Original Article

Knowledge, Attitude, and Practices of Bikers on Ultraviolet Index in Relation to Sun Protection: Development of a Validated Questionnaire and Cross-sectional Study

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Abstract

Background: Skin cancer is the most common cancer in fair-skinned populations. Ultraviolet (UV) radiation exposure is the most common and important modifiable risk factor. It is the target of most prevention strategies for cutaneous malignancies. Currently, data on knowledge, attitude, and practices (KAPs) of bikers on UV index in relation to sun protection are unavailable.

Objectives: The objectives of this study were to develop a validated questionnaire, determine the demographic characteristics of bikers, and describe their KAPs on UV index in relation to sun protection.

Methodology: The study was conducted among bikers at the outpatient department of a tertiary hospital, through a self-administered questionnaire. Patients included were occupational and/or recreational bikers, aged 18 years old and above, belonging to both sexes, biking at least 15 min per day, who were able to understand written English or Filipino. Exclusion criteria included bikers who have skin cancer.

Results: One hundred and twenty-eight bikers were able to answer the validated questionnaire, with mostly male respondents, college graduates, with internet or social media as the source of information for knowledge on sun exposure and sun protection. One hundred and two of them know that forecasts of UV index from weather app on the phone are free and readily available. However, only 59 of them check the UV index regularly as a guide for sun protection.

Conclusion: Forecasts of UV index raise the awareness and alert the public to the need for sun protection to reduce skin cancer risk and modify health promotion and primary prevention strategies.

Keywords: Index, knowledge, attitude, practices, ultraviolet

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Introduction

Skin cancer is the most common cancer in fair-skinned populations. The most prevalent forms include the following: (1) basal cell carcinoma (BCC), (2) squamous cell carcinoma (SCC), and (3) cutaneous melanoma. Other

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types include Merkel cell carcinoma, dermatofibrosarcoma protuberans, and adnexal carcinomas, among others.[1]

BCC is the most common cancer in humans. It is estimated that more than three million new cases occur each year in the United States. The malignancy accounts for approximately 75% of all nonmelanoma skin cancers and almost 25% of all cancers diagnosed in the United States. Epidemiological data indicate that the overall incidence is increasing worldwide significantly by 3%–10% per year. SCC is the second most common skin cancer, after BCC, in immunocompetent white individuals, and the most common skin cancer in immunosuppressed organ transplantation recipients worldwide.[2]

The published data on Filipino patients in a tertiary hospital included 40 patients with histopathological diagnoses of malignant skin tumors in the University of the East Ramon Magsaysay Memorial Medical Center (UERMMMC). Among these, 22 (55%) patients had BCC, 17 (27.5%) SCC, and 7 (17.5%) had malignant melanoma (MM). BCC was more common in females, while SCC and MM had almost equal sex distribution. Most of the cases were diagnosed in the elderly age group. Predilection sites for BCC and SCC were on areas of greater sun exposure such as the nose and lids, and acral areas for MM. The profile of malignant skin tumors at UERMMMC approximated foreign studies.[3] From 2011 to 2023, data of the Philippine Dermatological Society Health Information System Task Force, a total of 4574 cases of skin cancer has been recorded, with female predominance and majority from 61 to 70 years old.

Review of related literature

Ultraviolet (UV) rays are a part of sunlight that is an invisible form of radiation. UV rays can penetrate and change the structure of skin cells. There are three types of UV rays: UV A (UVA), UV B (UVB), and UV C (UVC). UVA is the most abundant source of solar radiation at the earth's surface and penetrates beyond the top layer of human skin. Scientists believe that UVA radiation can cause damage to connective tissue and increase a person's risk for developing skin cancer. UVB rays penetrate less deeply into skin but can still cause some forms of skin cancer. Natural UVC rays do not pose a risk to workers because they are absorbed by the Earth's atmosphere.[4]

