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Characteristics of Midlife Women Recruited Through Internet Communities/Groups

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Abstract

The purpose of this study was to explore demographic characteristics of a specific online population, midlife women recruited through Internet communities (ICs) or groups, and to provide future direction for Internet research among midlife women. Using a feminist perspective, the study focused on ethnic variations in the characteristics of the midlife women. A total of 192 midlife women were recruited through ICs. The Internet survey included questions on sociodemographic characteristics and health/illness status. The data were analyzed using descriptive and inferential statistics. The findings indicated that midlife women recruited through ICs tended to be Caucasian, young, married, and affluent. The findings also indicated significant ethnic differences in sociodemographic characteristics. The findings suggest that researchers need to consider that midlife women recruited from ICs tend to be a specific group of midlife women.

Keywords

Internet Communities; Midlife Women; Recruitment; Internet Research

With the recent changes in Internet use and dynamics, characteristics of Internet users have changed as well. For example, in terms of ethnic composition, recent studies indicated that Internet usage among Asian-Americans is greater than that of any other ethnic groups, and half of Hispanic Americans and 33% of African Americans are now Internet surfers.^{1, 2} In terms of gender, women account for 52% of home Internet users.² Many researchers have posited that the Internet is providing a unique forum for marginalized groups including midlife women, to find a voice in the public sphere.^{3, 4} Indeed, although the digital divide is still a concern in Internet interactions, the number of women on the Internet has dramatically increased in recent years.

With the increasing number of women on the Internet, the number of studies of women on the Internet has increased recently. In the early stages of Internet use, studies reported that women had less experience with computers than men and that they were more likely than men to use computers only at work.⁵ The studies also reported that women possessed less self-efficacy toward the computers, and had high levels of computer anxiety.⁶ All these factors have been reported to lead to a gender gap in Internet use in the 1990s.⁷

Recent studies have also reported that women tend to have more negative attitudes toward computers and the Internet.⁸ The studies also that women tend to visit websites to better understand issue complexities,⁹ and that women tend to be more concerned about privacy and prefer to use the media to build social contacts.¹⁰ In addition, it was reported that women tend to seek support through the Internet while men tend to seek information,¹¹ and that women tend to be more easily recruited to a study through the Internet compared with men.^{11, 12} As

these findings indicate, there have been many studies on women's interactions through the Internet (e.g., sexuality, sex education, information seeking behaviors, online web-based services, online support group, etc).^{13–19}

Few studies, however, have explored characteristics of women on the Internet, and very little is known about them, especially those of midlife women. For example, when the PUBMED database was searched using the key terms "Internet" and "midlife women," 1,269 articles were retrieved. When the search was narrowed with an additional keyword of "characteristics," 132 articles were retrieved. Despite the large number of articles, they rarely provided information on sociodemographic characteristics of midlife women. Most were about Internet use by a specific health/disease group of midlife women (e.g., smokers, depressed, cancer patients, patients undergoing dialysis, drinkers, etc), online behaviors, online preferences, and barriers to Internet use.^{21–27}

Despite the small amount of information on characteristics of midlife women on the Internet, many of these studies warned of potential selection bias from using online midlife women as research participants (because most of the women would be highly educated White women with high incomes).^{21, 26, 27} Yet, the concerns about selection bias are balanced by a recent report by the Pew Internet and American Life Project, indicating that 48% of women whose annual household income was less than \$30,000 were on the Internet and that 76% of women whose annual household income was between \$30,000 to \$50,000 were on the Internet.²⁰ Also, the report indicated that about 60 to 67% of White, Hispanic, African American, and Asian women went online.²⁰ However, as mentioned above, virtually no study has explored who the midlife women on the Internet are, subsequently making it difficult for Internet researchers to envision online midlife women as a viable target research population.

The purpose of this study was to explore the characteristics of a specific online group, midlife women who could be reached and recruited through ICs, and to provide future direction for Internet research among midlife women on the Internet. The research questions of the study are:

Research Question #1. What are sociodemographic characteristics of women recruited through ICs?

Research Question #2. What are the self-reported health and menopausal statuses of women recruited through ICs?

