A Cross-Sectional Study on the Factors Associated with Social Media Use in Patients with Acne Vulgaris in a Tertiary Hospital*

Ma. Bernadette Beatrize L. Paredes[1], MD; Mary Elizabeth S. Danga, MD, FDSP-PDS[2]

ABSTRACT

Background: Acne vulgaris is one of the common skin diseases prompting dermatologic consult. Although prevalent worldwide, knowledge of the public about acne is still lacking. Due to this, content related to acne vulgaris has been a topic of choice on social media platforms.

Methods: A cross-sectional study was conducted among 120 patients diagnosed with acne vulgaris aged 18–50 years-old consulting via teledermatology and face-to-face consultation at the Rizal Medical Center. Patients completed a self-administered questionnaire and global acne severity was assessed.

Results: A total of 120 newly diagnosed patients with acne vulgaris were included in the study, with a mean age of 23.25 years, with a female predominance, household average monthly income less than PhP 10,957 and with mild to moderate acne severity. Majority of the participants used social media to look for treatment options and to gain more knowledge about the disease. The most used platforms were Youtube, Facebook and Tiktok. Short videos were viewed more often and content from dermatologists were preferred. Most commonly tried products are over-the-counted non-pharmaceutical topical products. There was a significant association between the use of social media with age and educational attainment. Furthermore, a significant association between self-medication practices and average household monthly income was seen. No association was seen between acne severity, social media use and self-medication practices.

Conclusion: In summary, the use of social media to access acne-related content was prevalent among young female patients, of lower socioeconomic status diagnosed with mild-moderate acne severity at a tertiary hospital in the Philippines.

Keywords: *acne, social media, self-medication practices*

INTRODUCTION AND RELEVANCE

Acne vulgaris is a common chronic inflammatory disorder of the pilosebaceous unit which may affect all age groups but is more common during adolescence. [1,2] It is estimated that up to 85% of young people between the ages of 12-24 years of age are affected by acne and some occur and persist until adulthood.[1,3] Acne may present as mild, moderate, and severe forms. In the severe form of acne, nodules and cysts may cause scarring and psychological effects.[4] Acne accounts for approximately 0.3% of the total and approximately 16% of the dermatologic disease burden globally.[1] In the Philippines alone, acne vulgaris is one of the common skin diseases prompting dermatologic consult.[5] Although prevalent worldwide, knowledge of the public about acne is still lacking.[3]

Disclosures: The author has formally acknowledged and signed a disclosure affirming the absence of any financial or other relationships (including personal connections), intellectual biases, political or religious affiliations, and institutional ties that could potentially result in a conflict of interest.

[1] Resident, Department of Dermatology, Rizal Medical Center, Pasig City
[2] Consultant, Department of Dermatology, Rizal Medical Center, Pasig City

The internet has been an essential source of health-related information as the number of search queries has been rising continuously every year.[6] Unlike all existing forms of mass media, the internet has exceeded the rest by allowing user-generated content and thus creating a more inclusive and personal aspect to its users.[4] In a study by Braunberger et al.[7], acne vulgaris had the highest number of related posts and hashtags, and was the 4th most inquired topic after skin care, anti-aging and hair products on social media.[8] However, this also creates an avenue for non-experts of the field to share posts about diseases. This can lead to access to unverified, unreliable and uncredible information which can do more harm than good.[9]

This is specifically depicted in a study by Kalidaya et al.[10], where it showed the prevalence of self-medication practices for acne vulgaris patients in Saudi Arabia. It showed that half of the participants in the study use social media platforms as guidance for acne treatment. Another study by Yousaf et al.[11], noted that 45% of the acne vulgaris patient seen at the West Virginia University ambulatory center, West Virginia, USA resulted to social media for expert advice on acne treatment (54% of women vs 31% of men). Furthermore, treatment decisions based on social media did not align with the American Academy of Dermatology (AAD) guidelines. Although severity was measured in both studies, association of acne severity with the use of social media was not quantified. An association between social media use and acne severity was depicted in a study conducted in Turkey by Kayiran et al.[9] Their research showed that the use of social media and the internet to seek information about acne vulgaris was statistically significantly higher among women, with short-term and severe disease, with a moderate family income level.

Based on current and previous studies, we can say that there is an association between acne vulgaris and social media use.[10,11,12] Although, due to the lack of literature focusing on the impact of acne severity and social media use, a direct association cannot be made. The need for verified, credible information prepared by the right people in the field, such as dermatologists was also apparent in the results of previous studies. The lack of current studies, specifically in the Philippines has prompted the researcher to explore more about the topic.

