RESEARCH PAPER

Health literacy issues surrounding weight management among African American women: a mixed methods study

D. C. S. James,1 C. Harville,1 O. Efumbum1 & M. Y. Martin2

1Department of Health Science Education, University of Florida, Gainesville, FL, USA
2Department of Biobehavioral Health, The Pennsylvania State University, University Park, PA, USA

Keywords
African Americans, health literacy, obesity, weight management.

Correspondence
D. C. S. James, Department of Health Science Education, University of Florida, PO Box 118210, Room 5 Florida Gym, Gainesville, FL 32611-8210, USA.
Tel.: +1 352 294 1806
Fax: +1 352 392 1909
E-mail: djames@hhp.ufl.edu

How to cite this article

Abstract

Background: Individuals with limited health literacy (LHL) have poorer health outcomes and have difficulty understanding and complying with recommendations to maintain a healthy lifestyle. The present study examined the association between health literacy (HL) and sources of dieting information, the weight-loss methods used and the information needed to manage weight among African American women.

Methods: This mixed method study included seven focus groups and a survey of 413 African American women. Binary logistic regression analyses were performed to examine the association between HL category and sources of dieting information, weight-loss methods and information needed to lose weight. Thematic analysis was used to analyse focus group data.

Results: Women with LHL were significantly more likely to have a higher body mass index (BMI) than those with AHL (P < 0.05). Compared to respondents with LHL, those with adequate health literacy (AHL) are more likely to rely on information obtained from the Internet (P < 0.001), although they are less likely to rely on information obtained from the television (P < 0.05). They also are significantly more likely to participate in physical activity to lose weight (P ≤ 0.002). In addition, women with AHL were significantly less likely to want information on portion control (P = 0.002). Major qualitative themes were the importance of television and the Internet as major sources of health information, the use of healthy and unhealthy weight-loss methods, and being overwhelmed by the plethora of dieting information.

Conclusions: HL may affect BMI among AA women, where they access dieting information and the types of information needed to manage their weight.

Introduction

Approximately one-third of adult Americans have limited health literacy (LHL) (Nielsen-Bohlman et al., 2004; DHHS, 2013). Health literacy (HL) has been defined in many ways and one recent comprehensive definition is: ‘the wide range of skills, and competencies that people develop to seek out, comprehend, evaluate, and use health information and concepts to make informed choices, reduce health risks, and increase quality of life’ (Zarcadoolas & Pleasant, 2010). Individuals with LHL face the same healthcare challenges as those with adequate health literacy (AHL): eating a healthy diet, maintaining a healthy weight, interacting meaningfully with their healthcare provider, understanding their health problems and choosing the appropriate treatment. However, they have the additional struggle of doing these tasks at the same time as lacking the necessary skills to find, understand and act appropriately on health information (Nielsen-Bohlman et al., 2004; DHHS, 2013). On a practical level, these individuals may have difficulties understanding the nutrition facts panel, understanding how to take medications,
finding their body mass index (BMI) on a chart, interpreting blood sugar or blood pressure values and discerning between credible and noncredible sources of nutrition information (Williams et al., 1995; Gazmararian et al., 1999; Schillinger et al., 2002; Nielsen-Bohlm an et al., 2004). They also may have difficulties processing oral communication and conceptualising health risk (Nielsen-Bohlman et al., 2004; Schwartzberg et al., 2005). As a result, they rarely participate in early detection and preventive healthcare practices and have difficulty understanding and complying with recommendations to maintain a healthy lifestyle (Ybarra & Suman, 2006).

AHL is important for management and treatment of diet-related diseases such as type 2 diabetes, cancer, hypertension and obesity (Williams et al., 1995; Gazmararian et al., 1999; Schillinger et al., 2002; Schwartzberg et al., 2005). Obesity has increased dramatically in all population groups in the USA, although it is especially high among those with LHL, low income, minorities and the uninsured (DHHS, 2010b). African American women experience one of the highest prevalence of obesity, with approximately 50% being obese and 78% being either overweight or obese (Flegal et al., 2010). This puts them at high risk for lower life expectancy and higher rates of chronic diseases than their non-obese counterparts (DHHS, 2010b).

