Appropriateness of Hispanic print materials: a content analysis

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Abstract
Hispanic women living in the US have a higher rate of later-stage diagnosis of breast cancer, thereby decreasing their chances of surviving the disease. Research shows print materials are more heavily relied on than any other medium to inform this population about early detection and treatment of the disease. Hispanics, moreover, are more likely to read English at below the fourth-grade level than the general US population and have a lower educational attainment than that of non-Hispanic whites. This paper discusses the results of a content analysis of 26 national print breast cancer educational artifacts distributed to Hispanic women. The purpose was to assess the linguistic appropriateness and cultural sensitivity of the materials in efforts to establish preliminary guidelines for the development of future materials. The author concluded that though many of the artifacts displayed elements of cultural competency, all 26 failed to include components essential to reaching and impacting the designated target audience. Even more significant was a survey of health clinics nationwide that determined the 26 print materials as the most heavily relied upon to provide Hispanic women with information on breast cancer.

Introduction
Recently, the National Cancer Institute (NCI) has identified low socio-economic status (SES) women aged 50 and over of various ethnic populations in the US as a priority audience for breast cancer and mammography education. While it is acknowledged that breast cancer and mammography education are important for all women, it is essential to focus limited resources on low SES audiences, as they have higher mortality rates than middle class white women of all ages and have not been the primary recipients of educational and screening programs to date (DHHS, 1992a).

In the US, Hispanic women in particular are an important population to educate because they are at greater risk to be diagnosed with larger tumors and with regional or distant metastases (Richardson et al., 1987) and have a higher rate of later-stage diagnosis, thereby decreasing their chances of surviving the disease (ACS, 1992). According to the National Health Survey (DHHS, 1987), Hispanic women aged 50–59 are less likely to be aware of mammograms. In a study examining the barriers to the utilization of mammography screening among low-income Hispanic women, Fox and Stein (1991) found that 71% of Hispanic women never had a mammogram and only 27% of women 50 years or older had received one in the year previous to the survey.

Research showed that major national cancer organizations have more heavily relied on printed breast cancer educational materials than on any other medium to inform Hispanic women about early detection and treatment of the disease (DHHS, 1992b). Therefore, in this article the author reports
the results of a content analysis of 26 national print breast cancer educational materials targeting Hispanic women living in the US. The purpose of this content analysis was to assess the linguistic appropriateness and cultural sensitivity of the materials in efforts to establish preliminary guidelines for the development of future materials.

Hispanic women face such barriers to breast cancer education and screening as cultural differences, cost, lack of physician referral and limited proficiency in English (Fox and Stein, 1991). In particular, low literacy rates of Hispanic women in both English and Spanish hinder effective communication between health care providers and their Spanish-speaking recipients (DHHS, 1990a). In the US, Hispanics are four to six times more likely to read English at below the fourth-grade level than the general US population [National Coalition of Hispanic Health and Human Service Organizations (COSSMHO), 1990]. Thirty-three percent of Hispanic females 20–24 years of age had not completed high school in 1986 (DHHS, 1990a). Notably, the exact profile of Hispanic women differs depending on each Hispanic subgroup, but according to the US Bureau of the Census (1990), the educational attainment of all Hispanic women aged 25 years or older was lower than that of non-Hispanic whites.

Furthermore, the ability to communicate verbally in Spanish is not necessarily accompanied by literacy in Spanish (Richardson et al., 1987; Zapka et al., 1989). 'It does not particularly follow ... that it will solve the communication gap if materials are developed in Spanish rather than English, because particular target groups may have low literacy in Spanish as well' (COSSMHO, 1990, p. 18). Moreover, experts suggested that materials written in English should not simply be translated into Spanish. 'They must be adapted linguistically and culturally to your target population' (COSSMHO, 1990, p. 82).

As mentioned above, organizations have relied extensively on printed materials to disseminate health promotion and education messages to specific populations (DHHS, 1992b). It is suggested that Spanish educational materials are most effective when developed specifically for the target population (COSSMHO, 1990). In addition, linguistic appropriateness and message presentation—color, conceptual difficulty, graphics, layout, organization of materials, sentence flow, typography, vocabulary and writing style—play an essential role in whether educational print materials are looked at, read and understood (DHHS, 1992,b).

