Who experiences “America the beautiful”?:
Ethnicity moderating the effect of acculturation
on body image and risks for eating disorders
among immigrant women

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Received 30 July 2005; received in revised form 1 March 2006; accepted 9 March 2006

Abstract

As body ideals are culturally constructed, how do ethnicity and acculturation affect body attitudes and risks for eating disorders (ED)? The present cross-sectional study explored this question among 353 women including samples of seldom-investigated ethnic groups. Assessments were made on self and body image, risks for ED and multiple measures of acculturation. Among first generation immigrants, Chinese had the lowest and Afro-Caribbeans the highest self and body image but ethnicity alone had no effect on disordered eating. Acculturation resulted in less healthy attitudes among the Eastern-Europeans but more healthy attitudes among the Chinese. In comparing immigrants with later generations, European-descended women persisted in less healthy attitudes while African-descended women held more positive body attitudes and lower risk for eating pathology. Implications for generational and ethnically sensitive body-related intervention programs are discussed.

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Keywords: Ethnicity; Acculturation; Immigration; Eating disorders; Body image; Body esteem; Caribbean; Chinese-American; Eastern-European
1. Introduction

Immigrants undergo a process of cultural transition in which their attitudes, beliefs, values, and behaviors change as they adapt to their new home country. This adaptation process is referred to as acculturation (Graves, 1967) although recent conceptualizations suggest a more complex and nuanced intersection of maintenance of attitudes from the country of origin and adaptation of attitudes from the new home country (Trimble, 2003). Growing attention has been paid to the role of multi-directional acculturation on the mental and physical health of immigrants living in the US (Myers & Rodriguez, 2003). The majority of this research has focused on mental health outcomes among Mexican-American and Latina populations. However, a small but growing literature has examined the role of acculturation on body attitudes, physical health and disease, again with a focus on Hispanic women. Three other immigrant groups, Chinese, Afro-Caribbean and Eastern-European deserve examination both due to their growing population numbers in the most recent wave of late-20th century immigration (US INS Statistical Yearbook, 2004) and to their body ideals which differ from those of the dominant White US culture. Currently, college-aged women representing these three groups can be delineated into either first (immigrants) or second generation (children of immigrants) Americans.

Past research on the predictors of body attitudes and health can generally be categorized into those which focus on ethnicity or on acculturation processes. Our model is one which examines the interaction of culture of birth country with the level of acculturation to the country of immigration on body attitudes and eating disorder risks. The following review of the extant literature focuses first on body norms (both distinctions among cultures and within immigrant communities), then on predictors of disordered eating and finally, on the effects of acculturation.

2. Literature review

2.1. Culture and body norms

Among the new values and norms to which immigrants are exposed are those pertaining to the culturally ideal body type of Americans and standards of physical attractiveness. Weight is an essential element in the conception of physical attractiveness for many cultures but each differs in their preferences. Among African women, Furnham and Baguma (1994) compared British and Ugandan ratings of male and female figures and found that Ugandans rated obese female figures as more attractive than did the British. Similarly, Cogan, Bhalla, Sefa-Dedeh, and Rothblum (1996) found that women from Ghana were more likely to rate larger body sizes as ideal compared to US students. Caribbean women of African descent maintained this preference with studies finding obesity associated with satisfaction, wealth and happiness (Simeon et al., 2003).

In traditional Chinese culture, heavy women were evaluated positively (Nasser, 1988) and some contemporary Chinese women view plumpness as a component of the ideal female body shape (Chen & Swalm, 1998). Current studies of Hong Kong Chinese adolescent females find, in comparison with American adolescents, similar body dissatisfaction but lower drive for thinness, and among college-aged Chinese women, lower body dissatisfaction and drive for thinness (Leung, Wang, & Tang, 2004). Chinese women also consistently score lower on self-esteem scales (SE) which may be attributed in
part to the self-effacing nature of Chinese values (Bond & Cheung, 1983). Scant research has investigated body image among Eastern-European women. However, in a comparison of the link between slimness and sexual attractiveness of women rated by Finnish and Russian men, researchers found the slim ideal was held by the Finnish but not the Russians (Haavio-Mannila & Purhonen, 2001).

Some studies have also examined the role of ethnicity and immigrant status within a single country in shaping body preferences. Results indicate that, within the US, Asians and Whites prefer the thin body ideal and Hispanics and African-Americans tend to prefer a larger body size (Molloy & Herzberger, 1998). Black women tend to be less preoccupied with dieting and weight loss and less negative about their body image than White and Latin American women (Cash & Henry, 1995; Miller et al., 2000). Also, African-American women perceived themselves to be more sexually attractive, have higher self-esteem and higher body esteem than the other ethnic groups (Miller et al., 2000).

2.2. Evaluations of the body as predictors of eating disorders (ED)

In the US, thinness is a core body ideal and highly valued (Garner, Garfinkel, Schwartz, & Thompson, 1980). Unfortunately, this ideal is often unattainable and results in negative evaluations of one’s body. Two concepts which have been developed to assess the subjective self-perception of the body, commonly referred to as body image, are body esteem, an overall evaluation of one’s body, and satisfaction with individual parts of the body. General self-esteem is also associated with both body image and ED risks (Mintz & Betz, 1988).