METHODOLOGY

A. Study Design

A cross-sectional study design was conducted among acne patients consulting via Teledermatology at Rizal Medical Center in a 3-month duration to determine the association of acne severity and socioeconomic factors on the use of social media for information gathering and self-medication practices in patients with acne vulgaris.

The study included individuals newly diagnosed with acne vulgaris, aged 18-50 years old[13] seen via teledermatology or face-to-face consultation at the out-patient department or via teledermatology at Rizal Medical Center. Patients diagnosed with acneiform eruptions were excluded from this study.

The primary data collection of the study was done via teledermatology and face-to-face consultation at the out-patient department at Rizal Medical Center by the primary investigator, and was done in a period of 3 months until the recommended sample size was reached. An electronic informed consent via google forms was sent prior to participation in the study.

B. Sampling Design

Purposive sampling was utilized for this study. Sampling size was computed by first obtaining the population size of 136 based on a 3-month average number of new physical and teledermatology acne patients, aged 18-50 years old, seen at the RMC dermatology clinic in 2023

(total new adult acne patients from January 1 to April 30, 2023 is 182, with a monthly mean of 45.5). At 95% confidence level with 0.05 allowable error, the computed sample size for population size of 136 with finite population correction is 101.

C. Validation and Pilot Testing

The questionnaire used was constructed by the researcher based on the questionnaire used in the study of Kaliyadan et. Al[10]. The constructed questionnaire underwent face validity by an expert committee.[14] The panel consisted of five board-certified dermatologists of the Philippine Dermatological Society, who are currently practicing in the field of dermatology. The questionnaire then underwent construct validity by a statistician using SPSS. Once validation was complete, the questionnaire underwent translation in Filipino by a chief language researcher of "Komisyon sa Wikang Filipino" (KWF). A pilot study of at least 10 respondents from the sampling population was done prior to administrating the questionnaire to the sample population.[15] Necessary changes to the questionnaire noted from the pilot study was adapted prior to data collection.

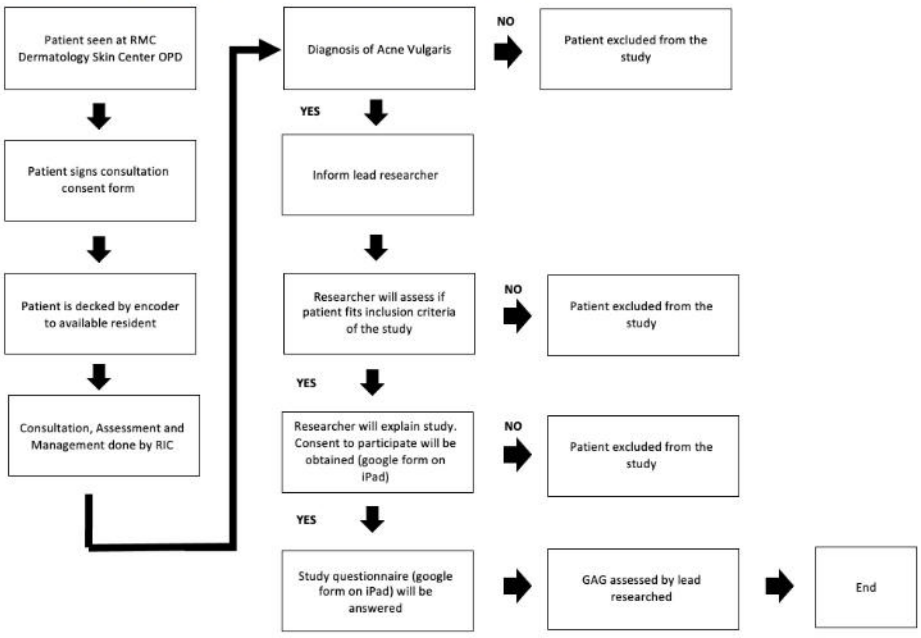
D. Data Collection

Each participant went through the normal consultation process, for both teledermatology and face-to-face consultation followed by Rizal Medical Center Department of Dermatology. The patient was triaged to any available resident.