Furthermore, culturally appropriate terms should be considered for each population. The word 'breast', for example, translates into a variety of different terms (e.g. 'el seno', 'el pecho' and 'las mamas') and each represents a more appropriate word, depending on the subgroup addressed.

Overall, the reasons for liking or disliking specific materials vary considerably across cultures as well as within specific ethnic populations. In addition, a wide diversity of preferences must be examined when designing educational materials. As a result of such issues, the focus of this article was guided by the following two research questions:

(1) Do the message presentations in the available print breast cancer education materials reflect Hispanic women's cultural preferences?
(2) To what extent do the artifacts meet the needs of the large percentage of Hispanic women living in the US who have low levels of literacy—those identified as the most in need of information?

Method

Literature searches
To learn about the cultural context of the Hispanic community as well as to operationalize the term 'cultural sensitivity', the author reviewed health education and communication literature, census data, reports and statistics, medical and public health references, behavioral and social science literature, and local Hispanic publications.

Expert interviews
Six personal interviews were conducted with experts in the field of Hispanic health communication and education to identify the development
process of Hispanic educational materials (e.g. pre-testing, literacy levels), definitions of cultural and linguistic sensitivity. The experts included the Program Coordinator of the Hispanic HIV/AIDS Program, American Red Cross; the Coordinator of the Hispanic Education Program, Information Projects Branch, Office of Cancer Communications, NCI; a Cancer Researcher, COSSMHO; the Director of Health Communication, Department of Speech Communication, University of Maryland at College Park; and health educators from Macro International Inc., Calverton, MD and La Clinica del Pueblo, Washington, DC. One phone interview was conducted with a representative from the national office of the ACS.

Selection of materials
The national breast cancer education materials consisted of 26 coded artifacts written in Spanish, nine of which had a published English counterpart. They were either brochures, booklets, pamphlets or newsletters generally distributed through health professionals, community programs and toll-free numbers. The author obtained the materials from the following national organizations: the ACS, National Alliance For Breast Cancer Organizations and NCI. The author selected these organizations based on the premise that they are the primary providers of national print breast cancer education materials available to the general health consumer.

To confirm this premise, a random sample of US primary care centers—non-for-profit providers of primary care, serving predominantly non-white patients (60-70%) representing many different ethnic and cultural groups—located in communities with a documented dense Hispanic population were contacted. Although Hispanics reside in every state in the US, 89% are concentrated in nine states (California, Texas, New York, Florida, Illinois, Arizona, New Jersey, New Mexico and Colorado) (US Bureau of the Census, 1990). Based on the ‘Primary Care Centers Directory’ (DHHS, 1993), 20% of all health centers that serve Hispanic populations in the nine states were randomly selected and contacted to identify the source of their breast cancer educational materials distributed to Hispanic women. Of the 33 primary centers contacted, 100% reported using breast cancer education materials supplied from one of the three aforementioned national organizations (in the case where a central office distributed materials to several clinic sites, responses were sought concerning all their sites, but only the central office was included in the sample count). Only 6% of those contacted also distributed breast cancer materials supplied by additional sources.

Focus groups
To gather in-depth information that reflected the opinions of the target audience, two, 2 h focus groups were conducted in Spanish during December 1993 and January 1994 in the Boston, MA and Washington, DC metropolitan areas at urban community centers. The author identified community agents within ethnic communities that serve a high proportion of Hispanic women. The agents, in turn, identified and arranged meetings with pre-established groups consisting of women who met the eligibility criteria.

The eligibility criteria included sex, immigration status, age, SES, literacy skills and ethnic origin. Specifically, all women were immigrants over 40 years of age, with the majority over 50 years. Though the specific SES of the women was not obtained, the community agents—familiar with their backgrounds—assessed them as of low SES. Self-reports identified all but one woman as of limited literacy skills. Finally, as ‘Hispanic’ is a generic term contrived by the US Bureau of the Census to classify persons of Spanish origin (COSSMHO, 1990) and does not represent a homogenous group, efforts were made to include representatives from each of the five subgroups, i.e. Mexican or Mexican Americans, Puerto Ricans, Cuban or Cuban Americans, Central or South Americans and ‘Other’ Spanish/Hispanic. The majority of women in the focus groups, however, were from Central America, Puerto Rico and Mexico, and did not fully represent all subgroups. Although the women were not of homogenous origins (a characteristic recommended for focus groups to aid in open communication and increase
the likelihood of shared experiences and opinions), the participants were homogeneous on all other criteria and did not seem to have any difficulties relating to and understanding one another.

