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Influence of Social Cultural Capital and Marketing on Skin Whitening Products Use among Higher Education Female Students in the Northeast of Thailand

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Abstract

Introduction: There have been increasing trends of skin whitening products use globally. Social cultural capital has been identified as one of a significant determinants of skin whitening products use. However, there was no study on these issues in Thailand. Therefore, this study aimed to identify skin whitening products use situation and the association between social cultural capital, marketing, and skin whitening products use among female higher education students in the Northeast of Thailand.

Method and Materials: This cross-sectional study was conducted in the Northeast of Thailand among 1,143 female higher education students. Data was collected using a self-administered structured questionnaire. The Generalized Linear Mixed Model (GLMM) was used to identify the associations between social cultural capital, marketing and skin whitening products use when controlling other covariates.

Results: Most of the respondents ever used skin whitening products (84.95% : 95% CI: 82.88–87.03), of which 52.66% (95% CI: 49.77–55.57) were current users, and 17.41% (95% CI: 15.21–19.61) were inappropriate use. The social cultural capital factor that were associated with skin whitening products use were those who were not satisfied with skin colors (Adj. OR=3.48; 95% CI=2.18–5.55; p<0.001), had friends using skin whitening products (Adj. OR=2.63; 95% CI=1.71–4.04; p<0.001, had thin to normal figures (Adj. OR=2.53; 95% CI=1.54–4.15; p<0.001), and had family members using skin whitening products (Adj. OR=1.86; 95% CI=1.10–3.15; p=0.020), studied in humanities and social sciences (Adj. OR=2.07; 95% CI=1.25–3.45; p=0.005) and product marketing (Adj. OR=1.92; 95% CI=1.15–3.20; p=0.012). Moreover, other factors that were also associated with skin whitening products use were family monthly income.

Conclusion: Majority of the higher education female students were current skin whitening products users of which about one-sixth was inappropriate users. Both social cultural capital, marketing had influence on skin whitening products use.

Keywords: *Skin whitening, Social cultural capital, Marketing, Female students.*

Introduction

Skin whitening products use is an ancient and widespread practice in many cultures[(1)], and is one of the most popular products of the global beauty industry, particularly in Asia. Marketing forecasters predict the business will be worth about USD 31.2 billion by 2024[(2)]. In several Asian countries, particularly India, Japan, Korea, China, and Thailand, women face pressure to lighten their skin due to the social perception that light skin is considered to be a cultural marker of beauty, class, and wealth, and has been reflective of high social status for many decades[(3-4)]. The social cultural capital refers to social, political, economic, cultural assets, and imperceptible health resources[(5-6)],

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with a growing recognition of the socioeconomic status and social determinants of health[7]. It has been described as a feature of trust, norms, networks, skill, cultural knowledge, and education that can improve the efficiency of society by facilitating coordinated actions[8]. In addition, previous studies reported that the advertising industry has recently created a market on notions of beauty, and enhance social cultural capital for the improvement in confidence and career prospects through the use of products advertised to promote white skin[9].

However, skin whitening products frequently contain toxic ingredients that are directly associated with adverse health and skin problems [10]. A study on the use of skin whitening products among university students indicated that 70.7% of females reported using skin whitening products [11] of which their use was associated with adverse skin effects, lack of personal control, risky sexual behaviors, and low social support [12]. In Thailand, as well as the Northeast region, the country biggest region both in term of land areas and population, there are still lack of research specifically concerned with social cultural capital, skin whitening products use, and their relationship to female higher education students.

Hence, this study aimed to describe skin whitening products use situation and to identify the association between social cultural capital, marketing, and skin whitening products use among female higher education students in the Northeast of Thailand. The findings of this study will provide evidence for health, education and relevant sectors to formulate appropriate measures to improve inequalities in health and reduce the use of skin whitening products.

Method

This cross-sectional analytical study was conducted between March to July 2019. The population were female higher education students in the Northeast of Thailand. The inclusion criteria were female higher education students aged 18 years old and older, currently studying for a bachelor's degree in universities of the Northeast of Thailand, able to verbally communicate, and agreed to participate in the study with written informed consent. The sample size was calculated by using the formula to estimate the sample size for a logistic regression analysis of Hsieh [13]. The estimated sample size was 1,143. We recruited students from 18 universities of the Northeast by using a multi-stage random sampling method. The sampling frame was all 18 universities in the Northeast of Thailand. The first stage was a random selection of 4 universities, followed by randomly selecting 3 fields from each university. Then, one faculty from each field was randomly selected. Therefore, a total of 12 faculties were included in the study. Simple random sampling was applied to select participants proportional to the size of the estimated total samples. A total number of 1,143 individuals were chosen to participate in this study.