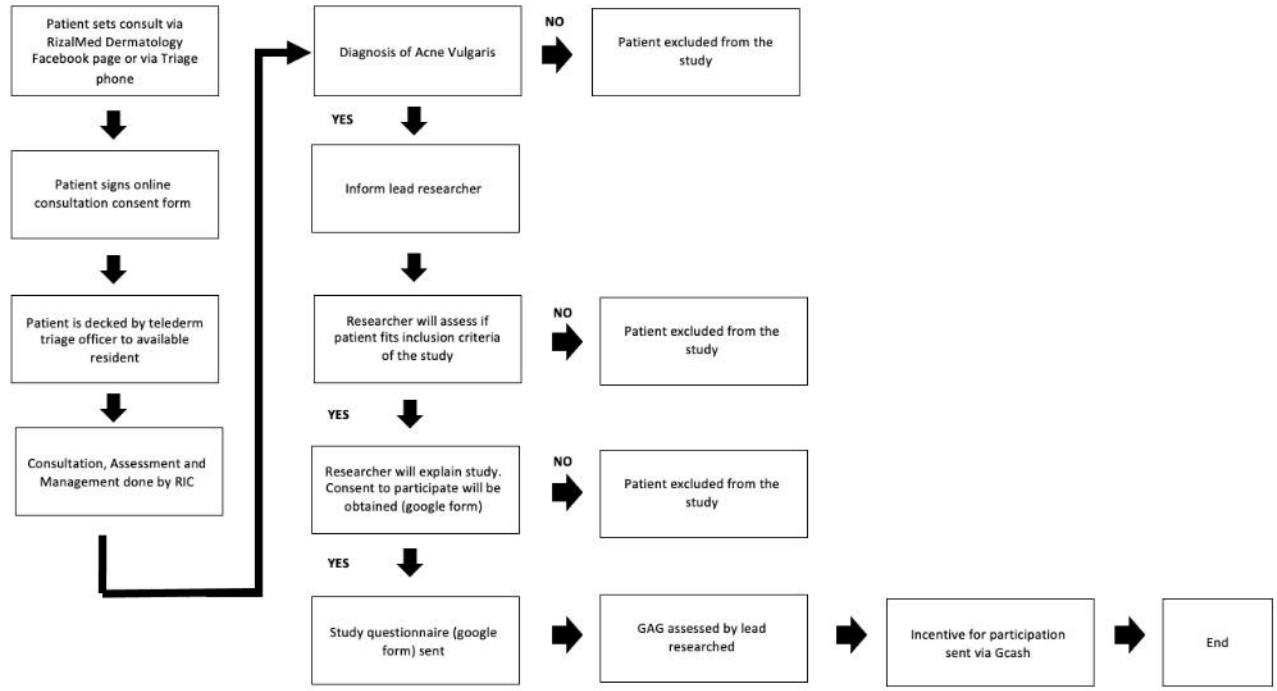
The resident-in-charge was responsible for consultation, diagnosis and management of the patient. All patient diagnosed with acne vulgaris, who fit the inculsion/exclusion criteria were included in the study.

All eligible participants were sent a digital consent form before being included in the study. The respondents were tasked to complete a five-part, fourteen item, Filipino or English, self-administered online questionnaire using Google form. This included biographical data, their source of information, reliability of information obtained, social media preference and habits, reason which prompted dermatologic consult, and self-medication practices. The principal investigator then evaluated the acne severity of the respondent, categorizing it as mild, moderate and severe using the Global Acne Grading System. All participants seen via teledermatology were given an incentive of P15.00, sent via Gcash for their internet data used to participate in the study.

Flowchart for face-to-face consultation



Flowchart for online consultation



Data Analysis

All statistical analyses were performed using IBM Corp. Released 2019. IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp. A *p*-value of ≤0.05 was considered statistically significant. Descriptive statistics such as mean, standard deviation, frequency, and percentage were employed to summarize the demographic characteristics, acne severity, social media use, social media preference and credibility of site and information of the respondents. To determine association between social media use to view acne-related content and the following variables: age (years), highest educational attainment, estimated household average monthly income, acne severity, Chi-square test of independence was used.

Results

A total of 120 newly diagnosed patients with acne vulgaris were included in the study, with a mean age of 23.25 years and with female dominance (69.17% vs 30.83%) [Table 1]. In terms of household average monthly income, majority of the respondents reported to have a monthly income less than PhP 10,957 (36.6%7). The distribution of patients across mild and moderate acne severity is nearly equivalent (49.17% vs 45%), whereas 5.83% exhibit severe acne vulgaris.