Approximately 10 women participated in each focus group. Upon introductions the women were asked to review the printed breast cancer educational materials, and then asked to indicate which one of the artifacts they liked the most and which one they liked the least, and to provide a reason for their opinion. Additionally, they were asked to share how they would improve the artifact they liked the least. The author also was interested in identifying whether or not Hispanic women with low literacy skills could obtain pertinent information from the available materials.

**Coding instrument**

The coding instrument for this study consisted of three sections constructed from the information gathered through the literature searches, expert interviews and focus groups. The first section of the codebook addressed general identifying characteristics of the artifacts, such as their focus, format, language, publisher, size of type and year of publication. The second section explored the cultural sensitivity of the artifacts, addressing the appropriateness of their text, design/layout and pictures/illustrations.

The final section of the codebook determined the artifacts' reading levels. Unfortunately, no readability tests existed for the Spanish language and English formulas—which counted the number of syllables in a given sentence to determine difficulty—inaccurately assessed their reading levels (i.e. because the Spanish language consists of many polysyllabic words even at the most basic vocabulary level, counting the number of syllables per sentence would be an inappropriate criteria). To circumvent this problem, it was suggested that one could viably induce the reading level of a Spanish artifact by determining the reading level of its published English counterpart (Castro, personal communication). Therefore, the SMOG grading formula—determined to be both simple to use and accurate (DHHS, 1992b)—was employed to test the nine Spanish artifacts with English counterparts available. In addition, a bilingual, native Spanish-speaking person translated into English two randomly chosen artifacts written in Spanish (that did not have an English counterpart). The reading levels of the translated versions also were calculated.

**Coding**

Four Hispanic coders representing four of the Hispanic subgroups were carefully trained. Two coders coded six artifacts each and two coders coded seven artifacts each. In a training session, detailed instructions were given and definitions for all variables were discussed. The coders practiced coding artifacts until consensus was reached on all definitions. The actual coding of the artifacts began only after the coders demonstrated consistent responses to the final coding instrument.

Six of the artifacts were double-coded, representing 23% of the total amount of coded artifacts. This double-coding was done unknowingly by the coders in an effort to monitor intercoder reliability. The percent of agreement formula was employed to calculate estimates of intercoder reliability. The overall intercoder reliability was 82%.

**Results and discussion**

**General identifying characteristics**

Almost one-third (32%) of the coded materials were published by the ACS, slightly over one-third (36%) were published by the NCI and 32% of the materials were distributed by the National Alliance of Breast Cancer Organizations. Forty-six percent of the coded artifacts were two to five pages in length, 19% were six to nine pages in length, 15% were 12 to 15 pages in length and 19% of the artifacts were 17 to 23 pages in length.

**Focus**

In the artifacts, 'prevention of breast cancer' was mentioned 77% of the time as a key message, 'treatment of breast cancer' was mentioned 46% of the time and 'living with breast cancer' was mentioned 35% of the time. As pointed out previ-
ously, Fox and Stein (1991) found that 71% of Hispanic women had never had a mammogram and only 27% of women 50 years or older had received one in the year previous to the survey. Clearly, it is beneficial that a majority of the coded materials targeting Hispanic women focused on prevention of breast cancer through mammography screening.

**Reading level**

When designing educational print materials for Hispanic populations, the Program for Appropriate Technology in Health (PATH) (1989) recommended that print materials accommodate an audience proficient within the fourth to sixth grade reading levels. The calculated reading level of the nine English artifacts, however, revealed that 100% of them were written at or above the ninth grade reading level, with the 13th grade reading level as the highest. In addition, the SMOG formula when applied to the two translated versions of artifacts (written in Spanish and not having an English counterpart) resulted in a ninth and 10th grade reading level, respectively.