Exposure to UV radiation, both UVB and UVA, has been recognized as the most important environmental risk factor for the development of SCC with a strong dose-response association, as suggested by the preferential localization of actinic keratosis and SCC on sun-exposed and chronically photodamaged sites and in sun-sensitive phenotypes such as patients with fair complexions, with increasing age and high cumulative UV irradiation.[2]

The UV exposure measurement of cyclists or bikers is between 0.2 minimal erythema dose (MED) and 17.2 MED.[5] The mean daily personal exposure was 8.1 MED.[5] The personal exposure level determined exceeded exposure limits by more than 30 times,[5] which highlights the increase of risk of skin cancer in this population. There are 38,932 cyclists in the National Capital Region. In terms of location, the largest number was recorded in Quezon City (16,709), followed by Pasig (11,159), Marikina (6,778), and San Juan (4,286), respectively,[6] which makes this population an appropriate and convenient study of interest.

In the study by Moehrle *et al*. in 2000, it was mentioned that for every 10 miles or 16 km you pedal equates to about an hour of sun exposure.[5] Cyclists who were training for the Tour de Suisse were exposed to sunshine levels of more than 30 times the recommended limit.[5] According to the information from the Centers for Disease Control and Prevention, the sun can damage unprotected skin in as little as 15 min,[7] and a history of sunburns can increase your risk of getting skin cancer.[8] In a study by Iannacone *et al*. in 2012, high levels of cumulative sunlight exposure were associated with BCC, and medium and high levels of cumulative sunlight exposure were significantly associated with SCC, compared to low levels in the early life.[9]

The US Preventive Services Task Force recommends that fair-skinned individuals aged 6 months–24 years and their parents should be counseled about minimizing UV radiation exposure. Fair-skinned adults aged 24 years should be counseled based on risk factors such as phenotype, family history, indoor tanning, sunburn, skin cancer history, multiple nevi or atypical nevi, HIV, and organ transplant recipient.[2]

The Food and Drug Administration regulates sunscreens as an over-the-counter drug in the United States. Labels should include sun protection factor (SPF), coverage spectrum, cancer/aging warnings if they do not satisfy broad-spectrum tests/SPF 15+, water resistance or duration, encouragement for regular use or liberal application to exposed areas 15 min before sun exposure, reapplication instructions, storage recommendations, and expiration dates.[1] Photoprotection measures must be more emphasized during the peak UVB hours of 10:00 am to 2:00 pm.[2]

There are significant opportunities for health promotion and primary prevention of skin cancer. Although

multicomponent interventions may be the best option to create long-lasting behaviors of UV radiation protection, future research will determine the most efficient interventions to achieve long-lasting behavioral changes in all populations.[1]

The UV index was first developed in Canada in 1992 and adopted by the United States National Weather Service and Environmental Protection Agency as well as the World Meteorological Organization (WMO) and World Health Organization (WHO) in 1994. The UV index, a measure of the UV radiation levels at the Earth's surface, was published in 1995 as a result of a collaboration between the WMO, WHO, United Nations Environment Program, the International Commission on Nonionizing Radiation Protection, and the German Federal Office for Radiation Protection. The UV index was intended to raise the awareness and alert the public to the need for sun protection to reduce skin cancer risk. The values of the UV index range from 1 to 11+ and are associated with varying recommendations for sun protection. For example, at a UV index value of 3, the sun protection recommended is seeking shade during midday, increasing clothing coverage, sunscreen and hat use, while at a UV index value of 8, extra sun protection is recommended, which includes avoiding being outdoors during midday and adding greater emphasis on sun protection.[8]

UV index values are determined from the measurements made by ground-based spectrometers, broad-band filter radiometers, and multifilter radiometers. Radiative transfer models are used to estimate UV index values from other types of geophysical observations, primarily column ozone and cloud thickness. UV index values can also be retrieved from satellite measurements of atmospheric ozone and cloud cover. Forecasts of UV index values are now widely available and are intended to be used by the public as a guide to avoid excessive exposure to UV radiation.[4] Whether it's from your local news channel or the weather app on your phone, information about the UV index forecast is available at your fingertips. The forecast is useful as a guide to certain choices, such as whether to apply sunscreen, or wear a pair of sunglasses when going out.