Table 1. Demographic characteristics and acne severity of the respondents (n=120)

	Frequency (%)
Age, years	
18-25	87 (72.50)
26-35	22 (18.33)
36-45	9 (7.50)
46 and up	2 (1.67)
Sex	
Male	37 (30.83)
Female	83 (69.17)
Highest Educational Attainment	
Elementary graduate	2 (1.67)
High School graduate	25 (20.83)

College undergraduate	48 (40.00)
College graduate	44 (36.67)
Post-graduate	1 (0.83)
Household Average Monthly Income, Php	
Less than 10,957	44 (36.67)
10,957 to 21,914	33 (27.50)
21,915 to 43,828	27 (22.50)
43,829 to 76,699	8 (6.67)
76,700 to 131,484	4 (3.33)
131,485 to 219,140	3 (2.50)
219,141 and above	1 (0.83)
Acne Severity	
Mild	59 (49.17)
Moderate	54 (45.00)
Severe	7 (5.83)

The survey revealed that 96.67% of the patients reported using social media platforms to access content associated with skin health and skin-related issues and 90.83% of those patients view social media content that is centered around topics related to acne [Table 2.1]. The most common reasons for searching and viewing acne-related content include seeking treatment options (79.82%) and understanding the cause/s (77.98%) of acne. Dermatologists (96.33%) are the main sources of information followed by non-medical influencers (57.80%) and non-dermatologist doctors (26.61%) [Table 2.2]. The preferred platforms for accessing content are YouTube (74.31%), Facebook (68.81%) and Tiktok (67.89%). Preferred content formats include short videos (78.90%), followed by long videos (54.13%).

Table 2.1 Social media use among patients with acne vulgaris (n=120)

	Frequency (%)
Do you use social media to access content related to skin health and/or skin concerns?	
Yes	116 (96.67)
No	4 (3.33)
Do you view social media content focusing on acne-related content?	
Yes	109 (90.83)
No	11 (9.17)

Table 2.2. Social media use among patients with acne vulgaris in relation to social media platform, source and content (n=109)

	Frequency (%)
What are your reasons for searching and viewing acne-related content? (multiple response question)	
For entertainment	7 (6.42)
To look for treatment options	87 (79.82)
To diagnose own skin condition	42 (38.53)
To gain knowledge on the causes of acne	85 (77.98)
For product research and recommendations	69 (63.30)
From whose source do you view acne-related content?	
Dermatologist	105 (96.33)
Celebrities/ Influencers	63 (57.80)
Non-dermatologist medical doctors	29 (26.61)
What social media platform do you use in obtaining acne-related information?	
Tiktok	74 (67.89)
Twitter	9 (8.26)
Youtube	81 (74.31)
Facebook	75 (68.81)
Instagram	15 (13.76)
Which type of social media content do you prefer in obtaining acne-related information?	
Blogs	41 (37.61)
Images/ infographics	52 (47.71)
Short Videos	86 (78.90)
Long Videos	59 (54.13)

Table 3 provides an overview of patient behaviors regarding checking the credibility of acne-related content seen on different social media platforms. Among the 101 (92.66%) patients who check the credibility of the information they see online, only 42.57% do so frequently. The most common way of checking the credibility of the source was through doing a background research on their educational background and profession (51.49%). Notably, 48 (47.52%) of the patients have consulted a dermatologist regarding the acne-related content seen online while 52.48% of the respondents did not consult a dermatologist. Out of the 48 patients who did consult a dermatologist regarding the acne content gathered online, only 10.42% of the respondents frequently consulted their dermatologist regarding the content gathered.

Table 3. Credibility checking of acne-related content among patients with acne vulgaris (n=109)

	Frequency (%)
Do you check the credibility of the acne-related information you gather on social media?	
Yes	101 (92.66)
No	8 (7.34)
If yes, how frequently do you check the credibility of the acne-related information you gather on social media? (n=101)	
Rarely	9 (8.91)
Sometimes	16 (15.84)
Often	33 (32.67)
Always	43 (42.57)
How do you check the credibility of the source? (n=101)	
Asking a friend/family member	12 (11.88)
Checking number of subscribers	8 (7.92)
Consulting with my Dermatologist	25 (24.75)
Consulting with a Medical Professional	4 (3.96)
Doing background research on their education background and profession	52 (51.49)
Have you consulted a dermatologist regarding the acne-related content you see online? (n=101)	
Yes	48 (47.52)
No	53 (52.48)
If Yes, how frequent do you consult your dermatologist regarding the acne-related content you see online? (n=48)	
Rarely	11 (22.92)
Sometimes	26 (54.17)
Often	6 (12.50)
Always	5 (10.42)

