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Sunscreen Use, Awareness And Lifestyle Among Young Adult In Makassar

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Abstract: *Sunscreens function as a barrier to block UV radiation. The harmful effects of UV can be prevented by using sunscreen and modifying lifestyle. The aim of this study is to find a correlation between sunscreen use, sunscreen awareness, and lifestyle in young adults. The study was an observational analysis with a cross-sectional design and was conducted in Makassar, Indonesia. Participants were young adults aged 18 to 35 years old and willing to fill out questionnaires. The data were analyzed with the Spearman test. There were 85 participants, they were 23.9 years old on average (SD = 3.99), female (83.5%), college students (52.9%), and employees (35.3%). Participants mostly answer very often for sunscreen use (43.5%). There was a correlation between sunscreen use and factors such as awareness due to benefits ($p < 0.001$), preventive objectives ($p < 0.001$), activity ($p < 0.001$), and finances ($p = 0.048$). A correlation was found between the use of sunscreen and drinking enough water ($p = 0.031$). In general, lifestyle is not yet healthy, but sunscreen use and drinking enough water showed sufficient awareness of improving health.*

Keyword: *Awareness, Lifestyle, Skin protection, Sunscreen*

INTRODUCTION

Long-term changes in weather patterns that determine local, regional, and global climates on earth are referred to as climate change. Climate change is something that has far-reaching effects. Since the mid-20th century, changes in the Earth's climate have been observed to be caused by human activities, especially the burning of fossil fuels, which increases the greenhouse effect. Levels of heat-trapping gasses in the atmosphere and raised the average temperature of the Earth's surface. Ultraviolet (UV) light is part of the electromagnetic wave of solar radiation energy. The amount of UV light that reaches earth is influenced by several factors; the angle of sunlight, the latitude of the place, cloud cover, altitude, reflection on the earth surface and the ozone layer. An average UV index of 7 in Makassar city, Indonesia. An UV index reading of 6 to 7 represents a high health hazard from exposure to the sun's UV radiation.

The evidence for overall harm to human health as a direct effect of climate change is evident, but more epidemiologic research is required to establish causality in skin cancer. Skin cancer can be classified into two primary categories; melanoma and non-melanoma. Squamous cell carcinoma and basal cell carcinoma are the most prevalent non-melanoma tumors. The 17th most prevalent cancer in the world is melanoma of the skin. Use of sunscreen can effectively protect skin and reduce the risk of skin cancer, both melanoma and non-melanoma. Sunscreen use has been recommended by both the American Academy of Dermatology and the Canadian Dermatology Association to prevent developing skin cancer.

Sunscreens form chemical (organic) or physical (inorganic) substances that function as a barrier to block UV radiation, which is defined as light with wavelengths shorter than visible light (subdivided into ultraviolet A [UVA]1, UVA2, ultraviolet B [UVB], and ultraviolet C [UVC]). In recent years, patient education efforts have increased public knowledge of both the benefits of wearing sunscreen and the risks associated with prolonged sun exposure. Public education initiatives may have raised awareness of skin cancer dangers. The harmful effects of sunlight can be avoided by using photoprotective measures such as sunscreen and modifying lifestyle. The association between sunscreen use and lifestyle factors has limited amount of research. Therefore, the aim of this study is to find out about the correlation between sunscreen use, sunscreen awareness and lifestyle in young adults.

METHODS

An observational analysis with a cross-sectional design of study was conducted in Makassar City, Indonesia, for one month, from August to September 2023. The sample for this study was a young adult aged 18 to 35 years old. The sample was taken with convenience sampling. The young adult group was selected because they assumed more productive activity and were able to answer the questionnaire completely. Data sources use primary data, namely data generated from filling out questionnaires directly by participants. Fill out the questionnaire online using a Google form. The questionnaire in Indonesian (*Bahasa*) consists of closed questions on a Likert scale (5 questions about sunscreen awareness and 4 questions about lifestyle) and two open questions about sunscreen awareness.

Data was processed using SPSS Statistics and presented in the form of narratives and tables. Univariate analysis describes the characteristics of the study sample, and bivariate analysis examines the correlation between sunscreen use, sunscreen awareness and lifestyle in young adults. The data were analyzed with the Spearman test. Analysis was carried out to see the correlation and significance values.

RESULT AND DISCUSSION

Result

There were 85 participants who completed the questionnaire. The participants were 23.9 years old on average (SD = 3.99), mostly female (83.5%) and male (16.5%). Participation was dominated by college students (52.9%), followed by employees (35.3%) and unemployment (11.8%). Participants mostly answer very often for sunscreen use (Table 1). This showed that many young adults in Makassar were already wearing sunscreen.

Table 1. The use of sunscreen

Very often	Often	Sometimes	Rarely	Never	Total
37	24	12	9	3	85
43.5%	28.2%	14.1%	10.6%	3.5%	100%

Table 2 showed that participants strongly agree about sunscreen use due to the benefit (56.5%). The analysis indicated a significant correlation between sunscreen use and the use

of sunscreen due to the benefits (p <0.001). A positive correlation coefficient value (r = 0.581) indicates that people are using sunscreen more frequently because they are aware of its benefits.