Clients with LHL who are diagnosed with a chronic disease such as obesity have little knowledge about their disease and the corresponding treatments (Williams et al., 1995; Gazmararian et al., 1999; Schillinger et al., 2002; Nielsen-Bohlman et al., 2004). Despite the growing information on the magnitude and consequences of both obesity and LHL, little is known about the relationships between HL and weight management among African American women. The present study aimed to examine the association between HL and sources of dieting information, the weight-loss methods used and the information needed to manage weight among African American women.

Materials and methods

This mixed method study included seven focus groups and a survey of 413 African American women. This design allowed for comparison and corroboration of the quantitative results with qualitative findings (Creswell & Clark, 2007). The study was approved by the Institutional Review Board at the researchers’ institution.

Quantitative procedures

Data were collected over a 6-month period in 2009. Surveys were collected on-site at a low income housing community, a janitorial service, four beauty shops, five churches and the four traditional Greek African American sororities. Each participant provided verbal informed consent and received a $5 gift card for participating. The survey took 10–15 min to complete.

The survey was developed based on a review of the literature and a previously validated instrument (James, 2003, 2004). It was pilot tested with 50 women from two churches. Minor revisions were made in the wording and ordering of the questions. Demographic items included age, marital status, employment status, educational level, home ownership and living in subsidised housing. Cronbach’s alpha (α) measured the internal consistency of three questions that asked participants to ‘choose all that apply’ from several items: sources of dieting information (seven items, α = 0.78), methods used to lose weight (10 items, α = 0.81) and types of information needed to help them lose weight (seven items, α = 0.83). Women were weighed barefoot with indoor clothing on a digital scale and height was measured with a stadiometer. BMI was calculated based on participants’ weight and height (kg m$^{-2}$) (WHO, 2010). Weight status were classified into four categories: underweight (BMI < 18.5 kg m$^{-2}$), normal weight (BMI 18.50–24.99 kg m$^{-2}$), overweight (25.00–29.99 kg m$^{-2}$) and obese (BMI ≥ 30 kg m$^{-2}$) (WHO, 2010). HL was assessed using the Rapid Estimate of Adult Literacy in Medicine (REALM), a reading recognition test that provides a quick, valid assessment of a person’s HL (Davis et al., 1993). REALM was the first HL tool to be used in clinical practice and has been used in hundreds of research studies with various populations. It has been used with health conditions such as diabetes, obesity, cancer and cardiovascular disease (Nielsen-Bohlman et al., 2004; Schwartzberg et al., 2005). REALM consists of 66 health-related words. It does not assess comprehension but is highly correlated with other comprehension tests (Nielsen-Bohlman et al., 2004; Schwartzberg et al., 2005). It takes 3 min to administer and score. REALM scores range from 0 to 66 and can be interpreted as: LHL (<60 or less than 9th grade reading level) and AHL (61–66 or 9th grade or higher reading level) (Davis et al., 1993; Murphy et al., 1993).

Qualitative procedures

A sample of 50 women who completed the survey, the HL assessment and a contact card were recruited for the focus groups based on their HL score. Each group consisted of six to nine women. There were three groups of women with LHL and four groups of women with AHL. Each focus group lasted 60–90 min. Each participant provided their written informed consent and received a $25 gift card. The moderator’s guide consisted of 13 questions with relevant probes (Table 1). Major topics included
sources of dieting information, weight-loss strategies and information needed to lose weight.

Statistical analysis

Survey data were analysed using SPSS, version 21.0 (IBM Corp., Armonk, NY, USA). P < 0.05 was considered statistically significant. Descriptive analyses, including conventional cross-tabulations, were used to summarise the data and means are reported along with the SD. Independent sample t-tests and one-way analysis of variance (ANOVA) tests with multiple contrasts examined differences with respect to the REALM score and demographic variables and differences with respect to BMI and other study variables. Three binary logistic regression analyses were performed to examine the association of AHL/LHL and (i) sources of dieting information; (ii) weight-loss methods; and (iii) information needed to lose weight. The dependent variable was the HL level (LHL = 0 and AHL = 1). All independent variables were categorical (1 = yes and 0 = no). The amount of variation in the dependent variable explained by the model was determined using the Cox and Snell $R^2$ and the Nagelkerke $R^2$. Finally, odds ratio (OR) and likelihood-ratio tests were used to calculate the statistical significance of each predictor of the model. Cases with missing response or explanatory variables were not included in the analyses.