Table 4.1 illustrates social media use as a guide for acne treatment among individuals with acne vulgaris. Of the 84 patients who have tried social media-recommended acne treatments, topical medications (92.86%) were the most used followed by diet (23.81%), DIY/home remedies (22.62%) and oral medication (17.86%). Specifically, out of the 84 patients, 66 patients were influenced by social media to try recommended cleansers, sunscreen and moisturizers (78.57%) followed by toner/serums and facial masks (73.81%). Medications requiring prescriptions such as topical retinoids (67.86%), oral isotretinoin (20.24%), oral and topical antibiotics (3.57%) were also used based on social media recommendation. Majority of the patients reported minimal improvement (46.43%) after using the acne treatment recommended on social media. Out of all the 120 participants, majority sought consult with a dermatologist due to the increase in severity of their disease (42.50%) [Table 4.2].

Table 4.1 Social media use as a guide for acne treatment among individuals with acne vulgaris (n=109)

	Frequency (%)
Have you tried any skincare products for the treatment of acne recommended on social media?	
Yes	84 (77.06)
No	25 (22.94)
What treatment options have you tried based on the recommendations seen on social media? (n=84)	
Diet	20 (23.81)
Oral medications	15 (17.86)
Topical medication	78 (92.86)
Home remedies	19 (22.62)
What specific products have you tried based on the recommendations on social media? (n=84)	
Cleansers	66 (78.57)
Sunscreen	66 (78.57)
Moisturizer	66 (78.57)
Facial Mask	62 (73.81)
Toners/Serum	62 (73.81)
Oral Isotretinoin	17 (20.24)
Rejuvinating set	17 (20.24)
Oral supplements	57 (67.86)
Tretinoin/Adapalene/Retinol/ Trifarotene	57 (67.86)
Oral antibiotics (Doxyxyxline, Lymecycline, Minocycline, etc)	3 (3.57)
Topical antibiotics (Clindamycin, Erythromycin, Benzoyl peroxide, etc)	3 (3.57)
Did you notice any change after using the products recommended on social media? (n=84)	
No change	8 (9.52)
Minimal improvement	39 (46.43)
Significant improvement	27 (32.14)
Not sure	10 (11.90)

Table 4.2. Motivations in consulting a dermatologist for acne issues (n=120)

	Frequency (%)
What prompted you to consult a dermatologist for your acne related problem?	
Social media influence	19 (15.83)
Increase in severity	51 (42.50)
Current treatment wasn't working	16 (13.33)
Recommendation of family/friends	15 (12.50)
Others, please specify	5 (4.17)
No answer	14 (11.67)

At alpha=0.05, Chi-square test of independence revealed that the use of social media to view acne-related content is significantly associated with the patient's age and highest educational attainment. Crosstabulation of responses in table 5.1 revealed that an associated relationship between highest educational attainment and the use social media platforms to view acne-related content at 0.027 p-value.

Table 5.1 Association of personal data and the use of social media to view acne-related contents (n=120)

	Yes	No	χ^2	p-value
	Frequency (%)			
Age, years				
18-25	82 (94.25)	5 (5.75)	4.443	0.035*
26 and above	27 (81.82)	6 (18.18)		
Highest Educational Attainment				
Elementary/High School Graduate	27 (100.00)	0	7.223	0.027*
College Undergraduate	45 (93.75)	3 (6.25)		
College Graduate/postgrad	37 (82.22)	8 (17.78)		
Household Average Monthly Income				
Less than 10,957	41 (93.18)	3 (6.82)	1.857	0.395
10,958 to 21,914	31 (93.94)	2 (6.06)		
21,915 and up	37 (86.05)	6 (13.95)		
Acne Severity				
Mild	52 (88.14)	7 (11.86)	1.432	0.491
Moderate	50 (92.59)	4 (7.41)		
Severe	7 (100.00)	0		

*Statistical test used: Chi-square test of independence *significant at p<0.05*

Table 5.2 show that there is no significant association between the frequency of checking the credibility of acne-related content and the personal data of participants such as age, education, income, and acne severity. Similarly, there is no significant association between the practice of consulting a dermatologist to cross-check the credibility of the acne-related content seen on social media and the personal data of participants such as age, education, income, and acne severity [Table 5.3].

