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RESEARCH ARTICLE

Relationship between Knowledge, Attitudes, and Practices of Universitas Mataram Students regarding the Use of Masks on the Occurrence of Maskne

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Abstract

Coronavirus disease 2019 (COVID-19) is transmitted from human to human and primarily via the respiratory route; hence, wearing a mask is the first step in preventing the spread of COVID-19. Behind the benefits of these masks are adverse consequences on the skin, such as lesions and acne. This study aims to ascertain the relationship between students' knowledge, attitudes, and practices regarding the use of masks on the occurrence of maskne. This research is a cross-sectional analytic observational study. The research subjects were 100 students from the Universitas Mataram's 2018 class, from November 2020 to January 2022, using a stratified random sampling technique—data collection from primary data via a Google Form. Data analysis was carried out by testing the lambda hypothesis. In this study, 38% (n=38) of the respondents reported maskne, while 62% (n=62) reported not maskne. Among the respondents who reported not maskne, the majority mentioned having good knowledge, positive attitudes, and good practice. The lambda hypothesis analysis indicates significant correlations between students' knowledge (p=0.004), attitudes (p=0.001), and practices (p=0.006) regarding mask usage and the occurrence of maskne. A relationship exists between students' knowledge, attitudes, and practices regarding mask usage and maskne occurrences.

Keywords: Attitudes, knowledge, maskne, practices, student

Introduction

Coronavirus disease 2019 (COVID-19), detected in December 2019, has developed into a pandemic affecting several countries worldwide.[1] COVID-19 is transmitted from person to person, primarily via the respiratory route. Hence, wearing masks for sick and healthy individuals is the primary and most significant step in preventing the spread of COVID-19.[2,3] Behind the benefits of masks in reducing the spread of COVID-19 are side effects experienced by the skin, such as skin lesions and acne.[4] Previous research has revealed that the usage of masks can induce acne on the nose, cheeks, chin, and lesions behind the ears.[5–7] Acne that emerges owing to the usage of this mask is called maskne.[8,9] Han et al.'s[10] findings showed that five of the 12 masked patients encountered acne for the first time after at least one month of frequent usage of masks, while the other seven patients reported worsening acne. Another study found that of the 833 students studied, 333 suffered acne due to incorrect use of masks.[11]

Proper masks can limit the occurrence of masknes.[12] In earlier research evaluating the knowledge, attitudes, and practices of students in Vietnam regarding the usage of masks, it was observed that students had good knowledge, positive attitudes, and good practices using masks.[13] Another study at the STIKes Raflesia Depok revealed that the respondents had high knowledge, positive attitudes, and good action in preventing COVID-19, specifically wearing masks.[14] Students who are predominantly adolescent in age are prone to develop masks during adolescence because of the influence of growth hormones and androgens, which increase during puberty and induce an increase in sebum production, which contributes to the creation of acne.[15]

This study aims to ascertain the relationship between students' knowledge, attitudes, and practices regarding the use of masks on the occurrence of maskne.

Methods

It is an analytical observational study with a cross-sectional design conducted at the Universitas Mataram from November 2020 to

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January 2022. Students were chosen for the study sample due to their adolescent age range, which is susceptible to the onset of acne. Considering the extensive population, the 2018 batch was selected as a representation because it was the most accessible.

The minimum sample in this study was calculated using the correlational formula, resulting in a minimum sample of 92. Subsequently, the research sample consisted of 100 students from the 2018 cohort. The sampling technique employed was the stratified sampling technique in each faculty, composed of 10 students from each faculty (faculty of medicine, faculty of law, faculty of engineering, faculty of business, faculty of animal husbandry, faculty of agriculture, faculty of food technology, faculty of mathematics and natural sciences, faculty of education and teacher training, and programs under the rectorate). The research instrument utilized was a self-constructed questionnaire in a Google Form. It consisted of eight questions concerning knowledge about mask usage, nine questions about attitudes toward mask usage, and ten questions about behaviors related to mask usage.

Additionally, there were questions regarding acne experienced, and respondents were requested to attach facial photographs capturing the front, right side, and left side to assess the acne condition they were experiencing. The questionnaire was validated using the Pearson product-moment correlation, resulting in an r value<0.05 (indicating questionnaire validity). The questionnaire's reliability was tested using Cronbach's alpha, yielding a result of 0.61 (indicating questionnaire reliability).