Focus group data were analysed using directed content analysis to identify key words, concepts and patterns in the data relating to sources of dieting information, weight-loss strategies and information needed. This method also helps to extend and support quantitative findings by identifying key concepts or variables as initial coding categories (Hsieh & Shannon, 2005). The transcripts were coded by four research assistants. Coders conducted in-depth reviews and re-reviews of the transcripts based on established themes from the codebook (Guba, 1978; Patton, 2002). Inter-coder reliability was 0.90 and was based on percentage agreement, which is one of the most popular coefficients used (Neuendorf, 2002). Major data themes and select quotes from participants are shown in Table 2.

Results

Demographics

Of the 448 questionnaires collected, 413 (92%) had complete data on BMI and REALM. Mean (SD) age was 35.63 (14.72) years. Most were native English speakers (93%), single (72%), employed (78%), worked full-time (60%) and owned their own homes (54%). The mean (SD) REALM score was 60.95 (7.22). Based on REALM score, 72% had AHL and 28% had LHL. The highest HL scores were found among women who were college educated, employed and owned their own homes ($P < 0.001$ for all).

Mean (SD) BMI was 29.60 (7.57). Women with LHL were significantly more likely to have a higher BMI than those with AHL ($BMI_{LHL} = 30.97 (7.85)$ versus $29.23 (7.07)\;kg\;m^{-2};\;P < .05$). Fifty-nine percent of participants were trying to lose weight, 23% were not doing anything, 12% were trying to stay at a healthy weight and 6% were trying to gain weight. There were no significant differences in HL scores and this variable ($P > 0.05$).

Sources of dieting information

Women in the survey obtained dieting information from a variety of sources: television (48%), female friends/
Health literacy issues and weight

Table 2 Binary nominal logistic regression of sources of dieting information and health literacy status among African American women (n = 413)

<table>
<thead>
<tr>
<th>Sources</th>
<th>β (SE)</th>
<th>Wald</th>
<th>Odds ratio</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Television</td>
<td>−0.53</td>
<td>4.10</td>
<td>0.59</td>
<td>0.04*</td>
</tr>
<tr>
<td>Newspaper</td>
<td>0.46</td>
<td>1.69</td>
<td>0.64</td>
<td>0.19</td>
</tr>
<tr>
<td>Magazine</td>
<td>−0.14</td>
<td>0.27</td>
<td>1.15</td>
<td>0.61</td>
</tr>
<tr>
<td>Friends</td>
<td>−0.12</td>
<td>0.17</td>
<td>1.12</td>
<td>0.68</td>
</tr>
<tr>
<td>Family</td>
<td>−0.17</td>
<td>0.32</td>
<td>0.844</td>
<td>0.57</td>
</tr>
<tr>
<td>Physicians</td>
<td>−0.10</td>
<td>0.14</td>
<td>0.91</td>
<td>0.71</td>
</tr>
<tr>
<td>Registered nurses</td>
<td>0.43</td>
<td>0.91</td>
<td>1.54</td>
<td>0.34</td>
</tr>
<tr>
<td>Internet</td>
<td>1.51</td>
<td>20.32</td>
<td>4.53</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Books</td>
<td>0.28</td>
<td>0.97</td>
<td>0.76</td>
<td>0.33</td>
</tr>
<tr>
<td>Registered dietitians</td>
<td>−0.48</td>
<td>1.28</td>
<td>1.62</td>
<td>0.26</td>
</tr>
<tr>
<td>Constant</td>
<td>0.91</td>
<td>18.59</td>
<td>2.47</td>
<td>&lt;0.001*</td>
</tr>
</tbody>
</table>

Model fit: $−2 \log\text{-likelihood} = 426.07$, $\chi^2 = 34.15$, d.f. = 10, $P = 0.004$; pseudo $R^2$ = Cox & Snell = 0.08, Negelkerke = 0.12; hit-ratio: 71.3%.