The majority of American women tend to overestimate their body size, and thus view their bodies in self-deprecating ways (Lewis & Donaghue, 1999) which results in general dissatisfaction with their bodies (Cash & Henry, 1995) and poor self-esteem (Matz, Foster, Faith, & Wadden, 2002). America’s obsession with thinness combined with body dissatisfaction, which consistently has been demonstrated to be a risk factor in ED (Altabe & Thompson, 1992), has resulted in negative physical health consequences for an estimated 7 million (predominantly white) females in the US who are afflicted with ED (Eating Disorder Statistics, 2003; Parker, Nichter, Nichter, &Vuckovic, 1995) and many more who are at risk for disordered eating. ED are generally defined as a disturbance in the perception of body shape resulting in restrictive or binge eating/purging patterns (Mintz & O’Halloran, 2000). Among White US women, ED were correlated with low body esteem (Striegel-Moore, Silberstein, & Rodin, 1993) and low self-esteem (Joiner & Kashubeck, 1996) among other factors.

This link between body dissatisfaction, low body esteem, low self-esteem and disordered eating is not found uniformly in other countries or among immigrant samples. Chinese (Pan, 2000) and Japanese (Mukai, Kambara, & Sasaki, 1998) women had lower body esteem than US women but not greater rates of ED and Doan (2001) found that self-esteem and ED symptomology were unrelated among East Asian-Americans. However, among Chinese-Australian women, eating pathology was associated with lower levels of satisfaction with the body. Afro-Caribbean British women, compared to Caucasian British, were less likely to have feelings of depression or anxiety related to disordered eating attitudes (Dolan, Lacey, & Evans, 1990).

One noteworthy gap in this literature is the lack of research examining these variables among American women who immigrated from the Caribbean or from Eastern-Europe,
two of the fastest growing immigrant populations in the northeast US. While Chinese-American body image has been examined, it is often as part of a larger ethnic sample of Asian-Americans (Mintz & Kashubeck, 1999). However, Yates, Edman, and Aruguete (2004) found distinctions among different Asian-American groups. To eliminate ethnic confounds which might obscure the findings, this study focused on Chinese-Americans distinct from other Asian immigrant groups.

In an effort to expand our understanding of the link between self/body image and ED, this study investigated two related research questions among these little-researched populations. The first question we ask is “Do self and body image serve as predictors of ED among first and second generation immigrant populations in the US” (as it is among later generations of White European-American women)? We predict that, in general, immigrant women have not yet been enculturated to the American “thinness” ideal and beauty standard and therefore, no link will be found between self/body esteem or body parts dissatisfaction and risks for ED. Our second research question asks “Are there differences among immigrant groups on self/body image ratings and risks for ED?” Specifically, will differences in body ideal and attitudes of their culture of origin be reflected among Chinese, Afro-Caribbean, and Eastern-European immigrants or will American body norms and desire for thinness be evident among these immigrant populations? We predict that among immigrants to the US, culture of origin differences will persist in self/body image ratings such that Chinese women will be least satisfied with their selves and bodies and Caribbean women most satisfied. However, the current literature does not allow us to predict the risks for ED among these immigrant groups and may be related to acculturation attitudes. These issues will be explored within the current study.

2.3. Acculturation

Extant literature had conceptualized ED as culture-bound syndromes (Prince, 1985). Moreover, these eating disturbances have been understood as specific to Western culture as, in general, women in cultures removed from Western media exposure (Akiba, 1998) or economic development and modernization (Lee & Lee, 2000) had higher body esteem and lower fat concerns.

The rapid cultural changes in the world, through the influence of Western culture and immigration, have shifted our current thinking and understanding of ED from culture-bound to culture-transition syndromes. Thus, the third research query for this investigation asks “What is the role of acculturation to a new country and its consequences for both immigrant and later generations?” Does self/body dissatisfaction and the risks for ED increase as one becomes more American?

Findings from past literature are equivocal. Immigration to a Western country has been identified as a possible risk factor in ED (Geller & Thomas, 1999) as has increased acculturation level. The latter has been found among Hispanic-American girls (Gowen, Hayward, Killen, Robinson, & Taylor, 1999) and other acculturated ethnic minority women (Cachelin, Veisel, Barzegarnazari, & Striegel-Moore, 2000; Chamorro & Flores-Ortiz, 2000).

Other studies find no link between acculturation and ED among Asian- and Chinese-American women (Haudek, Rorty, & Henker, 1999; Pan, 2000). Among East Asian immigrants, acculturation did not predict desire to be thinner, feelings of guilt after eating
nor fear of being overweight (Barry & Garner, 2001). Huang (2001) found that only Asian-American women who more strongly identified with White American culture were more likely to engage in compensatory weight loss behavior but not binge eating. Among African-Americans, evidence demonstrates that they are less likely to internalize the thin ideal than Asian or White Americans (Shaw, Ramirez, Trost, Randall, & Stice, 2004).

One flaw of past research examining acculturation is the unitary measurement of the acculturation variable. The present study utilizes four different acculturation measures to better assess the effects of adoption of US cultural values on self/body image and ED. The broadest of these measures is generation status as each succeeding generation is associated with increased acculturation (Velez, 1995).