**Format**

Fifty percent of the coded artifacts were available in the format of a booklet/pamphlet (i.e. multiple pages stapled), 42% in the format of a brochure (i.e. a one-page fold out) and 8% of the artifacts were available in the format of a newsletter. In addition, the results revealed that 26% of the artifacts included no photographs and/or illustrations to supplement its text. Moreover, a review of the first five pictures/illustrations within each of the 19 artifacts that included pictures and/or illustrations revealed that photographs accounted for only 14% of the total sample.

According to PATH (1989), placing illustrations throughout the text makes the material more appealing and can help the reader absorb the information presented. The literature searches and focus groups also revealed that Hispanic women most often preferred educational materials in the format of ‘fotonovelas.’ The ‘fotonovela’ is an entertaining approach using photographs and storylines to deliver health promotion and education messages. Central to the success of ‘fotonovelas’ is the visual dramatization of healthy and preventive behaviors that may change and improve the lives of individuals and their families. Designed as low literacy educational materials in print, ‘fotonovelas’ reflect a target group’s culture in efforts to overcome communication barriers (Novela Health Education, 1993). A comparison of ‘fotonovelas’ to traditional health education print materials conducted by Novela Health Education (1993) indicated that ‘fotonovelas’ are read from cover to cover, are shared (each one may be read by at least six people, especially within a family) and encourage positive behavior change. Of the coded materials, 100% were published in the traditional format (booklet/pamphlet, brochure and newsletter) and could not be classified as ‘fotonovelas.’

**Language**

Of the 26 artifacts, 89% were written in Spanish only, while the remaining 12% were written in both Spanish and English. The AMC Cancer Research Center’s (1992d) guidelines for the development of educational print materials for low-literate audiences suggested that it is most appropriate to use the preferred language of the target audience. When developing materials for culturally diverse audiences, however, they recommended to produce bilingual print materials whenever possible in efforts to assure that intermediaries and family members who may be comfortable with only English may help the reader understand the artifact’s context.

**Ease of readability**

In 96% of the materials the smallest font size was 12 point or below. In contrast, in 68% of the artifacts the largest font size was between 20 and 24 point.

The AMC Cancer Research Center (1992d) suggested that very small font size may discourage poor readers and that very large font size may take up too much room. They suggested a font size between 14 and 20 point. As the research reflected,
Table I. Visual illustration of font sizes

<table>
<thead>
<tr>
<th>Font size (points)</th>
<th>Visual example</th>
</tr>
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<tbody>
<tr>
<td>8</td>
<td>cancer</td>
</tr>
<tr>
<td>10</td>
<td>cancer</td>
</tr>
<tr>
<td>12</td>
<td>cancer</td>
</tr>
<tr>
<td>14</td>
<td>cancer</td>
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<tr>
<td>18</td>
<td>cancer</td>
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<tr>
<td>20</td>
<td>cancer</td>
</tr>
<tr>
<td>24</td>
<td>cancer</td>
</tr>
</tbody>
</table>

Visual example: cancer cancer cancer cancer cancer cancer cancer
d The majority of the materials were written in font sizes both too small and too large. Additionally, the results revealed that a font size between 10 and 12 point appeared the most frequently (74%) in all of the materials. Once again, this figure does not fall within the range recommended by PATH. Furthermore, designers of print material must consider that women most affected by breast cancer and therefore in need of educational materials generally are 50 years and older (ACS, 1993). As the Hispanic women in the focus groups pointed out, small font size can prove difficult to read. See Table I.

The AMC Cancer Research Center (1992d) also suggested increasing the amount of white space between the lines of the text to better adapt educational print material for low-literate audiences. Specifically, the text should accommodate double- or even triple-spacing between the lines. The text of the majority of the 26 artifacts (77%), however, used single-spacing, with only 23% of the text double-spaced.