*P < 0.05.

relatives (41%), women’s magazines (37%), physicians (32%), the Internet (31%), diet books (27%), newspaper (16%), dietitians (12%) and nurses (11%). The binary nominal logistic regression model was significant ($\chi^2 = 34.15$, d.f. = 10, $P < 0.001$). In the suggested model, Wald criterion indicated two significant variables. Women with AHL were almost five-fold more likely than those with LHL to use the Internet for dieting information ($\beta = 1.510$, $P < 0.001$, OR = 4.56). However, they were almost two-fold less likely to rely on information from television ($\beta = −0.53$, $P < 0.05$, OR = 0.59) (Table 2).

The qualitative data analysis confirmed the findings from the survey in that they indicated the same sources of dieting information. The women mentioned a variety of sources, including television, female friends/relatives, women’s magazines and healthcare providers. Television talk shows and reality weight-loss programmes were mentioned as the source of information most often by women in both HL groups. Several women with LHL became animated when they mentioned female celebrities who had struggled with their weight publically: ‘Oprah has been up and down with her weight and her struggle is real. I think that she just needs to embrace the fact that she is big and beautiful and just move on’; ‘Star Jones melted away and now she’s big again. I think that the surgery messed her up’. Women with AHL appeared more focused on the details of the reality weight-loss programmes and getting ‘toned’ rather than losing a significant amount of weight: ‘I want to lose weight, but I want to have some thickness. I’m not looking to be skinny’.

Using the Internet was mentioned in all the AHL groups and most of the women appeared to be avid users. Most did random searches and only two mentioned specific websites or web portals: ‘I go to the Internet and look up the amount of carbs in foods’; ‘I look up restaurant menu items before I go out to eat and I just download an app on my phone that gives me all that information’. ‘All of the information you need to lose weight is one click’. The Internet was used to further research information they had heard or seen: ‘It’s difficult to know what works and what really doesn’t work at times so you need to do your research’. One woman admitted to ordering dieting products on the Internet: ‘When I see new stuff advertised on TV, I go online and order it. I am ashamed to admit some of the nonsense I’ve tried. I spent $300 on diet products from the Internet this month’. Several women in the AHL groups also mentioned two popular low-carbohydrate diets books that they ordered online.

Weight-loss strategies

Women in the present study were asked to select all that applied from nine weight-loss methods they had used in the past 6 months. Methods used were reducing fried foods (53%), reducing sweets (51%), increasing physical activity (46%), skipping meals (22%), fasting (17%), using meal replacement drinks/bars (12%), joining a weight-loss programme (10%), using over-the-counter diet pills (7%), using laxatives (6%) and vomiting (1%). The binary nominal logistic regression model was significant ($\chi^2 = 24.27$, d.f. = 9, $P = 0.004$). Wald criterion indicated only one significant variable. Women with AHL were two-fold more likely than those with LHL to increase physical activity to lose weight ($\beta = 0.78$, $P \leq 0.002$, OR = 2.17) (Table 3).

Women in the focus groups used healthy and unhealthy weight-loss methods. Physical activity, specifically walking, was the most common method used by women in all literacy groups. They articulated the importance of physical activity and cited several benefits, even when they were not currently exercising on a regular basis. Women with AHL also mentioned going to the gym, doing Pilates, lifting weights and using exercise videos. Two women with AHL had personal trainers. Three women with LHL said they would join a gym if it was cheaper. Instead, they walked on their lunch breaks or in the evening with a friend: ‘We exercise together and inspire each other’.

Women in all groups reported cutting back on fast foods, cutting back on sugar and fat, eating salads, eating less of their favourite foods, reducing beverage intake, or using smaller plates as ways to reduce caloric intake. Several women with AHL groups previously participated in Weight Watchers. One stated, ‘Weight Watchers is the
Table 3 Binary nominal logistic regression of weight-loss strategies and health literacy status among African American women (n = 413)