Research Tools: A structured questionnaire was developed based on the research questions and relevant literatures. The structured questionnaire consisted of 4 parts including: 1) Demographic and socioeconomic: age, university level, field of study, residence, allowance, family monthly income, adequacy of expense, and family members. 2) Skin whitening products use included; Have you ever used skin whitening products in your lifetime? Do you currently use skin whitening products? Inappropriate use was assessed by using a list of dangerous cosmetics from the FDA (Food and Drug Administration, Ministry of Public Health, Thailand), defined as those who reported any use of dangerous cosmetics. 3) Social cultural capital included; satisfied with skin color, have a friend using skin whitening products, have any family members using skin whitening products, Figures were assessed by using BMI (Body Mass Index). The scores were categorized into four groups according to the WHO (World Health Organization) [14] for Asian-Pacific cutoff points, as follows: Underweight (<18.5 kg/m^2), Normal (18.5–22.9 kg/m^2), Overweight (23–24.9 kg/m^2), and Obese (≥25 kg/m^2). Finally, the scores were dichotomized as thin/normal (<23) and overweight/obesity (≥23). 4) Marketing: Product, Price, Place, and Promotion. Using the 5 scores (Very Low, Low, Moderate, High, Very high). After summing up the total marks, according to Best's theory, the scores were categorized into 3 groups (Low, Moderate, High). Finally, the scores were dichotomized as low/moderate (<3.68) and high (≥3.68) by using the mean as the cutoff point.

The questionnaire was undergone content validation by 5 experts and was revised to improve its validity. The Cronbach's alpha coefficient of social cultural capital was 0.80, marketing was 0.87. A self-administer questionnaire was used for data collection. The researcher responded to possible questions raised by the respondents, and assisted them when necessary. The completed questionnaires of each student were placed

into an individual envelope, sealed, and put into a box. Confidentiality of all data was fully assured.

Data Analysis: The data was analysed using STATA® (ver. 13; College Station, TX, USA: Stata Corp). Frequency and percentage were presented to describe the categorical variables. Continuous variables were described as mean and standard deviation, median and range. The generalized linear mixed model (GLMM) was performed to model the random effects and correlations within clusters. In the modelling, the universities were set as random effects. Bivariate analysis was used to determine the association of each independent variable with skin whitening products use. The variable that had p-value<0.25 were proceeded to multivariable analysis, of which the backward elimination method was used for model fitting. The final model results were presented as adjusted Odds Ratio (Adj. OR), 95% CI, with the levels of significance of 0.05.

Results

The average age of female higher education students was 20.67 ± 1.25 years old. Almost equal proportion of students were form each 4 universities (about 25%) and were from freshman (24.06%), sophomore (24.41%), junior (27.91) and senior: 23.62%. Majority of the student lived in private accommodation. Their median family monthly income was USD 940 with the ranged of USD 163 to USD 6,528. Nearly half of the respondents had adequate financial support but were unable to save any money. Most of respondents (84.51%) had thin and normal figure, and had friends (71.22%) using skin whitening products. Almost one-third had family members using skin whitening products and were not satisfied with their skin colors. Majority of respondents (53.81%) perceived a moderate level of overall marketing strategies and about 60% perceived a high level of product marketing.

Most of the respondents used skin whitening products (84.95%), 52.66% were current use and 17.41% were inappropriate use.

Table 1: Number and percentage of skin whitening products use among female higher education students in the Northeast of Thailand (n = 1,143)

Characteristics	Number	Percent	95% CI
Use of Skin Whitening Products			
Never	172	15.05	13.09 – 17.24
Ever	971	84.95	82.76 – 86.91
Current Use			
No	541	47.34	44.44 – 50.24
Yes	602	52.66	49.76 – 55.56
Inappropriate Use			
No	944	82.59	80.28 – 84.68
Yes	199	17.41	15.32 – 19.72