Table 2. Sunscreen use due to the benefits

Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total	Spearman correlation
48	27	9	1	0	85	r = 0.581
56.5%	31.8%	10.6%	1.2%		100%	$p < 0.001$

Participants answered open-ended questions briefly by mentioning one or more benefits. Protecting skin from sun exposure was mentioned 40 times, UV protection for skin was mentioned 32 times, preventing premature aging was mentioned 11 times, and two responses did not mention the benefits of sunscreen, as they did not use it.

Table 3. Sunscreen use as a form of prevention

Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total	Spearman correlation
53	23	8	1	0	85	r = 0.500
62.4%	27.1%	9.4%	1.2%		100%	$p < 0.001$

Strongly agree (62.4%) about using sunscreen as a form of prevention (Table 3). According to the analysis's results, there was a significant correlation between sunscreen use and the use of sunscreen as a form of prevention (p <0.001 ; r = 0.500). In response to an open question on what can be prevented by wearing sunscreen, 26 participants answered preventing premature aging, followed by 17 answers about preventing dark spots, 13 answers about preventing sunburn, 12 answers about preventing dull skin, 11 answers about preventing skin cancer, and 10 answers about preventing tanned skin. Some other replies were repetition, sun protection, protection against UV, and two did not know the answer.

Table 4. The frequency of sunscreen use affected by activity

Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total	Spearman correlation
29	27	21	8	0	85	r = 0.527
34.1%	31.8%	24.7%	9.4%		100%	$p < 0.001$

There was a correlation between the use of sunscreen and the frequency of sunscreen use affected by activity (p < 0.001; r = 0.527), also, there was a correlation between the use of sunscreen and finances affecting the purchasing ability of sunscreen (p = 0.048; r = 0.215). Tables 4 and 5 show the frequency distribution in detail.

Table 5. Finances affect the purchasing ability of sunscreen

Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total	Spearman correlation
17	25	33	10	0	85	r = 0.215
20%	29.4%	38.8%	11.8%		100%	$p = 0.048$

Lifestyle characteristics (Table 6) were filled in variously by participants, mostly participants filled sometimes in regular physical activity (56.5%), sometimes had eaten nutritious food (47.1%), sometimes had enough sleep (45.9%), and very often drank enough water (58.8%). Analysis showed no correlation between sunscreen use with regular physical activity, eating nutritious food, and enough sleep (p = 0.059, p = 0.172, p = 0.148). However, there was a correlation between sunscreen use and drinking enough water (p = 0.031, r = 0.234). Young adults who use sunscreen more often tend to drink enough water, and while they should be aware about skin protection and a healthy lifestyle, they may still maintain it occasionally.

Table 6. Lifestyle characteristics

	Regular physical activity	Eat nutritious food	Enough sleep	Drink enough water
Very often	2 (2.4%)	4 (4.7%)	6 (7.1%)	50 (58.8%)
Often	13 (15.3%)	35 (41.2%)	30 (35.3%)	12 (14.1%)
Sometimes	48 (56.5%)	40 (47.1%)	39 (45.9%)	19 (22.4%)
Rarely	18 (21.2%)	6 (7.1%)	9 (10.6%)	4 (4.7%)
Never	4 (4.7%)	0	1 (1.2%)	0
Total	85	85	85	85 (100%)

Disscussion

Even while people are aware of the possible consequences of sun exposure, another study showed that a small percentage of the population use sunscreen. Females were more likely to be associated with sunscreen use. This study also had mostly female (83.5%) participants. Other studies with more participants in the general population of Saudi Arabia have shown inadequate sun awareness and protection. In contrast to previous study, this study included young adults as participants. As a result, this study's data show a high percentage of both sunscreen use and awareness. In recent years, efforts to educate people have raised public knowledge of the risks of excessive sun exposure as well as the benefits of using sunscreen. Even though we provided an open question, many participants correctly answered the benefits of sunscreen.

The use of sunscreen is evident in preventing skin cancer, despite its multifactorial pathogenesis and long lead time. A previous study found females, young people, and students were more aware of the association between sun exposure and skin cancer. In this study, 62.4% strongly agreed, 27.1% agreed with sunscreen use as a form of prevention, and the participants answered that sunscreen use prevents skin cancer. This demonstrates how well-informed the population is about preventing skin cancer. Other studies found that their participants do not spend enough time in the sun as an excuse for not wearing sunscreen. This study revealed that the sunscreen use is affected by the frequency of activity. Subjective norms, attitude, and perceived control significantly influence sunscreen purchase intention, but price was not found to be a significant factor.[13] In this study 38.8% neutral participants responded that finances affect the purchasing ability of sunscreen. We found a correlation between the use of sunscreen and finances affecting the purchasing ability of sunscreen. Purchasing power may be relative, for some people it was influential, but for others, it was not so influential.