<table>
<thead>
<tr>
<th>Weight-loss methods</th>
<th>Estimate (B)</th>
<th>Wald</th>
<th>Odds ratio</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast</td>
<td>-0.37</td>
<td>1.59</td>
<td>0.68</td>
<td>0.21</td>
</tr>
<tr>
<td>Cut back on fried foods</td>
<td>-0.07</td>
<td>0.08</td>
<td>0.93</td>
<td>0.78</td>
</tr>
<tr>
<td>Skip meals</td>
<td>-0.40</td>
<td>1.98</td>
<td>0.67</td>
<td>0.16</td>
</tr>
<tr>
<td>Cut back on sweets</td>
<td>0.38</td>
<td>2.10</td>
<td>1.47</td>
<td>0.14</td>
</tr>
<tr>
<td>Join a weight-loss programme</td>
<td>0.52</td>
<td>1.18</td>
<td>1.67</td>
<td>0.27</td>
</tr>
<tr>
<td>Exercise more often</td>
<td>0.78</td>
<td>9.33</td>
<td>2.17</td>
<td>&lt;0.002*</td>
</tr>
<tr>
<td>Use laxatives</td>
<td>-0.01</td>
<td>0.01</td>
<td>0.99</td>
<td>0.98</td>
</tr>
<tr>
<td>Meal replacement drinks/bars</td>
<td>0.43</td>
<td>1.05</td>
<td>1.54</td>
<td>0.31</td>
</tr>
<tr>
<td>Diet pills</td>
<td>-0.29</td>
<td>0.35</td>
<td>0.75</td>
<td>0.554</td>
</tr>
<tr>
<td>Constant</td>
<td>0.615</td>
<td>9.05</td>
<td>1.84</td>
<td>&lt;0.01*</td>
</tr>
</tbody>
</table>

Model fit: $-2 \log$-likelihood $= 432.69$, $\chi^2 = 24.27$, d.f. $= 9$, $P = 0.004$; pseudo $R^2$: Cox & Snell $= 0.06$, Nagelkerke $= 0.09$; hit ratio: 72.9%.

* $P < 0.05$.

Table 4 Binary nominal logistic regression of information needed to manage weight and health literacy status among African American women (n = 413)

<table>
<thead>
<tr>
<th>Information needed</th>
<th>Estimate (B)</th>
<th>Wald</th>
<th>Odds ratio</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy recipes</td>
<td>-0.31</td>
<td>1.83</td>
<td>0.73</td>
<td>0.19</td>
</tr>
<tr>
<td>Portion control</td>
<td>-0.85</td>
<td>9.63</td>
<td>0.43</td>
<td>&lt;0.002*</td>
</tr>
<tr>
<td>How to increase self-esteem</td>
<td>0.44</td>
<td>2.82</td>
<td>1.55</td>
<td>0.09</td>
</tr>
<tr>
<td>Bible texts to memorise</td>
<td>-0.44</td>
<td>1.20</td>
<td>0.64</td>
<td>0.27</td>
</tr>
<tr>
<td>Constant</td>
<td>0.65</td>
<td>11.07</td>
<td>0.657</td>
<td>0.02*</td>
</tr>
</tbody>
</table>

Model fit: $-2 \log$-likelihood $= 437.69$, $\chi^2 = 23.78$, d.f. $= 7$, $P = 0.001$; pseudo $R^2$: Cox & Snell $= 0.06$, Nagelkerke $= 0.09$; hit ratio: 72.2%.

* $P < 0.05$.

only thing that works for me, but the price adds up and it’s hard to make all those meetings’. Another stated, ‘I stopped going to Weight Watchers because of the pressure to get weighed every week. I want to focus on the good habits I’m developing and not on what the scales say’. Three women with AHL mentioned unhealthy weight-loss methods such as skipping meals, fasting, enemies, thigh creams and diet pills. They were aware that these practices were unhealthy but expressed a frustration of failed dieting attempts. Overall, the women emphasised the importance of exercising, setting realistic goals, being disciplined and ‘not beating up yourself when you’re bad’; ‘I pat myself on the back when I eat one cookie instead of 10’.

Information needed to manage weight

Women in the present study reported they needed the following information to help manage their weight: healthy recipes (52%), portion control (40%), calorie recommendations (31%), stress management (28%), how to choose a weight-loss programme (27%), how to increase self-esteem (17%) and Bible texts to use as affirmation (13%). The binary nominal logistic regression model was significant ($\chi^2 = 23.78$, d.f. $= 7$, $P = 0.001$) and Wald criterion indicated only one significant variable. Women with AHL were more than two-fold as likely as those with LHL to want information on portion control ($\beta = -0.85$, $P = 0.002$, OR = 0.43) (Table 4).