Research Question #3. Are there differences in sociodemographic characteristics of these women according to ethnicity? [It is hypothesized that there are significant ethnic differences in sociodemographic characteristics of the women (Hypothesis 1)].

Research Question #4. Are there differences in the self-reported health and menopausal statuses of the women according to ethnicity? [It is hypothesized that there are significant ethnic differences in self-reported health and menopausal statuses of the women (Hypothesis 2)].

Using a feminist perspective, the study focus was ethnic variations in the characteristics of these midlife women. In this study, ethnicity meant a cultural group's sense of identification associated with the group's common social and cultural heritage²⁸, and was operationalized as self-reported ethnic identity. In the following section, the theoretical basis of the study, a feminist perspective, is presented. Then, the research methods used in the study are described. The findings from the study are presented and discussed in the following section. Finally, based on the findings, implications for future research are suggested.

Theoretical Basis: A Feminist Perspective

When the Internet was introduced, feminists welcomed it because of its non face-to-face interactions that could mask identifiers such as race, gender, and socioeconomic class, consequently allowing for non-biased interactions on the Internet.^{29–32} Until relatively recently, people on the Internet also believed that they were free to choose their identities on the Internet as they wanted (e.g., a middle-aged man can pretend to be a teenage girl), and no empirical verification of the chosen identities has been required in cyberspace.³³ However, a number of studies began to report that the utopian idea of non-biased interactions on the Internet (cyberliberation) is not working, and that cyberculture has the same normative gender, ethnic, or social constraints of the real world.^{34, 35} Indeed, studies have indicated that conventional gender and racial power relations have been copied in cyberspace.³⁶

From this feminist point of view, in this study, it is assumed that the particular makeup of this group of Internet users may reflect current constraints and oppressions in the real world. It is also assumed that this specificity of demographics comes from people's continuous interactions with the real world and from biases reflecting the ways people view the real world. For example, when a midlife Taiwanese woman does not use an IC, this may be because she fears being marginalized even on the Internet. Or, as her culture prescribes, she may be so busy meeting her obligations as a dutiful mother and wife that she has no time.³⁷ She may also perceive that her needs cannot be met by ICs.

In this study, a feminist perspective was used to theoretically guide the research process. Since all feminist theory posits gender as a significant characteristic that interacts with other factors such as race, ethnicity, and class to structure relationships between individuals³⁸, ethnicity was considered a significant factor influencing characteristics of midlife women who could be reached through ICs. Thus, in the study, ethnic variances in the characteristics of the midlife women were highlighted.

Methods

This study was a cross-sectional descriptive Internet survey among midlife women in the U.S. who were online. This is part of a larger Internet survey study on menopausal symptoms of midlife women in the U.S. who were online, and only the partial data on sociodemographic characteristics and self-reported health and menopausal status from the larger study were analyzed to answer the research questions of the study presented in this paper. The study was approved by the Internal Review Board of the institution where the authors were affiliated. In this study, the term "midlife" means the period of life from age 40 to age 60 when women go through physiological changes associated with the cessation of menstruation. "Being online" means that the women are familiar with the Internet as a medium of communication and have regular access to e-mail and the web.

Settings and Samples

The Internet communities/groups through which the participants of the study presented in this paper were recruited included Internet communities/groups for midlife women (ICMWs) and Internet communities/groups for ethnic minorities (ICEMs). At the time when data collection was initiated, 1,120,000 websites/pages for ICMWs through Yahoo! and 1,370,000 websites/pages for ICMWs through Google.com were found. Among the more than two million websites/pages for midlife women, there were more than 1,000,000 general ICMWs (not ethnic-specific), 101,000 Hispanic ICMWs, 297,000 African American ICMWs, and 269,000 Asian ICMWs. The numbers of members of ICMWs ranged up to 937.

The ICs for ethnic minorities (ICEMs) in the U.S., including churches, organizations, forums, health care centers, and professional groups, all of which were ethnic specific, were also contacted and asked to announce the study. Previous studies have reported that ethnic minorities were more successfully recruited through churches and ethnic-specific support/social groups with culturally specific memberships.^{39–41} At the time when data collection was initiated, the websites for 463,000 Hispanic ICEMs, 2,110,000 African American ICEMs, and 1,170,000 Asian-American ICEMs were retrieved through Google.com. The numbers of members of ICEMs ranged up to 406.

