



An Exploratory Study on Use of Sun Protective Apparel for Children: Parental Knowledge, Attitudes, Role Identity, and Purchase Intentions

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Introduction and Purpose. Researchers have found that approximately 80% of an individual's total lifetime sun exposure occurs during childhood (Preston & Stern, 1992). Outdoor activities, such as swimming and water play, put children at an increased risk for overexposure, the leading cause of skin cancers, but this is preventable with proper sun protection (Glanz & Mayer, 2005; Moehrle, 2008). Sunburns are the result of sun overexposure. Sun protective apparel is the most effective form of sun protection, yet 16% or less (14 – 45 years of age) actually wear protective clothing (Center for Disease Control, 2017; Koch, Pettigrew, Strickland, Slevin, & Minto, 2017). Parental involvement in educating their children on sun protection along with enforcing its usage has shown to instill positive behaviors, which can be carried into adulthood (Dadlani & Orlow, 2008). Researchers have found that parental attitudes can predict a child's sunscreen usage; however, there is no literature on parents' role in encouraging the usage of sun protective apparel among children (Dadlani & Orlow, 2008; Martin, Jacobsen, Lucas, Branch, & Ferron, 1999; Thomson, White, & Hamilton, 2012). To address this important research gap, this exploratory study had a three-fold purpose: 1) to descriptively explore parents' sun protective apparel knowledge, frequency of child overexposures, types of sun protection used, awareness of sun protective apparel, and attitudes toward sun protective apparel; 2) to investigate the effect of parental role identity salience (high/low) on compliance in usage of sun protective apparel for child(ren); and 3) to examine the effects of child's level of sun sensitivity (low/moderate/high) on parents' purchase intentions for sun protective apparel.

Literature Review and Hypotheses. Role identities are dependent on social structure for meanings and expectations; the more congruent the role expectations, the higher the identity salience (Stryker, 2000). High parental salience roles have been found to be as a contributing factor to children having better sun-related behaviors (Dadlani & Orlow, 2008; O'Riordan, Geller, Brooks, Zhang, & Miller, 2003; Thomson et al., 2012). It is hypothesized, (H₁) the higher a parent's role identity saliency, the higher a parent's intentions to use sun protection apparel on the child(ren). Additionally, researchers stated that knowledge of a child's sun skin sensitivity increases a parents usage of sun protection on their children (Dadlani & Orlow, 2008; O'Riordan et al., 2003). It is hypothesized, (H₂) the higher a child's sun skin sensitivity, the higher a parent's purchase intentions for children sun protection apparel.

Method and Results. An online questionnaire was utilized with established, reliable measures with a 7-point agree scale. A national marketing agency was used to recruit participants, age 19 years or older, have or be caring for a child under 19 years of age that plays

or swims in the water, and resides in the United States. Face validity of the instrument was determined with three parents and the marketing agency. A total of 174 usable questionnaires was collected. The sample included 94 males (54.0%) and 80 females (46.0%), representing 43 different states, with an age range from 19 to 59 years. Most were parents (94.2%), married (66.1%), Caucasian (72.4%) and had a high school education (43.7%). The children included 97 males (55.7%), 69 females (39.7%), and 8 preferred to not state a gender (4.6%), with a mean age of 8 ½ years of age. Participants reported children swam or played in the water an average of 3 hours 36 minutes during the week and 3 hours and 44 minutes on the weekends.

Scales revealed good reliability; Attitude scale had Cronbach's alpha of .93 (Thomson et al., 2012), compliance scale had Cronbach's alpha of .94 (Armitage & Conner, 1999), parental role identity has Cronbach's alpha of .92 (Reed, Jones, Walker, & Hoover-Dempsey, 2000), and purchase intentions had Cronbach's alpha of .94 (Hwang, Chung, & Sanders, 2016). More than half of the participants (54%) reported the child experienced 1-2 sunburns in the last 12 months. When asked if participants knew sun protective apparel was the best type of sun prevention, 55% were not aware and 53% of these participants stated this knowledge did change their feelings about using sun protective apparel in the future. Descriptive statistics revealed the types of sun protection used on children by the participants were sunscreen (32.3% of the time), followed by shorts (18.5%), sun glasses (15.2%), short sleeve shirts (15.0%), long sleeve shirts (6.1%), wide brimmed hat (5.7%), pants (5.1%), and shirt (2.0%). Additionally, participants' attitudes, based on a 7-point scale, toward the child wearing sun protective apparel was good ($M = 6.51$, $SD = .94$), favorable ($M = 6.40$, $SD = .98$), beneficial ($M = 6.32$, $SD = 1.21$), wise ($M = 6.31$, $SD = 1.26$), and necessary ($M = 6.14$, $SD = 1.30$). To investigate the effect of parental role identity salience on compliance in usage of sun protective apparel ($H1$), a median split was used to categorize parents into low and high salience groups. Independent samples t -tests revealed a statistically significant difference in compliance for high parental role identity salience ($M = 6.20$, $SD = 1.08$) vs. low parental role salience ($M = 5.17$, $SD = 1.25$; $t(172) = -5.54$, $p < .001$, two-tailed). High role identity salience parents were more likely to make their child comply with wearing sun protective apparel than low salience parents; thus supporting $H1$. To test $H2$, a one-way between-groups ANOVA was conducted to explore the effect of a child's sun sensitivity level (low/moderate/high) on participants' purchase intentions for sun protective apparel. Participants' children were divided into three sun sensitivity groups according to the child's sun sensitivity rating (low: rarely or almost never sunburns; moderate: sunburns sometimes or little; and high: sunburns easily or usually sunburns) (Mermelstein & Riesenber, 1992). The child's sun sensitivity level was found to have a significant effect on parents' purchase intentions for sun protective apparel [$F(2, 171) = 8.246$, $p < .001$]. Post-hoc comparisons using Tukey HSD test indicated that purchase intentions for sun protective apparel were significantly lower ($p = .05$) among parents of children with low sun sensitivity ($M = 5.20$, $SD = 1.22$) as compared to parents of children with high sun sensitivity ($M = 6.05$, $SD = 0.90$). Purchase intentions of parents of children with moderate sun sensitivity ($M = 5.46$, $SD = 1.19$) did not differ significantly from either low or high groups.

Conclusions and Implications. The descriptive results of the present study revealed that a majority of children are still experiencing sun overexposure and a majority of parents are not aware that sun protective apparel is the best form of sun protection. Participants had favorable attitude towards sun protective apparel, and yet a third of the participants relied on sunscreen for sun protection, followed by other types of sun protective apparel. Participants with high parental role identity salience were more likely to make their child comply with wearing sun protective apparel than parents with low salience. This indicates that additional education of the benefits of sun protective apparel can increase overall usage in caregivers with high parental role identity salience. Additionally, parents of children with high sun sensitivity are more likely to purchase sun protective apparel compared to parents of children with low sun sensitivity. Findings from this study could be used increase awareness of the benefits of sun protective apparel in children through education, marketing, and apparel labelling. Increased usage of sun protective apparel in childhood can ultimately decrease sun overexposure and lead to a decreased risk of skin cancer later in life. Further studies should look at the parental perceived deterrents (e.g. affordability, availability) of sun protective apparel and the parents' level of satisfaction with the functionality of available sun protective apparel for children.

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