The bivariate analysis indicated that social cultural capital factor including satisfied with skin colors, had friends using skin whitening products, figures, had family members using skin whitening products, and field of study, product marketing and marketing on place, age, family members, family monthly income, and allowance might associated with skin whitening products use (p-value <0.25). These variable were proceeded to the multiple variable analysis using GLMM. The results indicated that satisfied with skin colors (adj. OR=3.48: 95% CI; 2.18-5.55), had friends using skin whitening products (adj. OR= 2.63: 95% CI; 1.71- 4.04), were thin-normal (adj. OR= 2.53: 95% CI; 1.54- 4.15), studied in the field of humanities and social sciences (adj. OR= 2.07: 95% CI; 1.25- 3.45), had product marketing level (adj. OR= 1.92: 95% CI; 1.15- 3.20), and had monthly family income ≥ 980 USD (adj. OR= 2.13: 95% CI; 1.41- 3.20)

Table 2. Factors Associated with Skin Whitening Products Use among Female Higher Education Students: A multivariable analysis (n = 1,143)

Characteristics	N	% of Use	OR	AdjOR	95% CI	p-value
Satisfied with skin colors						**<0.001**
Yes	618	81.42	1	1		
No	353	91.93	2.60	3.48	2.18 –5.55	
Had friends using skin whitening products						**<0.001**
No	226	68.69	1	1		
Yes	745	91.52	4.92	2.63	1.71 – 4.04	

Characteristics	N	% of Use	OR	AdjOR	95% CI	p-value
Had family members using skin whitening products						**0.020**
No	591	80.19	1	1		
Yes	380	93.60	3.61	1.86	1.10 – 3.15	
Figures						<0.001
Overweight-obesity	136	76.84	1	1		
Thin-normal	835	86.44	1.92	2.53	1.54 – 4.15	
Field of study						0.005
Sciences and Technology/Health						
Sciences	278	82.74	1	1		
Humanities and Social						
Sciences	693	85.87	1.27	2.07	1.25 – 3.45	
Product marketing						0.012
Low-moderate	380	81.02	1	1		
High	591	87.69	1.67	1.92	1.15 – 3.20	
Family monthly income						<0.001
< 980 USD	464	80.70	1	1		
≥ 980 USD	507	89.26	1.99	2.13	1.41 – 3.20	

Discussion

Skin whitening products use among female higher education students was 84.95%. This finding is consistent with previous studies reporting a high prevalence of skin whitening products use [1,15]. However, this was inconsistent with a study among African women, observed only 60% the respondents using skin whitening products [16]. Our study observed that 52.66% of students were current users, which was higher than the 37.60% found in India. It probably due to the greater range of ages (16-60 years) as well as the cultural setting of the study [17]. About one sixth were using the products inappropriately, a little lower than 46.7% of teenage females reported using harmful cosmetics [18].

The multivariable analysis of this study confirmed that social cultural capital was significantly associated with skin whitening products use. Regarding social cultural capital and satisfaction with skin colors, students who were dissatisfied with their skin colors were 3.48 times more likely to use skin whitening products. This finding was consistent with a previous study [15]. Social and cultural notions connected females using skin whitening products[15]. The presence of social cultural capital among university students was associated with their entire health and individual life [19]. Shroff, H et al suggested enhanced social cultural capital for prevention of use among women[17]. Students who had friends using skin whitening products were 2.63 times more likely to use skin whitening products as well as having family members using skin whitening products were 1.86 times more likely to use them. It might be that both peers and families could have direct communication with the students that could have influence on their behaviors. These findings were consistent with another study [20]. Students with thin to normal figures were 2.53 times more likely to use skin whitening products compared to those in the overweight and obese group. This was in similar with the study in India [17], but inconsistent with the study in Sudan [15]. This might be due to the body image and beauty concerns of female students engaged in weight control. Students who studied in humanities and social sciences were 2.07 times more likely to use skin whitening products than students who studied science and technology. The finding was also consistent with another study [21]. Students with a high level of product marketing were 1.92 times more likely to use skin whitening products, which was similar with a study in United Arab Emirates [22]. Students with family monthly income ≥ USD 980 were 2.13 times more likely to use skin whitening products. This was also similar with a study conducted in Southeast Asia [19]. It might be that they had money to spend on nonessential items.

Conclusion

As high as 84.95% of the higher education female students ever used skin whitening products of which more than half were current skin whitening products

users. About one-sixth was inappropriate users. Both social cultural capital, marketing had influence on skin whitening products use.

Limitation of the Study: Since this is a cross-sectional study, it could not identify the causal relationship between independent variables with skin whitening products use.

Conflicts of Interest: The authors declare no conflicts of interest.

Ethics Clearance: After explaining the study objective, written informed consent was taken from all the participated in the study. Confidentiality of the data was fully assured. The Khon Kaen University Ethics Committee in Human Research approved the exemption for ethical approval of this study (reference no. HE 612343).

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