It has been suggested by some theorists that increased risks for disordered eating is a result of acculturation to a dominant norm of thinness (Chamorro & Flores-Ortiz, 2000) while others posit that adherence to ethnic identity is a risk factor (Lake, Staiger, & Glowinski, 2000). While our investigation does not directly tease apart these two opposing propositions (see Humphry & Ricciardelli, 2004), we propose that acculturation has an effect on body dissatisfaction and risks for ED but is moderated by ethnicity. For the Eastern-European and Chinese immigrant groups, acculturation is presumed to be to European-American culture as has recently been demonstrated by Devos and Banaji (2005) and the thinness ideal. Therefore, among these samples, more acculturation will be associated with lower body image and among the Eastern-Europeans, higher ED risks. For the Afro-Caribbean group, acculturation is more complex. Recent research finds that for this group, acculturation is viewed in non-racial terms and seen as adopting general American values and behaviors (Waters, 1999). However, exposure to White body image norms is limited for Afro-Caribbeans due to racially and ethnically homogeneous housing and college environments. Thus, more acculturation will be associated with higher self/body image and lower ED risks.

In comparisons of immigrant populations with later generations, as Eastern-European and Chinese immigrants acculturate into a broader white European population, these later generations would evince lower body satisfaction and higher ED risks. Conversely, as Afro-Caribbeans acculturate into a broader African-American population, these later generations would evince higher body satisfaction and lower ED risks.

2.4. Hypotheses

In summary, we hypothesized the following relationships among the variables:

1. Among immigrant women, there will be no correlation between self/body image and risks for ED.
2. Among immigrant women, Chinese women will be the least and Afro-Caribbean women the most satisfied with their bodies and selves.
3. Acculturation differences within the immigrant generations will be moderated by ethnicity. For Chinese and Eastern-Europeans, more acculturation (to dominant White culture) will be associated with negative self/body image and, for Eastern-Europeans, higher ED risks; conversely, for Afro-Caribbeans, more acculturation (to African-American culture) will be associated with positive body image and lower ED risks.
4. In comparing immigrant Afro-Caribbeans and Eastern-Europeans to more acculturated African-Americans and European-Americans (3rd generation and higher), ethnicity
would again be a moderator. Acculturation would have the most negative effect on European-Americans and the most positive effect on African-Americans.

3. Method

3.1. Participants and procedure

A total of 353 female undergraduate students from four campuses from the City University of New York participated in this study. Campuses were specifically chosen in which our target ethnic groups comprised either a majority or were part of a diverse ethnic composition. They included Baruch College (31% White, 20% Black, 19% Hispanic, 29% Asian), Medgar Evers College (1% White, 92% Black, 5% Hispanic, 1% Asian), the College of Staten Island (69% White, 11% Black, 10% Hispanic, 9% Asian), and Borough of Manhattan Community College (12% White, 42% Black, 31% Hispanic, 14% Asian) (City University of New York Enrollment by Race/Ethnicity, Fall 2001). Participants were recruited directly from individual psychology and English classes. Sign-up sheets were also posted on the Psychology Department bulletin board at Baruch College. All students were invited to participate in the study. Subsequently, data from males and all other ethnic groups that did not fit our study requirements were not utilized in the present analysis. Questionnaires, in English, were group-administered and in some cases students received extra course credit for their participation.

Generation status of the participants was 187 first, 36 second and 130 third and above (third +) generation. The ethnic backgrounds of the first generation consisted of Chinese (n = 46, China, Hong Kong, Taiwan), Afro-Caribbean (n = 88, Barbados, Grenada, Guyana, Jamaica, Nevis, St. Lucia, St. Vincent, Tobago/Trinidad) and Eastern-European (n = 53, Czechoslovakia, Poland, Russia and former Soviet Republics). Afro-Caribbean participants were selected as a more homogeneous, English-speaking ethnic grouping and distinct from Spanish, French, Dutch and other Caribbean cultures. Second generation consisted of Chinese (n = 15), Afro-Caribbean (n = 15) and Eastern-European (n = 6). There were 130 participants who were third+ generation and were sub-divided into a European-American group (n = 84) and an African-American group (n = 46). Ages of the total sample ranged from 18–67 years old (M = 23.7) Students from the City University of New York are generally homogeneous in socioeconomic status and are predominantly from working class families (Polner, 2002). As socioeconomic class has been shown to affect ratings of body ideals (Kemper, Sargent, Drane, Valois, & Hussey, 1994), our study provides control of this potentially confounding variable.

3.2. Measures

3.2.1. Self-esteem

The Rosenberg (1965) 10-item SE Inventory scale was used to measure general SE. The scale consisted of global statements to which respondents indicated agreement to the items on a 4-point scale, ranging from “1 = Strongly agree” to “4 = Strongly disagree”. Some of the items were presented as positive statements, such as, “On the whole I am satisfied with myself,” while other items were negative statements like, “At times, I am no good at all.” The positive items were reverse scored, so that the higher scores indicated higher SE,
consistent with the negative statements. A mean score was calculated for each participant. The SE scale has been used extensively in past literatures on body image and has had high reliability ranging from .85 to .87 (Joiner & Kashubeck, 1996; Silber & Tippett, 1965) and from .66 to .79 with a Chinese sample (Lee & Lee, 2000). The Cronbach α reliability value for the current study was α = .84.

3.2.2. Body esteem

Mendelson, Mendelson, and White’s (2001) Body Esteem Scale (BES) assessed respondents’ attitudes and feelings about their body and appearance. The BES consists of three subscales, which include global feelings about one’s body (e.g. I like what I see when I look in the mirror.), satisfaction with one’s weight (e.g. I really like what I weigh.), and positive evaluations of attributions about one’s body and appearance (e.g. People my own age like my looks.). The scale contains 23 items rated on a 5-point Likert scale ranging from “1 = Never” to “5 = Always”. As in the SE scale, some of the items were reverse scored so that higher scores meant higher body esteem. Mean scores were calculated. The reliabilities of the BES subscales have ranged from .75 to .96 (Mendelson et al., 2001). In the current study, the reliability was α = .93.