Sunprotective behavior includes avoiding intense sun when possible and seeking shade to reduce the risk of sunburn, wearing sun-protective clothing such as long sleeve shirt, long pants, wide brim hat, and sunglasses. Broad spectrum sunscreen protects against UVA and B with a SPF of 15 or higher should be used in combination with other sun-protective behaviors and applied appropriately using a proper amount applied prior to sun exposure and with timely reapplication.[10]

Currently, data on knowledge, attitude, and practices (KAPs) of bikers on UV index in relation to sun protection are unavailable. The objectives of this study are to develop a validated questionnaire, determine the demographic characteristics of bikers, and describe their KAP on UV index in relation to sun protection.

Significance of the study

The information obtained from the patients' participation will be invaluable in the development of a validated questionnaire on the KAPs of bikers on UV index in relation to sun protection. This endpoint can subsequently lead to an analytical, cross-sectional study on the KAPs of bikers on UV index in relation to sun protection, and the data can be used for health promotion and primary prevention strategies for skin cancer.

Results of this study will impact the community in future endeavors such as using UV index to raise the awareness and alert the public to the need for sun protection to reduce skin cancer risk and modify health promotion and primary prevention strategies.

Main objective

This study aims to develop a validated questionnaire on the KAPs of bikers on UV index in relation to sun protection at the outpatient department of University of Santo Tomas Hospital, Department of Dermatology.

Specific objectives

The specific objectives of this study are to (1) describe the demographic characteristics of Filipino bikers, (2) determine the knowledge of bikers on UV index in relation to sun protection, (3) determine the attitude of bikers on UV index in relation to sun protection, and (4) determine the practices of bikers on UV index in relation to sun protection.

Methodology

Research design

This is a single-center, questionnaire-based, cross-sectional, descriptive, and analytical study of adult bikers seen at the outpatient department of University of Santo Tomas Hospital, Department of Dermatology, from April to July 2024.

The study consisted of two phases. The first phase was the validation of questionnaire. The second phase was the deployment of the validated questionnaire at the outpatient department.

Development and validation of questionnaire

A self-administered questionnaire was formulated by the investigators based on the objectives of the study. Content validity was assessed subjectively by expert dermatologists based on definition accuracy and context and was deemed appropriate. Questionnaire translation was both from English language to Filipino language and in the reverse direction ("forward and backward" translation). This was done by an English professor and a Doctor of Philosophy in Filipino education.

Readability and understandability of the questions were determined through a pilot study conducted on 20 UV index experts. The internal consistency of the tool was tested using Cronbach's alpha, a reliability testing measure for questions with values above 0.7 considered acceptable. Items included were KAPs of bikers on UV index in relation to sun protection. Cronbach's alpha scores were the following: 0.8700 (English Questionnaire: Knowledge), 0.9125 (English: Attitude), 0.9260 (English: Practice), 0.9123 (Filipino: Kaalaman), 0.9312 (Filipino: Saloobin), and 0.7312 (Filipino: Gawi), which indicates that the items provide a good measure of the aspect examined, supporting the validity and reliability of the questionnaire.

Evaluation of outcome

The questionnaire consisted of three parts, with a total of 18 questions.

Demographic profile

The independent variables measured included age, sex, educational attainment, skin type, personal and family history of skin cancer, source of information for knowledge on sun exposure and sun protection, biking time period, biking duration per day, biking frequency, and biking duration in years.

Knowledge domain

Respondents were asked to answer seven statements with a yes or no.

A positive response was defined as an answer of "yes," while a negative response was defined as an answer of "no."