For the Internet survey, a total of 192 women were recruited by the study announcements through ICs including ICMWs and ICEMs. Participants were midlife women aged 40 to 60 years who could read and write English, who were online, and whose self-reported ethnicity is Hispanic, non-Hispanic (N-H) White, N-H African American, or N-H Asian. Since the use of multiple languages was impractical due to the inherent diversity and complexities within ethnic groups, only English was used throughout the research process. Thus, only those who could read and write English were recruited. The four ethnic groups were chosen because they were the most common ethnic groups in the U.S.⁴² With a medium effect size ($f=0.25$) and an alpha of 0.05, an “n” of 176 is required to achieve a power of 0.80 in ANOVA (to test Hypotheses 1 and 2).⁴³ Based on the previous studies⁴⁴, a medium effect size of 0.25 is assumed in this study. Thus, the sample size of 192 is adequate to describe and explore ethnic differences in the characteristics of midlife women on the Internet.

Instruments

The Internet survey included questions on sociodemographic characteristics and self-reported health and menopausal status. Detailed information on each instrument is as follows.

Sociodemographic Characteristics—Sixteen questions on age, education, religion, marital status, employment, degree of difficulty in paying for basics, body weight, height, smoking, availability of perceived social support, number of close friends/relatives, number of children, level of physical activity, diet, and access to health care were used to describe sociodemographic characteristics of the participants. For data analysis, body mass index (BMI) was calculated in kg/m² from the self-reported height and weight at the time of the Internet survey and added as a variable. According to the BMI, the participants were categorized into: (a) normal (24.9 or less kg/m²), overweight (25.0–29.9 kg/m²), and obese (30 or more kg/m²) in accordance with the World Health Organization’s definition. Self-reported ethnicity (ethnic group membership) was measured using the ethnicity question required in the NIH’s new reporting guidelines with an open space where participants could freely describe their specific ethnic makeup.

Self-reported Health and Menopausal Status—Self-reported health status was measured using one Likert scale item rating general health (one item) and two open-ended questions on diagnosed diseases and medicine (two items). Self-reported menopausal status was determined using seven items asking about last menstrual cycle, menstrual regularity, and menstrual flow (seven items). Also, the conditions that may make menopausal status uncertain were determined using three items (three items). Women who indicated that they had taken any hormones, including birth control pills, in the last three months were considered hormone users.

Data Collection Procedures

A website conforming to the Health Insurance Portability and Accountability Act (HIPAA) and the SANS/FBI recommendations was developed and published on an independent,

dedicated website server consisting of five Pentium-based computers. The website contained an informed consent sheet and Internet survey questions.

Each of the websites/pages of ICMWs and ICEMs were visited first and their eligibility was determined. This procedure was followed because some websites/pages searched through the Internet search engines were sometimes not the exact ones that we were searching for. Then, administrators of the ICMWs and ICEMs were contacted and asked to post an announcement about the study.

When potential participants visited the project website, the opening page explained the general purpose of the study, and visitors were asked to click to enter the “informed consent sheet.” Informed consent was then obtained through the Internet by asking them to click the “I agree to participate” button. When they clicked the button, they were queried to verify that they met the inclusion criteria (age, literacy, Internet access, and ethnicity).

When participants were connected to the Internet survey web page, through the Internet, they were asked questions on sociodemographic characteristics and self-reported health and menopausal status. While the participants were completing the survey, random questions to which participants had already responded were repeated to check answer consistency for the purpose of identity verification.