Because the sample size exceeded 50, the researcher conducted a normality test on the data using the exact method, which yielded a normality result of p=0.139 (p>0.05). The researcher used the hypothesis lambda to analyze the relationship between knowledge, attitudes, and mask usage behavior (ordinal data) with the occurrence of maskne (nominal data). The results indicate that if the p value<0.05, it is considered to be associated, and if the r value falls within the range of 0.00–0.19, it is a very weak correlation; 0.2–0.39 is a weak correlation; 0.4–0.59 moderate correlation; 0.61–0.8 is strong; and 0.81–1.00 is a very strong correlation.

Ethical issues may arise, including the willingness to participate in the research and the confidentiality of respondent data. The researcher has provided informed consent before respondents answered the questionnaire, and the researcher ensures the confidentiality of respondent data. Ethical clearance approved by the Health Research Ethics Committee of the Faculty of Medicine of Universitas Mataram under the number 152/UN18.F7/ETIK/2021.

Results

Table 1 shows respondents' characteristics based on gender and acne history. There were more female respondents than male. Out of 100 respondents, the majority were female respondents, and most had a history of acne.

Out of 100 respondents, most demonstrated good knowledge about using masks, as seen in Table 2. The data analysis also revealed that most respondents had positive attitudes toward using masks and showed that the most significant proportion of respondents had good practices.

Table 3 shows the best aspect of knowledge is the frequency of mask use since most respondents correctly responded, and the worst aspect is maskne prevention because most respondents incorrectly answered. Table 3 also revealed that the best aspect of respondents' practices is the frequency with which they use masks (duration of using a mask), while the worst aspect is the length of time they use masks (duration to rest the face). The best aspect of attitudes is facial hygiene, as most respondents strongly agreed, and the worst aspect is how to use masks, as the majority strongly disagreed, as seen in Table 4.

According to Table 5, we found that most students did not have maskne, with most of them being female and having never experienced acne before. Meanwhile, most students with masks were female and had experienced acne before. A bivariate analysis between gender and a history of acne with maskne occurrence using the chi-

Table 1 Characteristics of Respondents

Characteristics	n=100 (%)
Gender	
Male	25 (25)
Female	75 (75)
History of acne	
Had acne before	59 (59)
Never had acne before	41 (41)

Table 2 Description of Respondents' Knowledge, Attitudes, and Practices

Aspects	Good n (%)	Enough n (%)	Bad n (%)	Total n (%)
Knowledge	38 (38)	36 (36)	26 (26)	100 (100)
Attitudes	35 (35)	31 (31)	34 (34)	100 (100)
Practices	49 (49)	30 (30)	21 (21)	100 (100)

Table 3 Description of Respondents' Knowledge and Practices regarding Using Masks

Aspects	True (n)	False (n)
Knowledge		
Aggravating or precipitating factors	31	69
The duration of using the mask	78	22
Frequency of using masks	98	2
How to care for a mask	25	75
How to use a mask	83	17
Maskne prevention	23	77
Maskne treatment		
Must be treated	31	69
Heal yourself	41	59
Practices		
Mask type		
Cloth mask	50	50
Medical mask	81	19
Duration of using the mask		
Time to rest the face	17	83
Usage duration	24	76
Frequency of using masks		
Time of using mask	96	4
Mask replacement	63	37
How to care for a mask	64	36
How to use a mask	76	24
Prevention	20	80
Treatment	51	49

Table 4 Description of Respondents' Attitudes regarding Using Masks

Aspects of Attitudes	"Strongly Agree"	Agree	Neutral	Disagree	"Strongly Disagree"
How to use a mask	6	19	25	30	20
Duration of using the mask	5	32	31	24	8
Frequency of use	12	30	30	21	7
Facial hygiene	43	27	17	10	3
Decorative cosmetic use	25	19	28	21	7
Side effects	18	26	38	14	4
How to care for a mask	22	35	28	10	5
Use of moisturizer	9	26	37	17	11
Treatment	29	26	22	10	13

Table 5 Distribution of Occurrence Maskne by Gender and Acne History

Characteristics	No Maskne (n=62)	Maskne (n=38)	Total (n=100)	p*
Gender				
Male	18	7	25	0.234
Female	44	31	75	
History of acne				
Had acne before	29	30	59	0.001
Never had acne before	33	8	41	

Note: *chi-square test

square test found a relationship between a history of acne and maskne, but no relationship between gender and maskne occurrence.