Attitude domain

Respondents were asked to answer seven statements with a yes or no.

A positive attitude was defined as an answer of "yes," while a negative attitude was defined as an answer of "no."

Practice domain

Respondents were asked to answer four statements with a yes or no.

A positive practice was defined as an answer of "yes," while a negative practice was defined as an answer of "no."

Patient selection and recruitment

Patients included were occupational and/or recreational bikers, aged 18 years old and above, belonging to both sexes, biking at least 15 min per day, who were able to understand written English or Filipino. Exclusion criteria included bikers who have skin cancer and those who refused or unable to consent.

Sample size and sampling method

A total of 20 UV index experts from PAGASA Climatology and Agrometeorology Division validated the questionnaire. Ten for validation of the English questionnaire, another 10 for validation of the Filipino questionnaire. After the validation, at least 69 bikers answered the validated questionnaire. The sample size was based on 0.4185 correlation coefficient of Traffic Enforcer's Knowledge and Practice scores toward sun exposure and sun protection.[11] This computation also accounted for 5% level of significance and 95% power.

Convenience sampling was done by distributing the study questionnaires and informed consent forms during the researcher's most convenient time while at the outpatient department. Recruitment was done among the bikers present, with the targeted sample size obtained from April to July 2024. A total of 128 respondents completed the study and were included in the analysis.

Statistical analysis

Descriptive statistics were used to summarize the demographic and clinical characteristics of the patients. Frequency and proportion were used for the categorical variables, median and inter quartile range for nonnormally distributed continuous variables and mean and standard deviation for normally distributed continuous variables. Shapiro–Wilk test was used to test the normality of the continuous variables. Missing values were neither replaced nor estimated. Microsoft Excel and STATA 13.1 were used for data management and analysis, respectively, of Microsoft Corporation, Texas, USA.

Ethical considerations

This study was investigator-initiated and was approved by the Research Ethics Committee of the tertiary hospital.

Results

Demographic profile

Table 1 summarizes the demographic profiles of the respondents. A total of 128 patients completed the study. Of these, mean age was 35 (34.96 ± 11.10), majority were males (89.06%), college graduates (57.81%), skin type IV (59.38%), with internet or social media as source of information for knowledge on sun exposure and sun protection (57.03%), with biking time period of five to nine in the morning (64.84%), more than 15 min per day (84.3%), and biking duration of 5 years (3–10, interquartile range of 25th–75th percentile).

Table 2 summarizes the KAPs of the respondents.

Knowledge

Majority of the respondents know that the UV index is a measure of the UV radiation levels at the Earth's surface (91.41%), UV index is intended to raise the awareness and alert the public to the need for sun protection to reduce skin cancer risk (91.41%), UV index ranges from 1 to 11+ and is associated with varying recommendations for sun protection (89.06%), sun protection is recommended at a UV index of 3 (82.03%), extra sun protection is recommended at a UV index value of 8 (90.63%), forecasts of UV index are now widely available and are intended to be used by the public as a guide to avoid excessive exposure to UV radiation (87.5%), and forecasts of UV index from the weather app on the phone are free and readily available (79.69%).

Table 1: Demographic profile (*n*=128)

	Frequency (%); mean±SD; median (IQR)
Age (years)	34.96±11.10
Sex	
Male	114 (89.06)
Female	14 (10.94)
Educational attainment	
Elementary	2 (1.56)
High school	31 (24.22)
College	74 (57.81)
Postgraduate	21 (16.41)
Skin type	
Type I	5 (3.91)
Type II	3 (2.34)
Type III	18 (14.06)
Type IV	76 (59.38)
Type V	25 (19.53)
Type VI	1 (0.78)
Personal and family history of skin cancer	
None	128 (100)
Source of information for knowledge on sun exposure and sun protection	
None	35 (27.34)
Internet/social media	73 (57.03)
Books/formal education	8 (6.25)
Medical professional	4 (3.13)
Others	8 (6.25)
Biking time period	
5 am–9 am	83 (64.84)
10 am–2 pm	25 (19.53)
3 pm–7 pm	20 (15.63)
Biking duration per day (min)	
15	20 (15.63)
More than 15	108 (84.3)
Biking frequency	
Everyday	128 (100)
Biking duration, years	5 (3–10)