When selecting methods to emphasize and reinforce important messages within printed material, both the AMC Cancer Research Center (1992d) and PATH (1989) encouraged the use of boldface, 'box' or underlining written text. In 96% of the artifacts text appeared boldfaced, in 31% text appeared 'boxed' and in 4% of the artifacts text appeared underlined. Moreover, text should not appear in ALL CAPITAL LETTERS because ALL CAPS ARE HARDER TO RECOGNIZE BECAUSE THE SHAPES OF THE LETTERS DO NOT VARY MUCH. Lower case letters offer more visual cues that help poor readers to recognize them easier. Additionally, text should not appear in italics because italics take longer to read and will decrease comprehension (AMC Cancer Research Center, 1992d; PATH, 1989). The results revealed that 77% of the artifacts included text that appeared in ALL CAPITAL LETTERS and 38% included text that appeared in italics.

Finally, research indicated that a question and answer format and
- bulleted format

serve as the two most effective methods of text layout for low-literate audiences, while text layout in paragraph format serves as the least effective method (PATH, 1989; AMC Cancer Research Center, 1992d). The results revealed that the majority (88%) of the artifacts utilized a paragraph text layout, followed by bulleted format (69%), and question and answer format (46%).

Key messages
In the artifacts, the coders extracted 29 specific messages (intercoder reliability resulted in a score of 60%, but upon closer review of the responses, differences between coders were a result of minimal word choices when describing a key message), ranging from the importance of regular mammography screening and where to receive a mammogram to finding breast lumps, treatment and where to seek support. The importance of early detection through regular mammography screening was pointed out most frequently (15 times) while the following messages were pointed out only one time: cost of mammograms, possible reasons for the delay in seeking a mammogram, finding breast lumps, the importance of seeking a second opinion, stages of breast cancer and how to treat side effects.

Twelve percent of the time, a message was repeated twice within the same artifact and only 7% of the time was a message repeated three times.
within the same artifact. No message appeared more than three times within the same artifact. None of the artifacts included a review section. PATH (1989) established the guideline of reviewing messages repeatedly when developing educational print materials for low-literate audiences. Experts suggested restating important information and including review sections whenever possible to help the reader understand and remember the messages presented.

**Explanation of technical and/or unfamiliar terms**

All of the materials that included a glossary of unfamiliar and/or technical terms (15%) were in the format of a booklet/pamphlet focusing on treatment and living with breast cancer. No booklets/pamphlets focusing on prevention provided a glossary. Additionally, no artifacts in the format of brochures or newsletters provided a glossary. According to the AMC Cancer Research Center (1992d), educational print materials targeting low-literate audiences should provide a glossary. Furthermore, focus group results revealed that Hispanic women preferred artifacts that included a glossary.

**Additional information**

Fifty-eight percent of the artifacts provided an address to obtain additional information, 12% provided a bibliography, 42% included a telephone number and 81% offered a toll-free telephone number. No artifacts included a fax number. The considerable amount of materials that included a toll-free number represents a positive step to provide Hispanic women with a cost-efficient method to obtain additional information concerning breast cancer and support.

**Appropriate terminology**

In 85% of the artifacts, the Spanish term 'seno' was used for the English word 'breast.' In 15% of the artifacts, the Spanish term 'pecho' was used and in 12% the Spanish term 'mamas' was used. No other Spanish terms were used for the English word 'breast' in any of the artifacts. Additionally, in 65% of the artifacts, the Spanish term 'mammografia' was used for the English word 'mammography.' In 39% of the artifacts, 'mamograma' was used and in 4% 'machina' was used for the English word 'mammography.' In 8% of the artifacts two other Spanish terms were used for the English word 'mammography,' i.e. 'examen de los senos' and 'radiografia de los senos.'

The AMC Cancer Research Center (1992d) suggested that appropriate words familiar to members of the target audience should be used to acknowledge their linguistic specificities. Cultural variations should be acknowledged even within a specific target group. It is essential to utilize the different Spanish terms available for the English words breasts and mammography—even within the same pamphlet—in efforts to acknowledge that each of the Hispanic subgroups may be familiar with or perceive a different term appropriate. Ideally, educational print materials should be developed targeting each specific subgroup of the Hispanic population. Because budget, human resource and time constraints often compromise this ideal situation, the utilization of various terms within the same artifact may provide an adequate concession.

