting paradox whereby they report using anti-aging products while remaining critical of media messages and embracing the idea of natural aging. Feminist women are somewhat more resistant to internalizing unrealistic cultural ideals, however they are not altogether resistant to body concerns (Murnen and Smolak 2009). Feminism or a critical consciousness regarding societal ideals seems to offer women an alternate means to interpret and resist sociocultural pressures. However despite “knowing better” feminist women still experience some body shame and report engaging in appearance-enhancing behaviors (Rubin et al. 2004). In the current study, there was tension in women’s accounts between resisting negative messages in the media about aging and using products that may help to maintain a young-looking appearance. Rubin et al. (2004) suggest that rather than “passively receiving or radically resisting cultural messages” about beauty ideals women are constantly negotiating feelings and behaviors relate to their body and appearance (p. 30). In the current study we did not measure gender role attitudes or feminist identity, but given the current findings this is a noteworthy area for future research.

The current study is an initial attempt to understand women’s perceptions of anti-aging products, but more and more products are being marketed toward men and it will be important for future research to explore the impact of this anti-aging movement on men. Further, while the current sample was diverse in terms of age, the participants were relatively homogenous in ethnicity and sexual orientation. Women in the current sample discussed media and cultural ideals of beauty as perpetuating the anti-aging movement. The purchase of anti-aging products is linked to sociocultural ideals about aging, and important information

can be gleaned from exploring this topic cross-culturally. An additional limitation of the current study was the initial low internal consistency scores of two of the measures (body satisfaction and importance appearance), suggesting that these measures may not be assessing one single construct. In the current sample, the low internal consistency seemed to relate to a difference in items assessing women's self-perceptions and items that related more to the perceptions of others. It will be beneficial for future studies on women's beauty work to explore the nuances between self-motivations and sociocultural and media influences in the pursuit of cosmetic products and procedures.

It seems that using anti-aging products can be seen as a less drastic response to an aging appearance than cosmetic surgery. Products may not be as effective as other cosmetic procedures but their use seems to offer a sense of control over appearance, while still fitting in with the idea of natural aging. Further exploration of the relationship between using anti-aging products and a locus of control is warranted. Future research in this area can also explore the nuances of women's feelings about the beauty work in which they engage. As the anti-aging movement continues to grow, it becomes more important to understand how women are responding to this movement.

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