SD: Standard deviation, IQR: Interquartile range

Attitude

Majority of the respondents believe that the UV index is a good measure of the UV radiation levels at the Earth's surface (96.88%), UV index can raise the awareness and alert the public to the need for sun protection to reduce skin cancer risk (97.66%), the higher the UV index the greater the need for sun protection (96.09%), seeking shade during midday, increasing clothing coverage, using a hat and sunscreen are needed at a UV index of 3 (83.59%), staying indoors during midday, and reapplying sunscreen are needed at a UV index value of 8 and above (89.84%), forecasts of UV index are important to be used by the public as a guide to avoid excessive exposure to UV radiation (93.75%), and forecasts of UV index from the weather app on the phone is a practical and useful guide for sun protection (91.41%).

Practice

Majority of the respondents seek shade during midday, increase clothing coverage, use a hat and sunscreen when the UV index is 3 (71.88%), avoid being outdoors during midday, and reapply sunscreen when the UV index is 8 and above (74.22%). However, majority of them do not check the UV index regularly as a guide for sun protection (53.91%), and check the weather app of my phone regularly to know the UV Index (53.13%).

Discussion

To our knowledge, studies on KAP concerning sun exposure and sun protection were conducted on traffic enforcers,[11] laypersons,[12] health personnel,[12] and adult triathletes.[13] This is the first KAP study of Filipino bikers both as a recreational activity and outdoor worker, regarding using UV index for sun protection.

Most of the patients in our study (89.06%) are males similar to that observed in the study on Metro Manila bikers by Uy and Regidor (60%).[14] Comparing the age range of subjects in the study of Uy and Regidor, majority are within 21–35 years old (73%), while in our subjects, the median age is 34.96 ± 11.10. In both studies, majority of respondents attained a college education. Our results showed 27.34%

Table 2: Knowledge, attitude, and practice

	Frequency (%)	
	Yes	No
Knowledge		
1. The UV index is a measure of the UV radiation levels at the earth's surface	117 (91.41)	11 (8.59)
2. UV index is intended to raise awareness and alert the public to the need for sun protection to reduce skin cancer risk	117 (91.41)	11 (8.59)
3. UV index ranges from 1 to 11+ and is associated with varying recommendations for sun protection	114 (89.06)	14 (10.94)
4. Sun protection is recommended at a UV index of 3	105 (82.03)	23 (17.97)
5. Extra sun protection is recommended at a UV index value of 8	116 (90.63)	12 (9.38)
6. Forecasts of UV index are now widely available and are intended to be used by the public as a guide to avoid excessive exposure to UV radiation	112 (87.5)	16 (12.5)
7. Forecasts of UV index from the weather app on the phone are free and readily available	102 (79.69)	26 (20.31)
Attitude		
1. The UV index is a good measure of the UV radiation levels at the earth's surface	124 (96.88)	26 (20.31)
2. UV index can raise the awareness and alert the public to the need for sun protection to reduce skin cancer risk	125 (97.66)	3 (2.34)
3. The higher the UV index the greater the need for sun protection	123 (96.09)	5 (3.91)
4. Seeking shade during midday, increasing clothing coverage, using a hat and sunscreen are needed at a UV index of 3	107 (83.59)	21 (16.41)
5. Staying indoors during midday and reapplying sunscreen are needed at a UV index value of 8 and above	115 (89.84)	13 (10.16)
6. Forecasts of UV index are important to be used by the public as a guide to avoid excessive exposure to UV radiation	120 (93.75)	8 (6.25)
7. Forecasts of UV index from the weather app on the phone are a practical and useful guide for sun protection	117 (91.41)	11 (8.59)
Practice		
1. I check the UV index regularly as a guide for sun protection	59 (46.09)	69 (53.91)
2. I seek shade during midday, increase clothing coverage, use a hat and sunscreen when the UV index is 3	92 (71.88)	36 (28.13)
3. I avoid being outdoors during midday, and reapply sunscreen when the UV index is 8 and above	95 (74.22)	33 (25.78)
4. I check the weather app of my phone regularly to know the UV index	60 (46.88)	68 (53.13)