**Color scheme**

Only two of the 26 coded artifacts were printed in black and white. Half (13) of the coded artifacts were printed in a one-color scheme, four were printed in a two-color scheme, four were printed in a three-color scheme and two of the coded artifacts were printed in a four-color scheme or above. Research and the focus groups have revealed that Hispanic women prefer the use of at least a one-color scheme in artifacts, as opposed to black and white materials (PATH, 1989; AMC Cancer Research Center, 1992a,b). According to PATH (1989), colors have different connotations in different cultures and must be considered in the design of printed educational materials. Some Asian countries, for example, refer to red as a symbol of happiness, while in areas of Africa, it represents a symbol of death. A paucity of information, however, exists which addresses the preferred color.
schemes of Hispanic women, particularly how it may vary among different subgroups.

Pictures/illustrations
Within all of the artifacts, a total of 64 pictures/illustrations appeared. A sample of the first five pictures/illustrations within each of the 19 artifacts that included pictures and/or illustrations revealed that 84% of the pictures/illustrations were represented by a simple line drawing, 14% were represented by a photograph and 2% were represented by a cartoon style drawing. As mentioned earlier, research has shown that Hispanic women prefer the use of photographs over simple line drawings and in particular prefer 'fotonovelas'. The 64 pictures/illustrations within the artifacts did not reflect their preference. Fifty-four (54%) of the total pictures/illustrations only used simple line drawings to depict their messages.

Within the sampled photos/illustrations surveyed, 30% of the pictures/illustrations included 'a lot of' detail and 70% included 'a little' detail. Of the 'a lot of' detail, 84% were simple line drawings and the remaining 16% were photographs. Of the 'a little' detail, 85% were simple line drawings, 13% were photographs and 2% were cartoon style drawings. The author operationalized the term 'a little' as the exclusion of any extraneous background design, detail or objects that were not crucial to the understanding of the message. The term 'a lot' signified the inclusion of such extraneous background detail. Coders were trained and tested to correctly identify 'a lot' and 'a little.'

Guidelines for the development of educational materials for low-literacy readers suggested the use of photographs/illustrations that avoid extraneous background detail (AMC Cancer Research Center, 1992d). Photograph(s) and/or illustration(s) should clearly and simply address the key messages in the artifact. Fewer background details minimize the potential risk that the reader will misunderstand the intent of the photograph/illustration. Overall, the majority of both the photographs and illustrations of the artifacts successfully limited the amount of extraneous background detail.

Hispanic persons and/or setting represented
Of the artifacts that included pictures and/or illustrations, the coders perceived that 37% included pictures/illustrations that represented Hispanic persons. In their opinion, some pictures/illustrations reflected specific Hispanic characteristics, such as 'facial features and skin color'. Another reason for deeming the persons as Hispanic in nature, was that 'the Hispanic community is diverse', suggesting that a wide range of physical characteristics may represent Hispanic persons.

Sixty-three percent (63%) of the pictures/illustrations in the artifacts, however, did not represent Hispanic persons, according to the coders. The reasons provided were the following: 'all the people portrayed are light skin and blond'; 'all the women are the same, it’s just a drawing'; 'Hispanics [do not resemble] black African Americans'; 'no diversity in skin color'; 'no specific characteristics'; 'no details'; 'they look either white or black' and the 'women can’t be seen very clearly.' Additionally, the coders perceived that none of the pictures and/or illustrations in the materials depicted a Hispanic setting. The reasons provided were the following: 'a bed is not [indigenous] to any community'; 'all the settings look like regular bedrooms and medical rooms'; 'can’t tell, it’s just like a hospital background'; 'it’s a doctor’s office'; 'it’s a medical setting'; 'not much detail' and 'there are no settings'. The author acknowledges the subjectivity regarding the judgments of the coders in describing 'Hispanic' and understands the limited ability to generalize beyond their opinions. The main objective when including this question, however, was to receive preliminary feedback regarding the perceived appropriateness of the artifacts' representation of the target population.