Data Analysis

The Internet survey data were directly saved in ASCII format and the Internet survey database. No identities were used throughout the analysis process. The ASCII files that conformed to the Statistical Package for Social Science (SPSS) format were copied to CD-ROMs and maintained in a locked file cabinet in a research office. SPSS was used to analyze the data. When a participant submitted answers to the Internet survey, the validity of the data and the missing fields were automatically checked by Java script codes attached to the questionnaire. If missing fields and/or invalid data (outliers) were detected by the codes, the participant was prompted by a server-side program to enter answers for the missing fields or to provide valid data. If the participant did not enter answers for the missing fields after the reminder and the missing fields were less than 10% of the survey, the participant’s data were included in the data analysis while using mean substitution to determine the value of missing data for continuous variables and allowing missing data for categorical variables (missing data were categorized as “999”). Although this method of mean substitution for continuous variables might mildly increase the likelihood of a type I error, excluding subjects with small amounts of missing data might actually result in a bias toward healthier compliant individuals.⁴⁵ Participants for whom 10% or more data was missing and who did not enter their answers to the question on self-reported ethnicity were not included in the data analysis. To describe characteristics of the midlife women who were recruited through the ICMWs and ICEMs, the data were analyzed using descriptive statistics including frequencies, percentages, ranges, means, and standard deviations. Then, to compare characteristics according to ethnicity (to test Hypotheses 1 and 2), analysis of variances (ANOVA) and chi-square tests were conducted. Tukey’s HSD was used to assist in interpreting any significant effects from the ANOVA. For all inferential statistical analyses, an alpha level of .05 was used.

Findings

Sociodemographic Characteristics

Among the participants, 17% were Hispanics, 23% were Asian-Americans, 20% were African-Americans, and 41% were Caucasians (the percentages have been rounded up, so the total of the percentages is not exactly 100). The mean age of the participants was 47.54 years (SD=5.10,

range: 40–60), and 71% of them were married. Over half of the participants (56%) felt that it was not hard to pay for basics with their family income. About 60% of the participants had one to two children. Sociodemographic characteristics are summarized by ethnicity in Table 1.

While no significant differences in age, marital status, family income, and the number of children were found among the four ethnic groups, there were significant ethnic differences in education level ($X^2=9.81, p<0.05$), religion ($X^2=63.95, p<0.01$), employment status ($X^2=24.79, p<0.01$), body weight ($F=9.22, p<0.01$), height ($F=10.34, p<0.01$), body mass index (BMI) ($F=5.60, p<0.01$), overweight status ($\chi^2=27.81, p<0.01$), smoking status ($\chi^2=31.77, p<0.01$), availability of social support ($X^2=23.10, p<0.01$), favorite foods ($X^2=40.45, p<0.01$), time for exercise ($F=3.17, p<0.05$), time for leisure activity ($F=2.91, p<0.05$), and birth place ($X^2=85.71, p<0.01$).

While the educational level of only less than 10% of Hispanic and African-American participants was high school or less, that of more than 25% of Caucasian participants was high school or less. The majority of Hispanic (91%) and African-American (95%) participants were employed, but only 52% of Asian-American participants were employed.

The mean body weight was 75.32kg (SD=23.12, range: 46–203). While mean body weight was less than 70 kg among Hispanic and Asian-American participants, it was more than 79 kg among African-American and Caucasian participants. Hispanics and Asians weighed less than African Americans ($p<.01$) and Whites ($p<.05$). There was no significant difference in body weight between African Americans and Caucasians. The mean height was 164.16 cm (SD=7.14cm, range: 140–183). While the mean height was about 162 cm among Hispanic and Asian-American participants, it was about 165 cm among African-American and Caucasian participants. Hispanics and Asians were significantly shorter than African Americans and Whites ($p<.01$). Caucasians were significantly shorter than African Americans ($p<.05$).

The mean BMI was 27.81 (SD=7.78, range: 17.5–70.1). While the mean BMI was 24.14 (SD=3.54) among Asian-American participants, it was more than 25 among Hispanic, African-American, and Caucasian participants. Asians had significantly lower BMIs compared with African Americans and Caucasians ($p<.01$). While about 40–60% of the participants had the normal body weight among the Hispanics, Asian-Americans, and Caucasians, half of the African-American participants were obese.