UV: Ultraviolet

of cyclists have no source of information for knowledge on sun exposure and sun protection. This highlights the need to increase the awareness and provide educational intervention in this population. As the main source of information for sun protection, 57.03% acquires their knowledge from the internet or social media more than literature and medical profession. Therefore, physicians and dermatologists may use the internet platform as an effective tool to communicate how to perform sun protection. Only 3.13% of the subjects learn from medical professionals, signifying an increased effort for the physicians in educating patients in their clinical practice during consultation aside from using social media as they are more credible sources than advertisements and influencers that are regularly more visible in the internet.

Majority of the bikers in our study, the biking time period was from five to nine in the morning (64.84%). Although less UVB intensity is seen during this time period, it can still cause significant skin damage even at decreased magnitude.[15] Close to 20% (19.53%) were exposed during the peak UVB hours of ten in the morning to two in the afternoon. This high UV radiation level is known to be hazardous, making these bikers vulnerable to skin cancer. Majority (84.3%) would bike more than 15 min a day, with an average duration of 5 years (3–10, interquartile range of 25th to 75th percentile). This subpopulation is considered as to having a high risk for cutaneous malignancies secondary to prolonged cumulative sun exposure from their biking behavior.[2]

In a study by Ngo and Rivera in 2021, knowledge of Filipino traffic enforcers on sun exposure and sun protection shows that most of the respondents knew that sun exposure can lead to skin darkening (92.7%), sunburn reactions (92.7%), and that the most dangerous exposure time is between ten in the morning to four in the afternoon (93.82%). Majority (60.67%) believed that sun exposure is only harmful if sunburn is present; sunscreen application is at least 20 min before sun exposure (71.91%), sunscreen prevents skin cancer (72.47%), and that one-time application is not enough for the entire day (72.47%).[11] In our study, a higher percentage (17.97%) of bikers did not know that sun protection is already recommended at a UV index of 3, as compared to that of the recommendation at a UV index of 8 (9.38%). This signifies that there is a proportion of subjects whose knowledge of a UV index of 3 is a safe level for them in spite that this is a moderate risk category for UV damage.[16] Therefore, awareness of sun protection measures even for lower indices (example UV index <8) must still be given importance to avoid excessive exposure to UV radiation. Strikingly, one-fifth of the respondents (20.31%) were not aware that forecasts of UV index is widely available intended to be used by the public as a guide for effective sun protection behavior, proving the significance of this study which emphasizes the utilization of UV index to address the prevention of cutaneous injury.

With regard to attitudes, 20.31% did not consider UV index as a good measure of the UV radiation levels, which

could be attributed to lack of knowledge, and awareness of the existence of UV index from social media in a group. Interestingly, 16.41% do not agree that seeking shade during midday, increasing clothing coverage, and using a hat and sunscreen are needed at a UV index of 3, depicting that some bikers in this study is unaware that protection is already warranted even at low indices.

Comparing with the study on traffic enforcers, attitudes on sun exposure and sun protection show that more than half agreed that sunscreen can be worn daily and not just on the beach (62.36%), that it is worth taking time to apply the sunscreen while working to avoid sun damage and skin cancer (62.36%), and that prolonged exposure may cause skin cancer (61.24%). However, only a few had the desired positive attitude that sunscreen is not an added expense and is practical to use (39.89%), and the desired negative attitude that the skin will age quickly and have wrinkles if they spend time in the sun (47.75%).[11] Attitudes of Filipino bikers on sun protection must be in line with knowledge about UV index because it is a stepwise approach and a comprehensible guide in translating sun protection practices.