3.2.3. Body parts satisfaction

The Berscheid, Walster, and Bohrnstedt (1973) Body Parts Satisfaction Scale (BPSS) was employed as a measure of respondents’ satisfaction with individual body parts. The scale contained 24 items, which were on a 6-point Likert scale indicating respondents’ level of satisfaction with aspects of their body ranging from “1 = Extremely dissatisfied” to “6 = Extremely satisfied”. As with the other scales previously mentioned, the higher score indicated higher satisfaction with one’s body. Except for two items (“my overall appearance” and “my overall facial attractiveness”), the items in the scale referred to specific body aspects (e.g. “my hair”, “my mouth”, “my height”, “my weight”). One body part item (“my chest (breasts)”) was added to the BPSS scale. Mean scores were calculated for each participant. The BPSS has been used in past body image research (Petrie, Tripp, & Harvey, 2002) although no reliability coefficients were reported. In this study, the Cronbach α was .94.

All three of the variables listed above are associated with risks for disordered eating among White American women. As we were uncertain as to which esteem variables would be related to our research samples, all three were included in this investigation.

3.2.4. Acculturation

Ward’s Acculturation Index (WAI) assessed first generation immigrants’ identification with the US culture and home country culture (Ward & Kennedy, 1994). The WAI consisted of 21 cultural dimensions, each followed by two questions. The first question measured the extent to which the participants identified themselves with American culture’s aspect of the dimension, while the second question measured the extent to which they identified with their birth country’s cultural aspect of the dimension. The two scores are referred to as American identity and Birth identity, respectively. Examples of items were, “Regarding clothing, to what extent are your experiences and behaviors similar to Americans?”, and “Regarding clothing, to what extent are your experiences and behaviors similar to people from your birth country?” The items were on a 7-point scale ranging from “1 = not at all” to “7 = extremely”. The higher the summed score for each sub-scale,
the higher the identity. Reliabilities ranged from .89 to .96 for the American identity subscale and .91 to .93 for the Birth identity subscale (Ward & Kennedy, 1994). For this study, reliability was \( \alpha = .94 \) for both American identity and Birth Country identity.

Two other acculturation indices were utilized with the immigrant sample. An author-developed language scale measured acculturation in the US by combining ratings from three items focusing on language use and calculating a mean language score for each participant. They included the language that the participant primarily spoke at home when growing up, language(s) that he/she now speaks well, and language(s) that he/she now reads well. The items were coded in a way that indicated the more English proficiency in reading, writing and speaking, the more acculturated. Language use has been demonstrated to be a valid and reliable measure of acculturation (Ung, 2003). The reliability for the combined Eastern-European and Chinese first generation sample in this study was \( \alpha = .75 \). The scale was not utilized with the Afro-Caribbeans as English was also their native language.

Neighborhood diversity indirectly assessed acculturation, whereby the more diverse the residential neighborhood in which the participant lived, the more acculturated the participant. Several studies have used neighborhood as an assessment of acculturation (Chiriboga, 2004; Snowden & Hines, 1999). In settings with more than one ethnic group, the dominant American culture becomes the common element and American attitudes more salient. The neighborhood diversity item was a 6-point Likert type variable ranging from “1 = the neighborhood is exclusively of my ethnic group” to “6 = the neighborhood is very diverse and has no ethnic group which is the majority”. Since response 5 (“the neighborhood has mostly people of one other ethnic group”) and “6” both conveyed high levels of diversity for the participant, they were combined. This resulted in a 5-point neighborhood diversity scale.

One general measure of acculturation was used for the entire sample. Respondents provided data concerning their parents’ and grandparents’ immigration status. This allowed us to categorize all participants as either first, second, or third+ generation Americans. Note that distinctions are rarely made beyond the third generation and participants are generally combined (Neidert & Farley, 1985).

3.2.5. Risk for EDs

Risk for developing ED was measured by using Garner, Olmsted, Bohr, & Garfinkel’s (1982) 26-item Eating Attitudes Test (EAT-26), a modified version of the 40-item Eating Attitudes Test. Items on the EAT-26 were rated on a 6-point Likert scale, indicating the extent to which respondents felt that anorexic or bulimic behaviors and attitudes reflected their experiences. Using the scale developers’ instructions, the most extreme response was scored three points (“Always = 3”), while the next two adjacent responses were scored two points (“Very often = 2”) and one point (“Often = 1”) (Garner & Garfinkel, 1979). The last three responses were given a score of zero (“Sometimes”, “Rarely”, and “Never”). Examples of items included “I am terrified about being overweight” and “I avoid eating when I am hungry”. The only positive item, “I enjoy trying new rich foods”, was reverse scored, so that the higher score meant higher risk for ED, consistent with the other items. Sum scores for each participant were calculated. The cut-off score of 20 points correctly classifies participants into those who are considered clinically at high risk for ED as compared to a control group (Garner et al., 1982). The reliability coefficients of this scale have ranged from .83 to .90 (Garner et al., 1982; Joiner & Kashubeck, 1996; Koslowsky
et al., 1992). The EAT-26 is used as a measure of ED risk among both Western and non-Western samples, specifically among Chinese and immigrant Chinese (Furnham & Husain, 1999; Humphry & Ricciardelli, 2004) with a reliability coefficient ranging from .68 to .75 (Lee & Lee, 2000). EAT-26 has also been used with an Afro-Caribbean sample (Thomas, James, & Bachmann, 2002).