While over half of the Caucasian participants (53%) had the experience of smoking, only 7% of the Asian-American participants did. While the favorite foods of Hispanic and African-American participants were meats, those of the Asian-Americans and the Caucasians were vegetables. The mean time for exercise per week was 191 minutes (SD=223.80, range: 0–1440). While the mean time for exercise was more than three hours among Asian-American and Caucasian participants, it was less than two hours among African-American participants. Asians had significantly more minutes of exercise than African Americans ($p<.01$). The mean time for leisure activity per week was 573 minutes (SD=552.06, range: 0–3600). While the mean time for leisure activity was more than 11 hours among Caucasian participants, it was less than 7 hours among Asian-American participants ($p<.01$). About two thirds of the Asian-American participants were foreign-born (66%).

Self-Reported Health and Menopausal Status

Self-reported health and menopausal status are summarized according to ethnicity in Table 2. There were significant associations of ethnic identity to having a diagnosed disease ($X^2=18.75, p<0.01$) and taking any medication ($X^2=21.94, p<0.01$). While more than 37% of the Hispanic, African-American, and Caucasian participants had a diagnosed disease, only 11% of the Asian-American participants had a diagnosed disease. About half of the Hispanic, African-American,

and Caucasian participants were taking medications, but only 13% of the Asian-American participants were taking medications.

No statistically significant ethnic differences were found among the four ethnic groups in self-reported health status, menopausal status, prediction of menstrual period, perception of how far away from menopause, use of oral contraceptives, and taking steroids or hormones. Three quarters of the participants (76%) rated themselves as healthy. About one third of the participants were in pre-menopause (34%) and early peri-menopause (27%). About one quarter of the participants could predict their menstrual periods within 2–5 days of when they would start (26%) or never knew when they would start (23%). About one third of the participants (32%) perceived that they were already in menopause, but 10% of them perceived that they had not begun the menopausal transition. The majority of the participants were not taking any oral contraceptives (95%) or hormones including steroids (92%).

Discussion

As mentioned above, women's presence on the Internet has been problematic because of technophobic factors that have been pointed out in previous studies in the 1990s.⁴⁶ With advances in Internet technologies, the gender gap in the Internet access has been narrowed, and it was proclaimed that the gender gap on the Internet access had almost disappeared by 2000.^{47–49} Studies have recently reported certain gender differences in Internet interactions, but very few studies have explored characteristics of a specific online population, such as midlife women.^{8–12}

Existing studies among Internet populations have reported some characteristics of Internet populations. Compared with nonusers, Internet users tend to be younger, more educated Caucasians with higher incomes.^{44, 50, 51} The findings reported in this paper agree with these previous findings. The midlife women recruited through ICs tended to be Caucasians, young, and affluent.

An interesting finding of the study presented in this paper was that there are ethnic differences in sociodemographic characteristics of the midlife women recruited through ICs. Hispanic and African American women tended to be highly educated and employed compared with Caucasian women. Hispanic women tended to be Catholic, married, with high income, with adequate social support, and naturally menopausal. Asian women were more likely to be married, in normal weight range, and non-smokers, and eat vegetables, but less likely to have leisure time activities. African Americans tended to be single, heavier (50% were identified as obese), and born in the U.S (100%). They also tended to prefer meat, be surgically menopausal, and have inadequate social support. Compared with other ethnic groups, Caucasian women were less likely to be college graduates, tended to have economic issues, were more likely current smokers, and tended to have a diagnosed disease. In summary, ethnic minority midlife women who were recruited through the ICs were more likely to be highly educated, employed, high-income, and healthy while Caucasian midlife women who were recruited through the ICs had some variance in these characteristics.

These findings on the ethnic differences also raised the question of why these specific characteristics are different according to ethnicity among midlife women on the Internet. The findings on these specific characteristics actually reflect those in the current literature about specific ethnic groups in real settings. For example, the findings reported in this paper indicated that Asian midlife women were less likely to be current smokers compared with other ethnic groups. This finding is also true in the studies among Asian women in real community settings.^{52–54}

Since virtually no study on ethnic differences in characteristics of midlife women on the Internet is identified through the PUBMED and PsychInfo searches, the findings on the ethnic differences reported in this paper cannot be compared with previous studies. Yet, one clear thing is that these findings agree with those by the national surveys among Internet populations,⁵⁵ which indicated significant differences in sociodemographic characteristics and Internet usage between Hispanics and non-Hispanics. However, generalization of the findings on ethnic differences from this study needs to be carefully done because the participants were recruited only through several specific ICs that agreed to post the study announcement and because they were volunteers who visited the project website.