In a previous study, association between sunscreen use and met weekly physical activity requirement is not significant ($p = 0.146$). Similar to this study no correlation between sunscreen use with regular physical activity. It was necessary to use sunscreen topically, but it was also important to eat certain foods that can increase the level of protection. A healthy lifestyle may improve cellular health and overall body health. But this study is dominated by participants who sometimes eat nutritious food. However, there is no correlation between sunscreen use and eating nutritious food. UV radiation is one of the main factors that have been proven to induce skin aging. There was a recommendation to maintain a healthy lifestyle, with a diet rich in fruits and vegetables, and enough sleep.[15] This study participants had sometimes enough sleep.

Hydration of the stratum corneum may be improved by dietary water intake. Because of the improved hydration and elasticity seen ($p < 0.05$), it is possible to keep the skin hydrated and slow down the aging process by drinking enough water. In line with this study, sunscreen use had a correlation with drinking enough water. Drinking enough water is an effort to improve skin health, and sunscreen use is an effort to protect skin. It is recommended that future studies offer longer research time to acquire more samples. This study's limitations

included its brief duration and difficulty finding participants who would fill out the questionnaire.

CONCLUSION

The study indicates that young adults in Makassar are generally good users of sunscreen, with factors such as awareness due to benefits, preventive objectives, activity effects, and finances having significance. However, lifestyle in general is not yet healthy overall, a correlation was found between the use of sunscreen and drinking enough water, which showed sufficient awareness of improving health. The future goal is to increase awareness about skin protection efforts, followed by a rise in healthy lifestyles in society.

REFERENCES

Akdeniz M, Tomova-Simitchieva T, Dobos G, Blume-Peytavi U, Kottner J. Does dietary fluid intake affect skin hydration in healthy humans? A systematic literature review. Skin Research and Technology. 2018 Aug;24(3):459–65.

AlGhamdi KM, AlAklabi AS, AlQahtani AZ. Knowledge, attitudes and practices of the general public toward sun exposure and protection: A national survey in Saudi Arabia. Saudi Pharmaceutical Journal. 2016 Nov;24(6):652–7.

Al Robaee AA. Awareness to sun exposure and use of sunscreen by the general population. Bosn J Basic Med Sci. 2010 Nov;10(4):314–8.

Alsudairy F, Alharbi T, Qadi A, Almutairi S, Asiree H. Awareness of Sun Exposure and use of sunscreen among adults in Saudi Arabia, 2018. IJMDC. 2019;389–94.

Bachleda C, Fakhar A, Hlimi L. Sunscreen Purchase Intention amongst Young Moroccan Adults. International Journal of Academic Research in Business and Social Sciences. 2012 May;2(5).

Badan Meteorologi, Klimatologi, dan Geofisika [Internet]. 2023. Indeks Sinar Ultraviolet. Available from: https://www.bmkg.go.id/kualitas-udara/indeks-uv.bmkg

Hadi H, Awadh AI, Hanif NM, Md Sidik NFA, Mohd Rani MRN, Suhaimi MSM. The investigation of the skin biophysical measurements focusing on daily activities, skin care habits, and gender differences. Skin Res Technol. 2016 May;22(2):247–54.

Krutmann J, Bouloc A, Sore G, Bernard BA, Passeron T. The skin aging exposome. Journal of Dermatological Science. 2017 Mar;85(3):152–61.

Merten JW, King JL, Vilaro MJ, Largo-Wight E. Lifestyle Factors Associated With Sunscreen Use Among Young Adults. Am J Lifestyle Med. 2018;12(4):331–9.

Murad H, Murad J. Eat Your Sunscreen: How the Food We Consume Can Protect Our Skin from the Sun's Harmful Rays. [Internet]. 2013. Available from: https://drhowardmurad.com/wp-content/uploads/2019/07/Eat-Your-Sunscreen-How-the-food-we-consume-can-protect-our-skin-from-the-suns-harmful-rays.pdf

NASA [Internet]. 2023. NASA Global Climate Change. Available from: https://climate.nasa.gov/what-is-climate-change/

Parker ER. The influence of climate change on skin cancer incidence – A review of the evidence. International Journal of Women's Dermatology. 2021 Jan;7(1):17–27.

P YD, C RB, Swamy S s, Raghukumar S, Aggarwal A. Knowledge, attitude and practices about sun exposure, photoprotection and sunscreen usage among college students of Hassan in Karnataka: A cross-sectional study. Journal of Pakistan Association of Dermatologists. 2018 Jul 23;28(1):64–8.

Sander M, Sander M, Burbidge T, Beecker J. The efficacy and safety of sunscreen use for the prevention of skin cancer. CMAJ. 2020 Dec 14;192(50):E1802–8.

Swindler JE, Lloyd JR, Gil KM. Can sun protection knowledge change behavior in a resistant population?. Cutis. 2007;79(6):463-470.

Weather-Atlas [Internet]. 2023. May weather forecast Makassar, Indonesia. Available from: https://www.weather-atlas.com/en/indonesia/makassar-weather-may#google_vignette

World Cancer Research Fund International [Internet]. 2023. Skin cancer statistics. Available from: https://www.wcrf.org/cancer-trends/skin-cancer-statistics