3.2.6. Demographic questionnaire
A brief demographic questionnaire was included to gain information about participants’ age, gender, and ethnic/cultural/linguistic background.

4. Results

4.1. Relationships between the main variables among immigrants

The group of second-generation participants was small ($n = 36$) and consideration was given to combining it either with first or third+ generations. However, evidence from several studies indicated that conceptually and experientially, these generations differed (Lopez, Haigh, & Burney, 2004; Neidert & Farley, 1985) and thus, the second generation was dropped from further analyses. For the entire immigrant (first generation) population, SE, BES and BPSS were significantly positively correlated with each other (all at $p < .001$), indicating an association between SE and BES ($r = .41$) and BPSS ($r = .48$); and between BES and BPSS ($r = .61$) (See Table 1).

Among the immigrant samples and substantially confirming our first prediction, EAT was not significantly correlated with SE, BES, and BPSS for the Eastern-European and Chinese immigrant groups. EAT was also not significantly correlated with SE and BPSS for Afro-Caribbeans, but was significantly negatively correlated with BES ($r = -.29$, $p < .01$) indicating that the lower the BES, the higher the risk for ED.

4.2. Ethnicity effects

The second hypothesis predicted, among the immigrant samples, effects of ethnicity on SE, BES, and BPSS. Several one-way ANOVAs found ethnicity had a significant effect on SE, $F(2, 184) = 10.34; p < .0001$, BES, $F(2, 183) = 3.59; p < .05$, and BPSS, $F(2, 184) = 11.3; p < .0001$. Tukey’s HSD at the $p < .05$, revealed, as predicted, that Chinese immigrants had lower SE ($M = 2.97, SD = .48$) and BPSS ($M = 4.02, SD = .84$) than the Afro-Caribbean ($M = 3.37, SD = .45$; $M = 4.79, SD = .94$) or Eastern-European ($M = 3.32, SD = .56$; $M = 4.63, SD = .88$) immigrants. Chinese immigrants also had lower BES ($M = 3.39, SD = .65$) than the Eastern-European ($M = 3.77, SD = .64$) immigrants. While not significantly different from the Eastern-Europeans, the means for the Afro-Caribbeans were highest for SE and BPSS.

An additional ANOVA revealed that with respect to risk for ED, there were no significant differences among the immigrant samples. Another method to scrutinize the differences between these immigrant groups would be to examine the clinical cut-off scores. This refers to the score above which an individual requires therapeutic intervention and distinguishes between symptomatic and non-symptomatic individuals. While not
significantly different, 26% of Eastern-Europeans, 22% of Chinese, and 18% of Afro-Caribbeans scored above the clinical cut-off score of 20.

### 4.3. Acculturation effects

#### 4.3.1. Acculturation within the immigrant sample

Within the immigrant sample, the third hypothesis predicted ethnicity moderating acculturation differences. In particular, for Chinese and Eastern-Europeans, the more acculturated, the lower the body image and the higher the risk of ED. For Afro-Caribbeans, the more acculturated, the higher the body image and the lower the risk of ED. These hypotheses were partially confirmed. For the immigrant generation, acculturation was measured and analyzed in three different ways:

1. Ward’s Birth identity versus American identity scale,
2. the language scale, and
3. neighborhood diversity.

Using the first measure, sum scores of either high American identity and/or low Birth identity are considered to be signs of acculturation. Consistent with our hypothesis, among the Eastern-European immigrant group, Birth identity was significantly positively correlated to SE and BPSS, revealing that the lower the Birth identity, the lower the body image and the higher the risk of ED.

#### Table 1

Bivariate intercorrelations for study variables among first generation immigrant groups

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<td>4. EAT</td>
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<td>.09</td>
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<td></td>
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<tr>
<td>5. Birth identity</td>
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<td>.16</td>
<td>.28*</td>
<td>-.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. American identity</td>
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<td>.14</td>
<td>.28*</td>
<td>.06</td>
<td>.31*</td>
<td></td>
</tr>
<tr>
<td>7. Neighborhood diversity</td>
<td>.19</td>
<td>.13</td>
<td>.07</td>
<td>.09</td>
<td>-.13</td>
<td>.05</td>
</tr>
</tbody>
</table>

*p < .05.

*Note:* SE, Self-Esteem Scale; BES, Body-Esteem Scale; BPSS, Body Parts Satisfaction Scale; EAT, Eating Attitudes Test.
identity (and thus the more acculturated), the lower the general SE ($r = .32, p < .05$) and BPSS ($r = .28, p < .05$). Surprisingly, BPSS is also significantly associated with high American identity ($r = .28, p < .05$). For the Chinese group, contrary to predictions, American identity was significantly positively correlated to BES and BPSS, whereby the higher the American identity (therefore the more acculturated), the higher the BES ($r = .30, p < .05$) and BPSS ($r = .30, p < .05$). No significant relationships were found for the Afro-Caribbean group. Acculturation measured by identity was not associated with EAT for any of the three immigrant groups.