Women often expressed being ‘overwhelmed with all the information out there’. However, they were very focused and adamant about the types of information they needed to be at a healthy weight. Most women from all HL focus groups wanted information on portion control, healthy recipes and structured meal plans with specific calories. One woman in the AHL group stated, ‘I want to know what to eat, how much to eat, and when to eat. I need structure because I don’t trust myself’. Several women in the AHL group attributed their excess weight to stressful eating. In addition, two felt challenged by being the only one at home on a diet: ‘My husband and kids just won’t cooperate with the programme’. Two women with LHL mentioned not knowing how much exercise they needed: ‘What I’m doing obviously isn’t working, so I need to know the kind of exercises I need to do to burn this fat off’.

Discussion

In this mixed-method study, we examined the association between HL and sources of dieting information, weight-loss methods used and information needed to manage weight among African American women. The Academy of Nutrition & Dietetics (2013) has identified HL as a ‘mega’ issue for the profession and as one of its seven public health priority areas. HL has also being identified as a key determinant of health that is often underestimated as a factor in achieving and maintaining a healthy weight (Nielsen-Bohlman et al., 2004; Kennen et al., 2005). Twenty-eight percent of study participants had LHL compared to almost 36% in the general population (Nielsen-Bohlman et al., 2004). This may be a result of the high number of college-educated women in the study. The prevalence of being overweight and obesity among women (68%) was similar to the national prevalence (66%) (Flegal et al., 2010). Most women were concerned...
about their weight and 59% were currently trying to lose weight, which is slightly higher than the national average of 51% for all adults (Weiss et al., 2006).

**Sources of dieting information**

Women used various sources for dieting information, with television being the most cited. Television has long served as a source of health information, with varying degrees of credibility (Christenson & Ivancin, 2006). Several current reality shows are focused on weight loss and obesity. Some offer information that is potentially useful, although researchers suggest that reality weight loss shows often promote unattainable, unrealistic and unaffordable weight-loss solutions (Thomas et al., 2007). They also focus heavily on the cosmetic rather than the lifestyle transformation of the contestants (Christenson & Ivancin, 2006).

Women with AHL were more likely to use the Internet to find dieting information. The Internet was used for various tasks such as looking up nutritional content of foods and buying diet pills and other weight-loss products. Studies have shown that desperation is a major motivation for searching for dieting information on the Internet, which often leaves individuals vulnerable to exploitation (Lewis et al., 2010). In 2009, 65% of white households and 46% of African American households had access to a broadband Internet service. By 2010, the gap narrowed significantly, with 67% of white households and 56% of African American households having broadband Internet (Smith, 2011). African Americans are the only demographic group that continues to experience significant growth in home broadband adoption each year (Smith, 2011). In addition, the National Broadband Plan aims to narrow the gap between the ‘haves’ and ‘have-nots’ (FCC, 2013) and has huge implications for online consumer weight management interventions and messages for those with AHL. However, those with LHL still have limited use of and access to the Internet, difficulties navigating web portals, lack of interest, and limited or no client input in web-based content and design (Eng et al., 1998; Norman & Skinner, 2006; Sarkar et al., 2010).

**Weight-loss strategies**

African American women appear to have a do-it-yourself approach to losing weight, which is consistent with published research (Weiss et al., 2006; Burroughs et al., 2010). They primarily used healthy methods to lose weight such as reducing fried foods, reducing sweets and exercising. Unhealthy weight-loss practices such as fasting, skipping meals, vomiting, and using diet pills and laxatives were used by a small percentage of women with AHL.

Losing weight is big business and Americans spend billions of dollars each year on commercial weight-loss programmes (DHHS, 2010a). Women with AHL were more likely to join a weight-loss programme than those with LHL. Studies show only modest results from a few programmes and weak evidence to recommend most of them. Furthermore, the cost of commercial programmes is still beyond the financial reach of most individuals (Tasai & Wadden, 2005).

Physical activity is an important requirement for weight management but less than half of the women who were trying to lose weight used physical activity to do so (DHHS, 2010a). Women with AHL were more likely to increase their physical activity to lose weight compared to those with LHL. Walking was the activity most cited in the focus groups and several women in the AHL groups had gym memberships. The amount of exercise was not assessed in the present study, although previous studies have found that most African Americans do not meet the national recommendations for physical activity (DHHS, 2010b; James, 2003, 2004). Food and nutrition professionals who work with this population will need to place emphasis on the benefits of regular physical activity, the need to participate in fun recreational activities, and the benefits of an exercise buddy (James, 2004). For obese women and those just starting a programme, an emphasis needs to be placed on short, frequent intervals of activity (DHHS, 2010a,b).