Symbols
Of the 26 artifacts, only one portrayed a symbol intended to communicate the passage of time. A brochure included an illustration of a birthday cake with the number '40' displayed on it. When designing literature for low-literate audiences, the
AMC Cancer Research Center (1992d) recommended the use of symbols and/or objects in the pictures or illustrations to communicate the passage of time. Additionally, designers should pre-test such symbols/objects with the respective target population to ensure their cultural appropriateness and understanding. The use of a marked calendar, for example, might represent how often a woman should conduct a breast self exam.

In an interview with the Coordinator of the Hispanic Communications Program, Information Projects Branch, Office of Cancer Communications of the NCI (Castro, personal communication), the birthday cake mentioned above was intended to reflect the age at which women should receive their first mammogram. Hispanic women in the first focus group, however, were unsure of the cake's significance. Many of them could not read and the cake, when viewed concurrently with the other three illustrations in the brochure, was perceived as an attempt to sell a vacation trip as opposed to an intention to promote regular mammography screening.

Offensiveness
In response to an open-ended, more subjective question, the coders were asked to comment on anything in the artifacts that they perceived as offensive. The definition of 'offensive' was left open to the coders' own interpretation. Of all artifacts, only one was perceived as offensive due to a great deal of misspelled words appearing in the brochure.

Recommendations
In this content analysis, the author explored to what extent the national print breast cancer educational materials successfully reflected linguistic and cultural preferences of Hispanic women. Upon conducting literature searches, expert interviews and focus groups to establish criteria for an accurate assessment of the materials, the author has come to view cultural sensitivity in terms of a continuum. Becoming culturally sensitive is a developmental process and a goal that health care providers and professionals must strive toward. No matter how culturally sensitive one may become, there will always be room for growth. The Child and Adolescent Service System Program (CASSP) (1989) provided a model continuum that defines cultural sensitivity on a range from cultural destructiveness (i.e. the purposeful destruction of a culture or the process of dehumanizing minority cultures) to cultural proficiency (i.e. the conscious holding of all cultures in high esteem and the valuing of cultural differences). Four other positions fall on the continuum between these two extremes: cultural incapacity, cultural blindness, cultural pre-competence and cultural competence (CASSP, 1990).

From her results, the author concludes that the organizations that designed and produced the 26 coded materials are moving toward the positive end of the continuum. In summary, the materials displayed many characteristics necessary to accommodate low-literate Hispanic women. Most importantly, the materials' key messages addressed prevention and early detection of breast cancer. Hopefully, such messages will contribute to an increase in mammography screening and ultimately decrease Hispanic women's later stage diagnoses.

In addition, all of the materials were written in Spanish, with some incorporating a bilingual approach. As mentioned earlier, the mere translation of text into the target population's native language often fails to effectively communicate the messages. Several of the major national cancer organizations have recognized this point and begun to adapt their materials accordingly. The ACS, for example, often delegates the translation of English materials to Spanish to their regional offices. Rather than all of their chapters disseminating the same print materials written in a generic form of Spanish, each area works with a local translator to more closely reflect their community's dialect.

Organizations also have included methods for readers to obtain additional information beyond the written artifact. Most materials listed a toll free number that offers a cost-efficient and easy access...
medium. Finally, many utilized a variety of text layout formats to emphasize the materials' main points (e.g. boldfaced words, bulleted). They also attempted to minimize extraneous details in photographs/illustrations to enhance clarity and understanding.

Unfortunately, despite their positive aspects, all of the 26 artifacts neglected various criteria essential to design culturally sensitive artifacts. Most notably, the reading levels did not reflect proposed guidelines recommended in the development of print educational materials for low-literate audiences. According to Stein and Fox (1990), 'there is a critical need to go beyond the mere translation of public health information from English into Spanish because the information may be written at too high an educational level for the very women who need it the most' (p. 1716). Additionally, the combination of the small font size, the limited white space between lines of text, the extensive reliance on a paragraph format and the minimal use of photographs/illustrations contributed to highly dense and difficult to read artifacts, especially for low-literate readers. Furthermore, the designers failed to provide a repetition of messages within the same artifact to emphasize its key points. Finally, a dearth of the materials represented Hispanic persons in their photographs/illustrations and none attempted to adjust the setting of the pictures to Hispanic subgroups. One artifact even misspelled words and neglected to use appropriate accent marks.