A one-way ANOVA testing the effect of ethnicity on American identity revealed a significant main effect ($F(2,184) = 3.83, p = .02$); Tukey’s HSD indicated that the Eastern-Europeans ($M = 97.1, SD = 23.5$) had a significantly higher American identity ($p = .02$) than the Afro-Caribbeans ($M = 84.1, SD = 30.3$). While not significantly different, the mean American identity for the Chinese ($M = 90.2, SD = 23.8$) fell between those two groups. There were no ethnicity effects on Birth identity.

The language scale was used as a measure of acculturation for the Eastern-European and Chinese immigrant groups, but not for the Afro-Caribbean group as they were proficient in speaking, reading, and writing English before arrival in the US. There were no significant correlations between language use and the four dependent measures.

Correlation analysis for neighborhood diversity was significantly associated with SE among Afro-Caribbeans ($r = .22, p = .05$) and Chinese groups ($r = .30, p = .05$).

Separate multiple regression analyses were performed on all significant acculturation measures (American identity, Birth identity, and neighborhood diversity) as predictors for each of the four dependent variables for the immigrant sample. In each analysis, each variable in the overall model is examined independently, controlling for the other acculturation variables. In the first multiple regression, neighborhood diversity significantly predicted SE ($\beta = .213, p = .005$) such that diverse neighborhoods were associated with high SE. A second analysis revealed that neighborhood diversity marginally predicted BES ($\beta = .135, p = .075$) whereby diverse neighborhoods were related to high BES. In a third analysis, Birth identity significantly predicted BPSS ($\beta = .149, p = .049$) such that low Birth identity was associated with low BPSS. In the same analysis, neighborhood diversity also significantly predicted BPSS ($\beta = .151, p = .04$) with increased diversity associated with higher BPSS.

4.3.2. Acculturation across generations

For the entire study population, acculturation effects were analyzed through a comparison of the first (immigrant) versus third and above generation (third+) samples. The late 20th century populations of Afro-Caribbeans, Eastern-Europeans, and Chinese immigrants have not resided in the US long enough to produce progeny that are third generation and above. Therefore we used third+ generations European-Americans and African-Americans as more acculturated comparison groups for the Eastern-European and Afro-Caribbean immigrants, respectively. The Chinese group was excluded from this analysis because the sample size of Chinese-Americans who were third+ generations was insufficient for a comparison.

Among the non-immigrant, acculturated samples, BES was significantly negatively correlated with EAT for both the European-Americans ($r = -.44, p < .0001$) and the African-Americans ($r = -.32, p < .05$) such that the lower the BES, the higher the risk for ED. For the European-Americans, two additional negative correlations were found
between EAT and SE and BPSS ($r = -.22, p < .05$, and $r = -.32, p < .01$, respectively), such that the lower the general SE and BPSS, the higher the risk for ED. Intercorrelations among variables are shown in Table 2.

Examining clinical cut-off scores among these third+ generations, 30% of the European-American group are at a significant clinical risk for developing ED with a cutoff score of above 20 in comparison with the African-American group (11%), $x^2 (1, N = 130) = 5.98, p = .01$.

Four 2 (generation status) × 2 (ethnicity) ANOVAs were performed (one for each of the dependent variables); the two levels of generation status were immigrant (first generation) and acculturated (third+ generations); the two levels of the ethnicity variable consisted of European-descended Americans (first and third+ generations combined) and African-descended Americans (first and third+ generations combined). For SE and EAT, the ANOVAs revealed significant main effects of ethnicity, $F (1, 267) = 17.51, p < .0001$, and $F (1, 267) = 10.48, p = .001$, respectively. For BPSS and BES, significant main effects of both ethnicity and generation status were found. For BPSS, $F (1, 267) = 24.33, p < .0001$, and $F (1, 267) = 4.52, p = .03$, respectively. For BES, $F (1, 267) = 6.05, p = .01$ and $F (1, 267) = 10.8, p = .001$, respectively. The means and standard deviations are shown in Table 3.

Overall, African-descended women had higher general SE, BES and BPSS and lower risk for ED than European descended ones. The immigrant group had higher SE, BES and BPSS than the acculturated group.

As predicted, when comparing the Eastern-European immigrants with acculturated European-Americans, the latter had lower SE ($M = 3.32$ versus $M = 3.04$, $t (135) = 2.86, p = .005$), BES ($M = 3.77$ versus $M = 3.01$, $t (135) = 5.97, p < .0001$) and BPSS ($M = 4.63$ versus $M = 3.98$, $t (135) = 4.04, p < .0001$), and though not significant, the European-Americans had higher risk for ED ($M = 12.09$ versus $M = 15.00$), indicating that the more acculturated, the lower the body image and the higher the risk for disordered eating. When compared to Afro-Caribbean immigrants, African-Americans have higher SE ($M = 3.37$ versus $M = 3.54$, $t (132) = 2.06, p < .05$), and, although non-significant, higher means for BES ($M = 3.55$ versus $M = 3.69$), BPSS ($M = 4.79$ versus $M = 4.95$), and lower risk for ED ($M = 10.40$ versus $M = 7.63$).

Since Eastern-European and Afro-Caribbean immigrant groups differed in the direction of body image and risk for ED scores when compared to the later generations, we tested whether acculturation effects were moderated by ethnicity for each of the main dependent

Table 2  
Bivariate intercorrelations for study variables among third+ generations

<table>
<thead>
<tr>
<th>Measure</th>
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<th>2</th>
<th>3</th>
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<td>.56*</td>
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</tr>
<tr>
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<td>-</td>
<td>.81*</td>
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<tr>
<td>3. BPSS</td>
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<td>.79*</td>
<td>-</td>
<td>-.32*</td>
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<tr>
<td>4. EAT</td>
<td>-.14</td>
<td>-.32*</td>
<td>-.18</td>
<td>-</td>
</tr>
</tbody>
</table>

*p < .05.