In Table 6, among the respondents who did not have maskne, the majority had good knowledge, positive attitudes, and with good practices. Meanwhile, among the respondents who had maskne, the majority had poor knowledge, negative attitudes, and harmful practices. Table 6 also revealed a weak correlation between knowledge and the occurrence of maskne, a relationship between attitude and maskne with a moderate correlation strength, and a relationship between behavior and the occurrence of maskne with a moderate correlation strength.

Discussion

In this study, we found that the majority of students did not have masks, with most of them being female. However, statistical testing in this study revealed no relationship between gender and the occurrence of masks. According to prior research by Mahmood and Shipman,[16] gender does not affect the occurrence of maskne. Most students who did not have maskne in this study had never experienced acne before. In contrast, most students who had maskne had a prior history of acne. Students who got maskne had been wearing masks regularly for more than six weeks. Statistical testing in this study revealed a relationship between acne history and the occurrence of maskne. It is consistent with the findings of previous studies by Rosner,[7] which indicated that a history of acne was associated with maskne. American Academy of Dermatology Association explained that acne is a risk issue for mask use in theory because the skin is readily irritated by the friction of the mask, which increases the warmth and humidity of the skin

Table 6 Description of Relationship of Respondent's Knowledge, Attitudes, and Practices regarding Using Masks Between Occurrence of Maskne

Aspects	Occurrence of Maskne		Total (n=100)	Lambda Hypothesis	
	No Maskne (n=62)	Maskne (n=38)		p	r
Knowledge					
Good	34	4	38	0.004	0.368
Enough	22	14	36		
Bad	6	20	26		
Attitudes					
Positive	31	4	35	0.001	0.474
Enough	23	8	31		
Negative	8	26	34		
Practices					
Good	46	3	49	0.006	0.500
Enough	14	16	30		
Bad	2	19	21		

covered by the mask, exacerbating acne.[12]

According to the findings of this study, the majority of respondents demonstrated good knowledge. The best aspect of knowledge was related to the frequency of mask use, as most respondents provided the correct answer. Conversely, the worst aspect is maskne prevention, with most respondents answering incorrectly. The results of this study differ from those of previous studies. Limbong et al.'s[13] study found that 99.5% of students at Universitas Padjadjaran had adequate knowledge about the use of masks, and Duong et al.'s[17] study reported that 89.7% of students in Vietnam had sufficient knowledge about the use of masks. Additionally, a study at Melaka Manipal Medical College found that most students, about 55.2%, had adequate knowledge about using masks.[18]

Based on this study, most students did not have masks, and most had good knowledge regarding the use of masks. However, it was determined that most students who had masks needed more knowledge.

According to the study's findings, most respondents had positive attitudes. The best aspect of attitudes was related to facial hygiene, as most respondents strongly agreed. In contrast, the worst aspect was related to how to use masks, as most respondents strongly disagreed. The results of this study differ from those of previous studies in that Limbong et al.'s[13] research found that most of the students had a positive attitude toward the use of masks, about 87.9% of students and Duong et al.s'[17]s research found that most of students in Vietnam had positive attitude toward the use of masks about 72.8% students, and also Wachemo University's research found that most of students had positive attitude toward the use of masks about 81% students.[19]

Based on this study, most students did not have masks, and most had positive attitudes regarding the use of masks. However, for students who had maskne, it was determined that most of them had negative attitudes. After conducting statistical tests, it was determined that there was a moderate correlation between students' attitudes toward mask use and the occurrence of maskne. It explains why the more negative the attitude toward mask use is, the more likely maskne will arise, and vice versa.

According to the study's findings, most respondents had good practice. The best aspect of respondent practices is the frequency with which they use masks (time of using a mask), while the worst aspect is the length of time they use masks (time to rest the face). The results of this study differ from those of previous studies, including Duong et al.'s[17] research, which found that 76.5% of students in Vietnam had positive attitudes toward mask use, Larebo and Abame's[19] research at Wachemo University, which found that 89.5% of students had positive attitudes toward mask use, and also Universitas Padjadjaran's research, which found that 67% of students had positive attitudes toward mask use.[13]

Based on this study, most students did not have masks, and most had good practices regarding the use of masks. However, for students who had maskne, it was determined that most of them had bad practices. After conducting statistical tests, it was determined that there was a moderate correlation between student practices regarding the use of masks and the occurrence of masks. It explains that the worse the attitude regarding the use of masks, the greater the possibility of the occurrence of maskne and vice versa.

Conclusion

There is a significant relationship between students' knowledge, attitudes, and practices regarding the use of masks and the occurrence of masks.

Conflict of Interest

The authors declare that there are no competing interests.

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