Table 5.2. Association of personal data and frequency of checking credibility of acne-related content (n=109)

	N	R	S	O	A	χ2	p-value
	Frequency (%)						
Age, years							
18-25	6 (7.32)	5 (6.10)	11 (13.41)	29 (35.37)	31 (37.80)	5.291	0.259
26 and above	2 (7.41)	4 (14.81)	5 (18.52)	4 (14.81)	12 (44.44)		
Highest Educational Attainment							
Elementary/High School Graduate	1 (3.70)	4 (14.81)	1 (3.70)	12 (44.44)	9 (33.33)	11.636	0.168
College Undergraduate	2 (4.44)	3 (6.67)	10 (22.22)	12 (26.67)	18 (40.00)		
College Graduate/ postgrad	5 (13.51)	2 (5.41)	5 (13.51)	9 (24.32)	16 (43.24)		
Household Average Monthly Income							
Less than 10,957	2 (4.88)	6 (14.63)	6 (14.63)	17 (41.46)	10 (24.39)	14.098	0.079
10,957 to 21,914	4 (12.90)	3 (9.68)	4 (12.90)	6 (19.35)	14 (45.16)		
21,914 and up	2 (5.41)	0	6 (16.22)	10 (27.03)	19 (51.35)		
Acne Severity							
Mild	2 (3.85)	3 (5.77)	6 (11.54)	16 (30.77)	25 (48.08)	8.308	0.404
Moderate	6 (12.00)	5 (10.00)	9 (18.00)	16 (32.00)	14 (28.00)		
Severe	0	1 (14.29)	1 (14.29)	1 (14.29)	4 (57.14)		

Legend: N – Never, R – Rarely, S – Sometimes, O – Often, A – Always
*Statistical test used: Chi-square test of independence *significant at p<0.05*

Table 5.3. Association of personal data and consultation with dermatologist on acne-related content online (n=101)

	Yes	No	χ^2	p-value
	Frequency (%)			
Age, years				
18-25	33 (43.42)	43 (56.58)	2.073	0.150
26 and above	15 (60.00)	10 (40.00)		
Highest Educational Attainment ok				
Elementary/High School Graduate	8 (30.77)	18 (69.23)	4.132	0.127
College Undergraduate	22 (51.16)	21 (48.84)		
College Graduate/postgrad	18 (56.25)	14 (43.75)		
Household Average Monthly Income				
Less than 10,957	14 (35.90)	25 (64.10)	3.454	0.178
10,957 to 21,914	15 (55.56)	12 (44.44)		
21,914 and up	19 (54.29)	16 (45.71)		
Acne Severity				
Mild	27 (54.00)	23 (46.00)	2.182	0.336
Moderate	19 (43.18)	25 (56.82)		
Severe	2 (28.57)	5 (71.43)		

Legend: N – Never, R – Rarely, S – Sometimes, O – Often, A – Always
*Statistical test used: Chi-square test of independence *significant at $p<0.05$*

Lastly, there was no significant association between self-medication practices and the personal data of participants such as age, income, and acne severity. However, there is an association between self-medications practices based on social media recommendations and average household monthly income (p-value=0.015) [Table 5.4].

Table 5.4. Association of personal data and use of social media recommended acne treatment (n=101)

	Yes	No	χ^2	p-value
	Frequency (%)			
Age, years				
18-25	61 (80.26)	15 (19.74)	1.609	0.205
26 and above	17 (68.00)	8 (32.00)		
Highest Educational Attainment				
Elementary/High School Graduate	21 (80.77)	5 (19.23)	0.281	0.869
College Undergraduate	33 (76.74)	10 (23.26)		
College Graduate/postgrad	24 (75.00)	8 (25.00)		
Household Average Monthly Income				
Less than 10,957	36 (92.31)	3 (7.69)	8.403	0.015*
10,957 to 21,914	19 (70.37)	8 (29.63)		
21,914 and up	23 (65.71)	12 (34.29)		
Acne Severity				
Mild	37 (74.00)	13 (26.00)	2.360	0.307
Moderate	34 (77.27)	10 (22.73)		
Severe	7 (100.00)	0		