Note. Intercorrelations for European-American participants ($n = 84$) are presented above the diagonal, and intercorrelations for African-American participants ($n = 46$) are presented below the diagonal. SE, Self-Esteem Scale; BES, Body Esteem Scale; BPSS, Body Parts Satisfaction Scale; EAT, Eating Attitudes Test.
variables. Based on Baron and Kenny (1986), an appropriate analytic procedure for demonstrating moderation where both independent variables are dichotomous is the test of the interaction term of the above-mentioned 2 (generation status) × 2 (ethnicity) ANOVAs. The analyses revealed significant interactions between ethnicity and generation status for all four dependent variables: SE, F(1, 267) = 12.21, p = .001, BES, F(1, 267) = 22.77, p < .0001, BPSS, F(1, 267) = 12.42, p < .0001, and EAT, F(1, 267) = 4.11, p < .05. Confirming our prediction, acculturation is moderated by ethnicity for all four main dependent variables, such that acculturation had the most negative effect for the European-descended Americans and the most positive effect for the African-descended Americans (see Fig. 1).

5. Discussion

This study investigated two previously untested but growing immigrant groups in the US, Caribbean and Eastern-European migrants, while attempting to clarify results for a specific Asian sample, namely, Chinese immigrants. We examined whether, among these immigrants, body image and ED were related, and the effects of ethnicity and acculturation on self/body image and eating pathologies.

5.1. Hypothesis 1

Among the three groups of first generation immigrant women, we found, as predicted, that disordered eating was not associated with either self or body image. With one exception, none of the self-image variables were correlated with ED. These findings contrast with the literature that suggests that self and body image predict risk for ED. Those populations however are typically white and non-immigrant. ED were also not associated with ethnicity. Across all three-immigrant groups, neither Chinese, Caribbean
nor Eastern-European cultural backgrounds were correlated with lower or higher risks for eating pathologies.

5.2. Hypothesis 2

Additionally, as predicted, self-image, including self-esteem and body image variables, was affected by ethnicity. Chinese women had the lowest self and body image and Afro-Caribbean women had the highest self and body image ratings, and the lowest risks for eating disorders.
ED. Regarding self and body image, the Chinese and Afro-Caribbean results confirm past research which reported low self-regard among Chinese/Asians and high regard among Africans (Wastlund, Norlander, & Archer, 2001).

5.3. Hypothesis 3

This study also investigated the effects of acculturation to the US on eating disorder risks and body image. Ethnicity had a discernible moderating effect when exploring the effects of acculturation. Among the immigrant samples, acculturation had the strongest effect among the Eastern-Europeans and appeared to be a psychological risk. Lower birth identity (more acculturation) was associated with negative self-esteem, body image, and lower body parts satisfaction. In addition, Eastern-European immigrants as a group produced the highest risk for clinically disordered eating. These acculturation results may be indicative of the salience of White American body norms among the Eastern-European immigrant population. For this group, increased acculturation predicted a decline in mental health.

Acculturation effects were also significant to the Chinese sample but in a positive direction. Higher American identity and dwelling in more diverse neighborhoods were associated with better self and body image. Becoming more American resulted in a healthier state.

For Afro-Caribbean immigrants, women who live in more ethnically diverse neighborhoods reveal higher self-image, a psychologically healthier state. It is unclear, however, whether by living in a diverse neighborhood they are acculturating to the dominant culture or maintaining their ethnic identity.

The results of this investigation lead us to ask to which set of US body norms, White or Black, are Caribbean-Americans acculturating. If the standards for the body ideal are those held by Black Americans and Afro-Caribbeans, in which larger and rounder bodies are rated as attractive and desirable, then Afro-Caribbean immigrants would not experience a shift in body size satisfaction despite some general acculturation to America. Hence they would maintain their positive body image and not experience a heightened risk for ED. If the standards were those held by White Americans, then Afro-Caribbean women might experience a discrepancy in body ideals and increased body dissatisfaction.

Closer inspection of the data indicates that 55% of the Afro-Caribbean participants in the study attended Medgar Evers College which is 92.4% Black and Caribbean-American (CUNY Undergraduate Enrollment by Race/Ethnicity and College: Fall 2001). Demographic data also reveals that most of these participants lived in neighborhoods that are overwhelmingly composed of Caribbean immigrants and, to a lesser degree, African-Americans. Therefore, we speculate that among these first generation Afro-Caribbean participants, White American body norms which stress thinness are not salient and positive self-concepts are prevalent. This view is corroborated by Waters (1994) who found that Afro-Caribbeans who maintained their West Indian identity tended to be more optimistic in their outlook.

5.4. Hypothesis 4

Analysis of the effects of acculturation across generations found a similarly strong moderating effect of ethnicity. For European-descended participants, increased acculturation
by generation was associated with negative health consequences: lower body esteem, lower body parts satisfaction, and higher risks for ED. Additionally, the later generations (European-Americans) had the highest percentage of clinical-level ED risks. Conversely, for African-descended participants, increased acculturation over time was associated with positive health: higher body esteem, body parts satisfaction, and lower risk for ED. African-Americans (the 3+ generations), compared with the European-Americans (the 3+ generations), had a lower percentage of clinical-level ED risks albeit higher than the three immigrant samples. These findings are supported by Pumaniega et al. (1994) who, while not specifically assessing acculturation and ethnicity, found that a strong African-American identity served as a protective factor in eating risks.