Overall, the author recommends that developers of future printed educational materials adhere to the AMC Cancer Research Center's and PATH's guidelines to increase the artifacts' ease of readability. She believes the results of the content analysis demonstrate the necessity for future testing to establish criteria to accurately personify Hispanic women of all subgroups. Though the coders inferred that the medical settings, for example, were generic in nature for all cultures, the author believes formative research would reveal factors that should be included within the pictures/illustrations to represent a more culturally sensitive setting for Hispanic populations.

What appeared evident upon interviewing experts in the field was the lack of formative research conducted when designing the materials. One expert stated that only one time did they solicit the opinion of the target audience during the development of a breast cancer artifact. Generally, experts said that their formative research was limited to interviews and consultations with other experts in the field for a second opinion, rather than with members of the target audience. Several reasons for not conducting extensive formative research included limited resources and time, and a belief that the organizations were able to sufficiently represent the needs of the target population without involving their input.

Overall, the results of the comprehensive analyses of the coded breast cancer materials led the author to conclude that national cancer organizations have yet to reach the position of 'cultural competency' on the continuum. In order to do so, they need to distinctly identify and meet the needs of the Hispanic community. Specifically, they must acknowledge and adapt to each subgroup's cultural characteristics (CASSP, 1989). They must consider Hispanic health beliefs and customs that influence Hispanic women's ability and willingness to carry out preventive health behavior and comply with treatment protocols (COSSMHO, 1990). Only extensive formative research prior to the development of the materials can identify culturally specific preferences of the target audience (Flay and Burton, 1990).

For example, some of the Hispanic subgroups view health as directly related to the spiritual side of life and to balances in the forces that impact their lives (CASSP, 1989). Another specific example is the hot/cold theory of disease and treatment. Some Hispanics consider that health is the product of equilibrium among the four body humors and their respective temperatures—blood and yellow bile being 'hot' and phlegm and black bile being 'cold' (Witte, 1991). According to the hot/cold theory, diseases are caused by a humeral imbalance. Foods and medications are thought to cure disease by restoring balance. Thus some members of Hispanic subgroups believe that a 'hot' illness is cured by...
balancing it with 'cold' medications and foods, and 'cold' illnesses are treated with 'hot' substances (COSSMHO, 1990). Available print educational materials on breast cancer may therefore inadvertently suggest treatment options of breast cancer or ways of living with the disease inconsistent with the patients' and families' beliefs.

Additionally, materials recommending dietary changes, whether to prevent breast cancer or to promote healthy living with the disease, should acknowledge that various Hispanic groups each have their own nutritional habits, originating with the foods found in their geographic area (COSSMHO, 1990). Ideally, the materials should recommend food substitutions and other dietary changes that the patients will accept (Murillo-Rhode, 1979). Finally, before developing future print educational materials designers should explore other beliefs and customs such as Hispanics' use and sources of medication, their belief in folk healers, and their home remedies.

In conclusion, this content analysis offers a preliminary attempt to define the current status of cultural sensitivity in the most widely available print breast cancer education materials targeting Hispanic women. The author has found that the national organizations have finally begun to acknowledge the need to investigate the cultural characteristics of various ethnic groups. In the case of the materials designed for Hispanic women, the significance cannot be stressed enough. As the author demonstrated earlier, these 26 artifacts represent the majority of the educational materials available in Spanish in the US. Most of the federally funded community and migrant health centers—who have limited resources for the development of their own artifacts—rely solely on the materials disseminated by the national organizations. Unfortunately, the latter have produced print materials linguistically inappropriate and culturally insensitive to Hispanic women. They have stated that extensive formative research is beyond their resources. The author argues, however, that formative research is imperative and ultimately cost-efficient. Adequate formative research will make the difference in whether the materials will be credible, memorable, relevant, understandable and, most importantly, acceptable to the target audience. Though many other structural factors exist that may inhibit Hispanic women from receiving adequate preventive health care (e.g. limited access to services, transportation, child care), appropriate printed breast cancer education materials will contribute to more effectively informing Hispanic women and ultimately contribute to a reduction of their breast cancer mortality rates.

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