*Statistical test used: Chi-square test of independence *significant at p<0.05*

DISCUSSION

Medicine has largely been impacted by the use of social media, both in the dissemination and delivery of medical knowledge.[15] Previous studies have shown that the internet has become an increasingly popular source of health information.[15] This is significantly seen in the field of dermatology, where skincare and acne has been a popular topic online.[16]

In this study, majority of the participants (96.67%) use social media to view content related to acne vulgaris. This was more common among women, those aged 18-25 years old, with a collage education, with an average household monthly income below PhP 10,957, diagnosed with mild to moderate acne severity. Most of the participants used social media to look for treatment options and to gain more knowledge about the disease. The most used platforms were Youtube, Facebook and Tiktok, where short videos were viewed more often and content from dermatologists were preferred. Our patient demographic and source of acne-related content were consistent with a previous study conducted by Kaliyadan et al.[10] In their study, it was also seen that majority of their participants considered dermatologist to be the most trusted medical source when it comes to acne vulgaris. Although, results of our study also showed that other than content created by dermatologist (96.33%), 57.80% also viewed content created by non-medical field influencers and celebrities. This may pose as a problem in the credibility and accuracy of the content our patients have access to. Our results also showed that

majority of our participants checked the credibility of the source, however only half of the participants consulted their dermatologist about the content seen online. This discrepancy may be due to the fact that all of the participants in this study were newly diagnosed acne patients who did not have previous access to a dermatologist.

The current study found that the self-medication practices of patients with acne vulgaris leaned more towards the use of topical products such as cleansers, sunscreen and moisturizers. These results were parallel to a local study done in another tertiary hospital wherein the most frequently used products based on social media influence were cleansers and astringent.[17] However, a negative finding with the results of our study was that more than half of the participants used topical retinoids (67.86%), a few participants self-medicated with oral isotretinoin (20.24%), oral antibiotics (3.57%), and topical antibiotics (3.57%) without consulting a physician. This poses a big risk for the patients due to the numerous side effects that may result due to improper use of these medications.

Focusing on the factors associated with the use of social media, our study shows a significant association between the use of social media with age and educational attainment. Those aged 18-25 years old and those with at least a college education were more prone to view social media content related to acne vulgaris. This may be due to the fact that acne vulgaris is more common in this age group[18] and that social media use is higher in adults aged 18-29 years old.[19] Furthermore, results of this study showed that there is significant association between self-medication practices and average household monthly income noting where an increase in self-medication practices was seen in patients belonging to the lower income bracket. No association was seen between the demographic factors and checking the credibility of the content seen or consulting with a dermatologist regarding the acne-related content.

Due to the study being focused on acne vulgaris patients in Rizal Medical Center, the conclusion of the study is not applicable to the general population of patients with acne vulgaris and only holds true among the subjects of the study. This is because the research used purposive sampling and no randomization was done. Furthermore, the use of the Global Acne Grading Scale did not capture the true acne severity of the patient because affectation of the chest and back was included in the grading scale. Another limitation of the study is the use of self-administered questionnaires, which were inherently limited by recall bias, lack of self-knowledge and misinterpretation of questions. Recommendations for future research include the use of mixed method design for data collection to be able to further assist the respondents in answering the questionnaire. Further recommendations for future researchers is to include participants under 18 years of age to be able to grasp the full extent of the use of social media by patients diagnosed with acne vulgaris.

CONCLUSION

In summary, the use of social media to access acne-related content was prevalent among young female patients, of low socioeconomic status diagnosed with mild to moderate acne severity at a tertiary hospital in the Philippines. Social media has become a well-known source to obtain different acne care regimens from both medical and non-medical posts. Patient consultations should include a thorough history of self-medication practices and source of information to better educate our patients and to be able to directly address misinformation. Lastly, it is imperative that we as dermatologist understand the importance of social media presence to be able to disseminate reliable, evidence-based medical knowledge while combating false information. The choice of the right social media platform and content are important factors in reaching your target population.