5.5. Other findings

Comparisons of American and Birth Identity among immigrant samples found that Eastern-European women were more likely to adopt an American Identity than were Afro-Caribbean women. These findings add support for the notion that high American Identity was related to salience of the thinness body attitudes. Among Afro-Caribbean women, who refrained from adopting the American Identity, the Caribbean body ideal may be more immutable and aided in the maintenance of high self-image and low risk of eating pathologies. Rather than weak American identity and strong ethnic identity predicting unhealthy behavior, for the Caribbean sample it was a positive factor. These ethnicity results partially explain discrepant findings in past investigations. First, consistent with Chamorro and Flores-Ortiz (2000), acculturation is a risk factor but, as we indicate, only among Eastern-Europeans; Chinese immigrants who also have high American Identity show positive effects of American Identity. Second, and contrary to Lake et al. (2000), adherence to ethnic identity is a protective and not a risk factor, but only among Caribbean-Americans.

5.6. Cautions and limitations

Our results need to be interpreted cautiously as there were some methodological concerns. First, there were some numerical inequities between generations—187 participants in the first generation, 36 in the second, and 132 in the third and higher. We omitted the second generation from the analysis due to the small sample size but a larger second-generation sample would allow a clearer test of the shape of generational acculturation effects (e.g. linear). A more troubling limitation is the lack of a Chinese sample among the third and higher generations. It remains an open question whether the positive acculturation effect seen among the Chinese immigrant sample will persist with later generations.

A second concern focuses on the research design. While we have utilized a cross-sectional design, this does not allow for an assessment of the changes in body attitudes as a consequence of acculturation within one participant cohort. To provide for this test while controlling for generation effects, a cohort sequential design might be more appropriate. However, the difficulties of conducting longitudinal studies among immigrant samples make this prospect daunting.

A third more intractable problem is the confounding of later immigrant generations with the variable of ethnicity. With each succeeding generation, the probability of finding
“pure” ethnic groups diminishes due to marriage between ethnic groups. Additionally, self-identity labels change over time with, for example, a third generation Afro-Caribbean defining themselves as African-American or Chinese-Americans defining themselves as Asian-Americans. Thus it was necessary in this study, for those of third generation or higher, to utilize more superordinate ethnic categories of European- and African-Americans. In the neighborhoods where we collected data, we feel confident that many of the third+ generations of African-Americans included many participants of Caribbean origin. These assumptions need to be empirically verified in future research. One additional level of complexity regards the confounding of race with acculturation. It is, for example, impossible to compare immigrant samples directly with individuals self-identifying as Black and White Americans without taking acculturation into account, as these latter samples have generally lived for more generations in the US.

Finally, we would suggest that future investigations more directly measure the ethnic culture and body norms to which the immigrant generations are acculturating. For example, are immigrant women acculturating to African-American body attitudes, European-American ones, or some other ethnic standards? It appears that acculturation is more likely a multi-dimensional construct with immigrants adopting some values from the dominant culture, some from minority cultures, and some maintenance of birth country values and attitudes. Such results would provide a clearer context within which to examine the effects of acculturation.

6. Conclusions

Acculturation results taken together paint a complex picture. Becoming more “American” has variable consequences on self-image and health. For self-esteem, body parts satisfaction and body esteem, a distinct pattern emerges for each immigrant group as a result of acculturation: acculturation is associated with low self and body image and disordered eating risks for the Eastern-Europeans, high self and body image among the Chinese, and high self-image for the Afro-Caribbeans. Long-term acculturation over generations results in increasingly negative health consequences for European-descended women and increasingly positive outcomes for African-descended women. Thus, our findings also suggest an ethnicity clarification for several theoretical explanations of body dissatisfaction and eating pathology.

Current literature has suggested the development of interventions which are ethnically sensitive (Streigel-Moore & Smolak, 2000). In particular, a number of authors have recently suggested models for prevention and treatment of body image and ED among African-Americans (Davis, Clance, & Gailis, 1999; Falconer, 2003) and Chinese-Americans (Pan, 2000). These ethnically sensitive techniques should be developed also to reflect the needs of Eastern-European women in light of the results of this study. We recommend, given the interaction of ethnicity and acculturation, that preventative activities and interventions be developed mindful of both level of acculturation to US body norms as well as ethnicity.

One area warranting additional investigation is the finding of near uniformly higher self and body esteem and satisfaction among the Caribbean-American immigrants and, with some measures of acculturation, further improvements in health attitudes. These women indeed perceive themselves as more beautiful as they become more American. Investigations are needed which explore familial, social, and/or cultural variables that
serve as protective factors for these women. These may, in turn, be suggestive of interventions that could be transferred for use with other immigrant groups to minimize the negative effects of becoming American.

Acknowledgments

The authors gratefully acknowledge the assistance of the following individuals in the data collection and improvement of the manuscript: Cathy Fewer, Thomas Astuto, Cynthia Schikschnet, Sophia Paone, Iwona Drozd, Dianne Tyson and the manuscript reviewers. This research was supported, in part, by a grant from The City University of New York PSC-CUNY Research Award Program.

References


**Further reading**