**Information needed**

The women requested healthy recipes more often than any other information to help manage their weight. A good strategy may be to help women modify traditional recipes by decreasing the amount of fat, sugar and sodium, rather than giving them completely new recipes that may not be culturally appropriate or financially feasible (James et al., 2012).

The increase in the prevalence of obesity has coincided with larger portions of foods and beverages eaten at and away from home and research suggests that larger portions may play a role in the obesity epidemic (Kennen et al., 2005). Forty percent of women in the present study said they needed information on portion control to help manage their weight, with women with AHL more likely to want this information. LHL is associated with difficulty reading food labels and inaccurately estimating portion sizes (DHHS, 2010a; James et al., 2012; Huizinga et al., 2009). This may be related not only to numerical literacy (Nielsen-Bohlman et al., 2004), but also to living in a society that values oversized portions (James et al., 2012). Food and health professionals should take the time to demonstrate appropriate serving sizes with the necessary teaching aids (Huizinga et al., 2009; USDA, 2010).
Many women, especially those with AHL, requested information on stress management to help with stress-related eating. Research suggests that stress can be both a cause and consequence of obesity (Foss & Drystad, 2011). Many weight management programmes and messages focus almost exclusively on diet and physical activity, although health professionals may need to go further and address overeating as a result of stress and other emotional triggers.

**Limitations**

The present study has several limitations. First, a convenience sample limits generalisability of the findings to African American women in the local geographical area and the general population of African American women. Second, a larger and more recent sample for the cross-sectional survey may have found different results. Third, cross-sectional surveys and focus groups cannot show a causal or resultant relationship between HL and obesity. Fourth, qualitative data are not meant to be generalisable to other groups, although the exploratory nature of focus groups is useful in assessing the needs of the target group and developing relevant programmes. Fifth, a HL tool is important but it is not sufficient for understanding and explaining how people make meaning of health information. It is also possible that a different tool would have provided different classification in HL. Despite these limitations, the results may have some practical applications to weight management programmes.

**Implications for research and practice**

African American women have a high prevalence of obesity, suffer disproportionately from obesity-related illnesses and experience a lower health-related quality of life than their non-obese counterparts (DHHS, 2010a). These issues can be further compounded among women with LHL. The findings of the present study have several implications for practice. First, LHL may reduce a patient’s ability to engage in shared-decision making for their treatment plan and to follow through on behaviour change recommendations. Second, the HL demands of common obesity treatment plans (finding BMI on a chart, measuring food portions, reading food labels, keeping a food diary, modifying recipes, etc.) is likely to overwhelm African American women with LHL and may limit treatment adherence. Third, there is a need to help clients differentiate between credible and noncredible sources of dieting information (television, Internet, etc.), regardless of HL level.

We recommend that practitioners use plain language principles to maximise their clients’ capacity to actively participate in the shared decision-making of their weight management treatment plan. No more than two to three concepts should be discussed at any session, and clients should reflect back on concepts learned to confirm understanding. Written materials should also use plain language and be written at a sixth to eight grade reading level. Additionally, short educational videos should be used more often (Norman & Skinner, 2006; Sarkar et al., 2010).

Most African American households have broadband Internet access and the numbers will continue to increase with the National Broadband Plan. Thus, further research is needed to develop and test the efficacy of weight management materials, websites and applications (i.e. apps) tailored to the client’s HL level.

**Conflict of interests, source of funding and authorship**

The authors declare that they have no conflict of interests.

The study was funded by an internal grant from and had approval from the Institutional Review Board at the corresponding author’s institution.

DCSJ was responsible for the study design, data collection, interpretation of data, drafting of the manuscript and review of the final copy. CH was responsible for data analysis, interpretation, writing, editing and review of the final copy. OE and MYM were responsible for writing, editing and review of the final copy. All authors critically reviewed the manuscript and approved the final version submitted for publication.

**References**


Health literacy issues and weight