Conclusion and Implications

With the increasing number of women on the Internet, studies began to report gender differences in Internet interactions.^{8–12} Yet, very few studies have explored who the women on the Internet are, and very little is known about characteristics of a specific online group of women, specifically midlife women who could be recruited through the Internet. In this study, characteristics of the midlife women who were recruited through the ICs were explored while looking for ethnic differences in the characteristics. The findings indicate that midlife women recruited through ICs tended to be Caucasian, young, married, and affluent. The findings also indicated significant ethnic differences among the women in terms of education level, religion, employment status, body weight, height, body mass index (BMI), overweight status, smoking status, availability of social support, favorite foods, time for exercise, time for leisure activity, and country of birth.

Based on the findings, we suggest that researchers consider that midlife women who could be recruited through ICs tend to be a demographically specific group of midlife women, which means they could easily come up with potential selection biases. Studies actually have reported potential selection bias in Internet research.^{12, 35, 56} As suggested in previous studies, the findings of the study reported in this paper suggest that researchers consider using a quota sampling method to recruit an equal or similar number of research participants from diverse groups of women according to significant variables that have been reported to influence the focus of their studies. For example, if the researcher explores menopausal symptoms, she/he might want to do quota sampling according to ethnicity, menopausal status, and socioeconomic status (that have been reported to influence menopausal symptoms).

We also suggest that researchers consider the diversities within midlife women on the Internet. As the findings indicated, although all the women were recruited through ICs, there were significant differences in specific characteristics according to ethnicity. Depending on the specific target group of midlife women whom a researcher wants to reach, the specific group of women might have different characteristics from other groups of women on the Internet. By conducting a pilot test on characteristics of the target group of midlife women, the researchers might be able to identify unique characteristics of their target group of midlife women and to reduce potential selection bias.

Finally, we suggest that researchers consider that conventional gender and racial power relations might have been copied in cyberspace. As mentioned above, the cyberspace where the midlife women could be recruited reflects and copies gender and racial inequity in the real world. Thus, Internet researchers need to consider sociopolitical contextual influences on their target group of research as researchers usually do in their studies in real settings while using traditional data collection methods such as pen-and-pencil surveys and telephone surveys.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Sociodemographic characteristics (N=192)