REFERENCES

1. Bolognia, J., Schaffer, J., Duncan, K. and Ko, C., 2017. Dermatology. 4th ed.
2. Mojica, W., Laconico, L., Dofitas, B. and Genuino, R., 2017. Validation of a Filipino Version of the Cardiff Acne Disability Index. Acta Medica Philippina, 51(2).
3. Ražnatović Đurović, M., Janković, J., Đurović, M., Spirić, J. and Janković, S., 2021. Adolescents' beliefs and perceptions of acne vulgaris: A cross-sectional study in Montenegrin schoolchildren. PLOS ONE, 16(6), p.e0253421.
4. Alsulaimani, H., Kokandi, A., Khawandanh, S. and Hamad, R., 2020. Severity of Acne Vulgaris: Comparison of Two Assessment Methods. Clinical, Cosmetic and Investigational Dermatology, Volume 13, pp.711-716.
5. Casuayan de Goma, J. and Devaraj, M., 2020. Recognizing Common Skin Diseases in the Philippines Using Image Processing and Machine Learning Classification. 2020 the 3rd International Conference on Computing and Big Data,.
6. Kamiński M, Tizek L, Zink A. 'Dr. Google, What Is That on My Skin?'—Internet Searches Related to Skin Problems: Google Trends Data from 2004 to 2019. International Journal of Environmental Research and Public Health. 2021;18(5):2541.
7. Braunberger T, Mounessa J, Rudningen K, Dunnick CA, Dellavalle RP. Global skin diseases on Instagram hashtags. Dermatol Online J 2017;23:13030/qt7sk410j3
8. Hollestein LM, Nijsten T. An insight into the global burden of skin diseases. J Invest Dermatol 2014;134:1499-1501
9. Aslan Kayıran, M., Karadağ, A., Alyamaç, G., Çevirgen Cemil, B., Demirseren, D., Aksoy, H., Oğuz Kılıç, S., Taş Demircan, Y., İnan Yüksel, E., Kalkan, G., Yaşar, G., Şikar Aktürk, A., Kutlu, Ö., Altıntaş Kakşi, S., Elibüyük Aksaç, S., Kaya Erdoğan, H., Kaya Özden, H., Sarıkaya Solak, S., Koska, M. and Yazıcı, S., 2021. Social media use in patients with acne vulgaris: What do patients expect from social media?. Journal of Cosmetic Dermatology, 20(8), pp.2556-2564.
10. Kaliyadan, F., Alsultan, H. and Alsaqer, H., 2021. The effect of social media on treatment options for acne vulgaris. International Journal of Medicine in Developing Countries, pp.140-145.
11. Yousaf, A., Hagen, R., Delaney, E., Davis, S. and Zinn, Z., 2020. The influence of social media on acne treatment: A cross-sectional survey. Pediatric Dermatology, 37(2), pp.301-304.
12. Kim, K., Sin, S. and He, Y., 2013. Information seeking through social media: Impact of user characteristics on social media use. Proceedings of the American Society for Information Science and Technology, 50(1), pp.1-4.
13. Collier CN, Harper JC, Cantrell WC, Wang W, Foster KW, Elewski BE. The prevalence of acne in adults 20 years and older. Journal of the American Academy of Dermatology. 2008;58(1):56–9.
14. Tsang S, Royse C, Terkawi A. Guidelines for developing, translating, and validating a questionnaire in perioperative and pain medicine. Saudi Journal of Anaesthesia. 2017;11(5):80.
15. Szeto MD, Mamo A, Afrin A, Militello M, Barber C. Social Media in dermatology and an overview of popular social media platforms. Current Dermatology Reports. 2021;10(4):97–104. doi:10.1007/s13671-021-00343-4
16. Reddy A. Skincare in social media: Analyzing prominent themes in online dermatologic discussions. Cureus. 2021; doi:10.7759/cureus.14890
17. Lagda DV, Hipolito RH, Gabriel MaTG. Factors related to treatment-seeking behavior among acne patients seen in a tertiary hospital in the Philippines: A cross-sectional study. J Phil Dermatol Soc [Internet]. 2017 [cited 2023 Aug 11]; Available from: https://www.academia.edu/37774470/Factors_related_to_treatment_seeking_behavior_among_acne_patients_seen_in_a_tertiary_hospital_in_the_Philippines_A_cross_sectional_study.
18. Lynn D, Umari T, Dellavalle R, Dunnick C. The epidemiology of acne vulgaris in late adolescence. Adolescent Health, Medicine and Therapeutics. 2016;13. doi:10.2147/ahmt.s55832
19. Hruska J, Maresova P. Use of social media platforms among adults in the United States—behavior on social media. Societies. 2020;10(1):27. doi:10.3390/soc10010027
20. Albert J, Abrigo M, Quimba F, Vizmanos J. [Internet]. Pidswebs.pids.gov.ph. 2022 [cited 17 March 2022]. Available from: https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps2022.pdf