

HAIR PROBLEMS, PHYSICAL CHARACTERISTICS AND GROOMING PRACTICES BASED ON ETHNICITY

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Background

Differences in product usage and attitudes toward hair care products are well documented. For instance, African American women tend to spend a greater percentage of their income on more hair care items than their Caucasian counterparts. However, the frequency of shampooing is much less and the use of straightening products is more prevalent. These are a few reasons why it is important to better understand ethnic segmentation in the hair care market. Are the differences in attitudes and product usage based on consumer perception or inherent differences in the hair? To answer that question it is essential to link practices and perceptions to scientific data.

Methods

To determine consumer perceptions of hair problems, a pilot study was conducted with 350 female participants from various ethnic backgrounds who were asked to list all of their hair problems. The list was compiled and used for a national internet-based survey that targeted four ethnic groups with over 1200 respondents. Among other things, they were asked to indicate all of their hair problems as well as their number one hair problem.

Our current sample pool consists of hair collected in Jamaica, US, Ghana, and Kenya. Geometrical and mechanical parameters were measured using a miniature tensile tester and laser scan micrometer. Over 1500 fibers from 300 subjects were studied to determine diameter, ellipticity, number of twists, and mechanical profile. Prior to testing all samples were screened by amino acid analysis to determine overall quality.

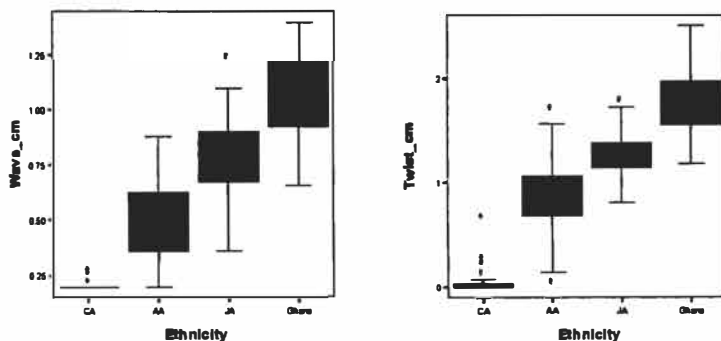
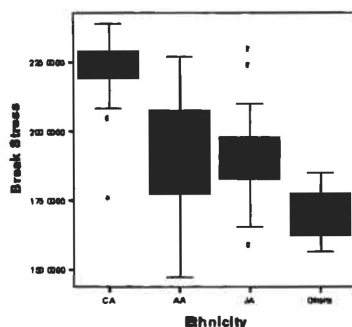
Results

The survey responses were grouped into four categories; Caucasian, Mexican, African American, and Chinese. Each category had a minimum of 300 responses and an age distribution ranging from 18 – 80 years old that was similar to the national census. The average number of hair problems reported was higher for African American and Mexican as compared to Caucasian and Chinese. Logistic regression analysis indicates that while many of the problems are common, certain problems were specific to each category (Table 1).

Table 1 Category Specific Hair Problems

<u>African American</u>	<u>Chinese</u>	<u>Caucasian</u>	<u>Mexican</u>
Breakage	Oily scalp	Gray	Too frizzy
Dry scalp		Too fine/thin	
Itchy scalp			

To adequately address the perceived problems one must ascertain if they are well-defined (hair breakage vs. fallout), scientifically routed, and can be objectively measured. Well-defined and measurable problems may be addressed with product offerings while others may be addressed with education. The use of consumer research, scientific testing and literature reviews can determine which approach to problem resolution is appropriate. For instance, hair breakage was a top concern for the African American respondents to the survey. This is consistent with basic knowledge that already exists indicating the relative fragility of hair from people of African descent compared with other ethnicities (1-3). Recent studies on hair from people of African descent in our lab suggest that there are also differences based on the geographical area from which the hair is collected.

Figure 1 a & b Number of Twist and Waves by Ethnicity**Figure 2 Break Stress by Ethnicity**

Figures 1 a & b show that there are statistically significant differences ($p > 0.05$) for the number of twist and waves based on ethnicity. Figure 2 illustrates that the break stress is equivalent for African American and Jamaican hair but different from Caucasian and Ghanaian hair. The physical characteristics that may play a role in hair fragility and thus the perception of breakage include twists, kinks, cracks and other local fiber asymmetries often found in hair fibers from people of African descent. The number of waves and twists not only differ when compared as a group vs. Caucasian hair, but also vary within the group. In fact, the hair from Ghana, which had the highest prevalence of twists and waves, was determined to be of the lowest mechanical integrity.

Conclusion

Based on a survey of more than 1200 women, differences in the perceived hair problems appear to be related to ethnic background. There were more specific number one problems perceived by African American women responding compared to the other groups. There may be a correlation between the problems and the use or misuse of chemical treatments but our data suggest that inherent differences must also be considered. Mechanical and geometrical tests indicate that the hair from people of African descent is more fragile and that fragility may be related to inherent physical differences.

References

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