Variables	N (%)				Range	F or χ^2
	Hispanics (N=32)	Asian-Americans (N=44)	African-Americans (N=38)	Caucasians (N=78)		
Age (years) (Mean (SD))	46.09 (4.27)	47.77 (5.41)	48.08 (5.27)	47.73 (5.13)	40 – 60	$F=1.07$ $\chi^2=9.81$
Education						
High school or less	3 (9.4)	6 (13.6)	2 (5.3)	20 (25.6)		
College or more	29 (90.6)	38 (86.4)	36 (94.7)	58 (74.4)		$\chi^2=63.95$
Religion						
Protestant	4 (12.5)	16 (36.4)	27 (71.1)	33 (42.3)		
Catholic	20 (62.5)	3 (6.8)	2 (5.3)	24 (30.8)		
Buddhism	0 (0.0)	5 (11.4)	0 (0.0)	1 (1.3)		
No religion	0 (0.0)	2 (4.5)	0 (0.0)	2 (2.6)		
Others	8 (25.0)	18 (40.9)	9 (23.6)	18 (23.0)		$\chi^2=24.79$
Employment status						
Employed	29 (90.6)	23 (52.3)	36 (94.7)	58 (74.4)		
Unemployed	3 (9.4)	21 (47.7)	2 (5.3)	20 (25.6)		$\chi^2=17.13$
Marital status						
Married	23 (71.9)	39 (88.6)	24 (63.2)	51 (65.4)		
Partnered	2 (6.2)	1 (2.3)	2 (5.3)	4 (5.1)		
Divorced	3 (9.4)	1 (2.3)	8 (21.1)	18 (23.1)		
Widowed	1 (3.1)	1 (2.3)	0 (0.0)	0 (0.0)		
Single	3 (9.4)	2 (4.5)	4 (10.4)	5 (6.4)		$\chi^2=8.43$
Family income is						
Very hard to pay for basics	1 (3.1)	1 (2.3)	3 (7.9)	10 (12.8)		
Somewhat hard	9 (28.1)	17 (38.6)	12 (31.6)	31 (39.7)		
Not hard	22 (68.8)	26 (59.1)	23 (60.5)	37 (47.5)		$F=9.22$
Weight (kg)(Mean (SD))	69.78(21.05)	62.93(9.19)	85.42(26.31)	79.67(24.44)	46 – 203	$F=10.34$
Height (cm) (Mean (SD))	160.66(7.08)	161.39(6.07)	167.95(6.71)	165.31(6.79)	140 – 183	$F=5.60$
BMI (Mean (SD))	26.98 (7.60)	24.14 (3.54)	30.15 (8.71)	29.08 (8.42)	17.5 – 70.1	$\chi^2=27.81$
Overweight status						
Normal	14 (43.8)	27 (61.4)	14 (36.8)	30 (38.5)		
Overweight	13 (40.6)	15 (34.1)	5 (13.2)	21 (26.9)		
Obese	5 (15.6)	2 (4.5)	19 (50.0)	27 (34.6)		$\chi^2=31.77$
Smoking						
Never	21 (65.6)	41 (93.2)	26 (68.4)	37 (47.4)		
Past	8 (25.0)	3 (6.8)	8 (21.1)	18 (23.1)		
Current	3 (9.4)	0 (0.0)	4 (10.5)	23 (29.5)		$\chi^2=23.10$
Availability of social support						
None of the time	2 (6.3)	2 (4.5)	9 (23.6)	6 (7.7)		
A little of the time	6 (18.8)	5 (11.4)	5 (13.2)	22 (28.2)		
Some of the time	7 (21.8)	19 (43.2)	12 (31.6)	15 (19.2)		
Most of the time	17 (53.1)	18 (40.9)	12 (31.6)	35 (44.9)		$\chi^2=16.77$
Number of children						
0	5 (15.6)	2 (4.5)	11 (28.9)	13 (16.7)		
1–2	21 (65.6)	30 (68.2)	17 (44.8)	42 (53.8)		
3–5	4 (12.5)	12 (27.3)	10 (26.3)	21 (26.9)		
More than 5	2 (6.3)	0 (0.0)	0 (0.0)	2 (2.6)		
Favorite foods						
Vegetables	9 (28.1)	23 (52.3)	9 (23.6)	21 (26.9)		$\chi^2=40.45$
Fruits	5 (15.6)	5 (11.4)	1 (2.6)	4 (5.1)		

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Variables	N (%)				Range	F or χ^2
	Hispanics (N=32)	Asian-Americans (N=44)	African-Americans (N=38)	Caucasians (N=78)		
Grains	5 (15.6)	13 (29.5)	8 (21.1)	15 (19.2)	41 (21.4)	
Dairy products	1 (3.1)	0 (0.0)	0 (0.0)	5 (6.4)	6 (3.1)	
Meats	10 (31.3)	2 (4.5)	15 (39.5)	17 (21.9)	44 (22.9)	
Others	2 (6.3)	1 (2.3)	5 (13.2)	16 (20.5)	24 (12.5)	
Minutes for exercise (per week) (Mean (SD))	495.48 (571.94)	405.00 (299.34)	581.05 (627.91)	694.62 (592.91)	572.98 (552.06)	F=2.91 *
Minutes for leisure activity (per week) (Mean(SD))	495.48 (571.94)	405.00 (299.34)	581.05 (627.91)	694.62 (592.91)	572.98 (552.06)	F=2.91 *
Born in the U.S.						$\chi^2=85.71$ **
Yes	24 (75.0)	15 (34.1)	38 (100.0)	77 (98.7)	154 (80.2)	
No	8 (25.0)	29 (65.9)	0 (0.0)	1 (1.3)	38 (19.8)	

