Executive Summary: False Narratives in Female Adolescent Skincare

Elizabeth M. Money

College of Nursing, East Carolina University

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Main Points

- "Skincare" is associated with words such as sunscreen, lotion, moisturizer, and self-care, and "Skincare and Social Media" is associated with words such as influencer, trendy, and engaging.
- All participants agreed that sun exposure without sun protection can cause skin cancer; however, not all participants were consistent with sun-protective behaviors.
- Participants did not trust products and routines advertised on social media; however, most still purchased products or followed routines touted as effective.
- Following the educational series, there was an increase in participants' intent to utilize sun-protective behavior.
- Post-intervention, all participants either disagreed or strongly disagreed that tan skin is healthy, which evidence asserts can positively impact the use of sun-protective behaviors.
- The study showed mixed results in participants' self-appraised ability to effectively evaluate digital health resources and discern high from low-quality digital health resources post-implementation.

Background and Purpose

Within the past few years, complicated, expensive, potentially harmful, and unnecessary skin care products and routines have become increasingly popular among adolescent females due to the influence of social media and digital advertising. Sun-protective behaviors in childhood and adolescence are paramount to reducing the lifetime risk of skin cancer due to Ultraviolet radiation (UVR) exposure; however, this message is no longer prevailing (Lergenmuller et al., 2022). Social media and social media influencers (SMIs) target adolescent females with

messages and advertisements to purchase or take part in expensive, unnecessary, and potentially harmful skin products and routines that can disrupt the skin barrier (Block, 2024). According to the American Academy of Dermatology Association (AADA), adolescents are uniquely vulnerable to advertising and marketing strategies because of undeveloped critical thinking skills and decreased impulse control (Radesky et al., 2020). Intervention within this population is critical to re-prioritize an age-appropriate skincare routine emphasizing healthy skin and skin cancer prevention and eliminating harm from exposure to digital health misinformation.

This project attempted to determine if an educational series, using an interactive and age-appropriate format both in person and virtual, increases the intent to use sun-protective behavior, increases the ability to identify misinformation in advertising and posts on social media platforms, and decreases the intent to use of inappropriate skin care products and routines in adolescents who identify as female.

Methodology

This quality improvement project utilized a pre-and post-test quasi-experimental mixed methods non-control design consisting of five interventions over 12 weeks. The main topics discussed included sun-protective behaviors, Fitzpatrick skin type, e-health literacy, social media influence, and an age-appropriate skincare routine. The initial intervention was conducted in person, and subsequent sessions were held remotely using Microsoft Teams®. A convenience sampling procedure was employed with a large youth group at a community church. The target population consisted of adolescents who identified as female between the ages of 12 and 18 and were enrolled in middle or high school, grades 6th through 12th. Qualitative and quantitative data were collected before and after the final intervention using Microsoft Forms® and consisted of primarily Likert-style questions. The data was stored in Microsoft Excel® and then transferred to

Minitab® V22 for statistical analysis. A paired T-test was conducted to compare the participants' pre- and post-survey responses to assess knowledge and behavioral change.

Results

Accounting for attrition, six participants completed both the pre-and post-survey, and these six were used for the final data analysis, bringing the final sample for behavior change analysis to six: n=6.

Qualitative Data

Words associated with "skincare" included sunscreen, face wash, and lotion; meanwhile, "Skincare and social media" garnered words such as influencers, fake, and trendy, and adjectives including engaging, fun, and entertaining. After examining this study's qualitative data, it is evident that social media has influenced this sample's perception of skincare. The qualitative data also establishes a potential knowledge gap between what is considered appropriate or guideline-based and what is portrayed as necessary by non-evidence-based sources such as social media.

Quantitative Data

All participants in the sample agreed that lack of sun protection could cause skin cancer; therefore, it was assumed the participants would also use sunscreen daily; however, this was not the case. This data revealed a discrepancy between knowledge and subsequent behavior, which, as Aygun and Musla (2021) acknowledge, aligns with current suboptimal adherence to sun-protective behaviors, which are even more prevalent in adolescents due to the increased likelihood of risky behaviors.

Tanned skin is often associated with being athletic, healthy, in shape, and thin; however, achieving tans through sun exposure is associated with skin cancer. With statistical significance, this project showed that it is possible to change the thought process that tanned skin is healthy.

Before the intervention, 50% stated "disagree" or "strongly disagree" that tanned skin is healthy, and post-survey, all participants echoed this response.

Although this sample mainly disagreed that expensive skincare products work better and did not indicate they must be safe, more than half of the pre-survey sample bought a skincare product because it was advertised on social media. This data highlights a disconnect between knowledge and behavior, which can be due to either developmental level or the powerful messages from social media that are widely known to influence behaviors.

Part of this series was dedicated to teaching specific strategies to assess readily available health-related online resources and content, and participants self-assessed their abilities both pre- and post-intervention. The results of this project highlighted that post-intervention, more participants agreed that they could evaluate health resources; however, participants did not indicate an increased ability to tell high from low-quality resources specifically. These mixed results are unsurprising as the questions were likely too broad and were conducted through self-assessment versus a performance-based assessment; however, an increase was expected.

Strengths and Limitations

Principal facilitators of the project that increased engagement included the informal and conversational tone of sessions, interactive format, giveaways of age-appropriate skincare products, and addressing participant-requested skincare-related topics and questions. Due to the lack of initial participation, attrition, and some data eliminated due to potential bias, a final sample size of six was utilized for pre-and post-behavior change analysis. A sample size of six (n=6) precludes the generalizability and most statistical significance of this study's findings to the collective population. The sample lacked diversity in race and geographics and was

conducted in a relatively affluent residential area with increased education and healthcare access, further limiting the generalizability of the findings.

Implications and Conclusions

Although this study may not have produced statistically significant and generalizable results, it does not eliminate or minimize the clinically significant findings obtained and implications for future practice. Increased compliance with sun-protective behaviors in adolescence can potentially decrease skin cancer rates in adulthood; therefore, providing education on an age-appropriate skincare routine that includes the daily use of sunscreen empowers adolescents to make safer choices, can improve health outcomes and assist this population from falling prey to disinformation. As evidenced by other research and this project, adolescents are accessing social media, and providers must be aware of the potential ramifications concerning adverse health outcomes due to misinformation. If similar interventions to this project were adopted on a larger scale, this vulnerable population could see less skin cancer morbidity, fewer adverse effects of products, less wasted money spent on inappropriate products, and improved e-health literacy ability. Skin cancer is also a considerable cost burden on the healthcare system and consumers (Kao et al., 2023). If there are potentially lower skin cancer morbidity rates, this may also lower healthcare costs for the consumer and the entire healthcare system. In conclusion, the goal is to provide access to more formative e-health literacy training, encourage adolescents to challenge social norms such as tanned skin as healthy, and increase sun-protective behaviors to empower this vulnerable population to make better health choices and avoid potential long-term morbidity.

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