Although majority (79.69%) of bikers in this study had excellent knowledge of UV indices being readily available, our results revealed that there is more than half (53.91%) who do not use UV index as a guide for sun protection. This translates to the lack of practice in using this tool as an objective guide to sun protection. Majority (71.88%) seek shade during midday, increase clothing coverage, use a hat and sunscreen when the UV index is 3. However, 28.13% do not practice this attitude. Some possible explanations to the nonpractice of using different forms of sun protection would be (1) lack of awareness, (2) poor information source, (3) unavailability of sun protection tools, and (4) unsuitability to execute the practices (example, increasing clothing coverage in a hot climate). Most bikers (74.22%) avoid being outdoors during midday, and reapply sunscreen at UV index >8. Remarkably, a quarter of the subjects (25.78%) avoid midday exposure and reapplication of sunscreen implicating the need to modify these poor sun protection practices for this population. Comparing with the study on traffic enforcers, practices on sun exposure and sun protection show that majority wore sunglasses (82.02%) while more than half wore a long-sleeved shirt or short-sleeved shirt with added arm sleeves and long pants (68.54%), a wide-brimmed hat (65.17%), and dark-colored clothing as protection (50.56%). The least common methods for sun protection included reapplying sunscreen every 3–4 h (32.02%), staying in the shade (43.26%), applying sunscreen at least 20 min before sun exposure (47.75%), and applying sunscreen of SPF ≥30 (48.31%).[11]

Finally, majority (53.13%) of them do not check the weather app of their phones regularly to know the UV index. As the UV index is easily obtainable from the internet, clearly, there is an unmet need to further educate and reinforce the employment of UV index forecasts among bikers. Some potential reasons for not checking could be the feeling of safety on a cloudy climate, the knowledge of early ride versus midday is harmless, lack of knowledge of the availability of UV index, distractions of being preoccupied by the immediate execution of work related tasks than being concerned about skin health.

The advantage for bikers of looking into the UV forecast measurement can translate into behaviors of understanding their risks and reevaluate their routine. Bikers can reconsider not going outside or practice more photoprotection habits if the UV index is high. Another advantage is by determining a safer time to bike, especially for individuals who are at high risk of developing skin damage, a family history of skin cancer or have higher skin types.

The outcome of this study has shown that majority of the subjects have adequate knowledge and awareness of the existence of UV index forecast. However, behavior for sun protective practices is still lacking in many of the respondents. Our study has proven that there is a discrepancy between these variables warranting education and social awareness of exercising the usage of UV indices. In doing so, this can be a key component for the primary prevention of skin damage in Filipino bikers.

Conclusion

In conclusion, this study showed that the developed questionnaire possessed acceptable to excellent validity to assess the KAPs of bikers on UV index in relation to sun protection. The participants have excellent knowledge and positive attitude; however, these do not translate well into practice. Forecasts of UV index raise awareness and alert the public to the need for sun protection to reduce skin cancer risk and modify health promotion and primary prevention strategies.

Limitations and recommendation

This study serves as an initial evaluation of KAPs of bikers on UV index in relation to sun protection. A larger sample size is recommended for greater demographic diversity and overall generalizability. Since all participants were recruited only from one tertiary hospital, inclusion of patients seen through different hospitals is also recommended.

Educational intervention should be done through internet or social media as the most common source of information seen in our participants. This medium has a broader reach and will easily benefit the general public.

Checking of the UV index regularly as a guide for sun protection and availability of UV index forecasts on the weather app of mobile phones must be emphasized and be part of health promotion and primary prevention strategies against skin cancer.

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Conflicts of interest

There are no conflicts of interest.

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