* $p < 0.05$,

** $p < 0.01$

Table 2

Self-reported health and menopausal status (N=192)

Variables	N (%)					X ²
	Hispanics (N=32)	Asian-Americans (N=44)	African-Americans (N=38)	Caucasians (N=78)	Total (N=192)	
Perception of own health						
Very unhealthy	2 (6.3)	2 (4.5)	1 (2.6)	3 (3.8)	8 (4.2)	8.41
Tend to be unhealthy	3 (9.4)	6 (13.6)	7 (18.4)	13 (16.7)	29 (15.1)	
Do not know	1 (3.1)	3 (6.8)	0 (0.0)	6 (7.7)	10 (5.2)	
Tend to be healthy	18 (56.2)	28 (63.7)	25 (65.8)	46 (59.0)	117 (60.9)	
Very healthy						
Yes	8 (25.0)	5 (11.4)	5 (13.2)	10 (12.8)	28 (14.6)	18.75**
No	12 (37.5)	5 (11.4)	17 (44.7)	39 (50.0)	73 (38.0)	
Diagnosed diseases	20 (62.5)	39 (88.6)	21 (55.3)	39 (50.0)	119 (62.0)	
Taking any medication	14 (43.8)	6 (13.6)	19 (50.0)	44 (56.4)	83 (43.2)	21.94**
Yes						
No	18 (56.2)	38 (86.4)	19 (50.0)	34 (43.6)	109 (56.8)	
Menopausal status						
Pre-menopause	7 (21.9)	11 (34.4)	14 (31.8)	11 (28.9)	29 (37.2)	13.43
Early peri-menopause	4 (12.5)	17 (38.6)	8 (21.1)	20 (25.6)	52 (27.1)	
Late peri-menopause	6 (18.8)	3 (6.8)	3 (7.9)	10 (12.8)	20 (10.4)	
Naturally post-menopause	4 (12.5)	7 (15.9)	5 (13.2)	9 (11.5)	27 (14.1)	20.51
Surgically menopause		3 (6.8)	11 (28.9)	10 (12.8)	28 (14.6)	
I can predict my menstrual period						
Within a day of when it will start	2 (6.3)	6 (13.6)	5 (13.2)	2 (2.6)	15 (7.8)	
Within 3–5 days of when it will start	9 (28.1)	11 (25.0)	8 (21.1)	21 (26.9)	49 (25.5)	
Within a week of when it will start	4 (12.5)	1 (2.3)	4 (10.5)	12 (15.4)	21 (10.9)	
Never know when it will start	6 (18.8)	16 (36.4)	4 (10.5)	17 (21.8)	43 (22.5)	
No more menstruation	11 (34.3)	10 (22.7)	17 (44.7)	26 (33.3)	64 (33.3)	24.00
Perception of how far away from menopause						
Already in menopause	8 (25.0)	13 (29.5)	18 (47.4)	22 (28.2)	61 (31.8)	
Within 1 year from menopause	5 (15.6)	10 (22.7)	2 (5.3)	16 (20.5)	33 (17.2)	
Within 1–2 years from menopause	2 (6.3)	8 (18.2)	3 (7.9)	19 (24.4)	32 (16.7)	
Within 2–3 years from menopause	2 (6.3)	2 (4.5)	4 (10.5)	5 (6.4)	13 (6.8)	
More than 3 years from menopause	11 (34.4)	7 (15.9)	7 (18.4)	8 (10.3)	33 (17.2)	
I have not begun the transition	4 (12.5)	4 (9.1)	4 (10.5)	8 (10.3)	20 (10.4)	
Use of oral contraceptives						
Yes	2 (6.3)	2 (4.5)	2 (5.3)	3 (3.8)	9 (4.7)	0.33
No	30 (93.8)	42 (95.5)	36 (94.7)	75 (96.2)	183 (95.3)	
Taking steroids or hormones						
Yes	3 (9.4)	2 (4.5)	3 (7.9)	8 (10.3)	16 (8.3)	1.26
No	29 (90.6)	42 (95.5)	35 (92.1)	70 (89.7)	176 (91.7)	

**
p < 0.01