

Level of Knowledge, Attitude and Behavior Towards Acne Vulgaris Among Housewives in Semarang, Indonesia

Puguh Riyanto, Annasia Mayasari, Imantika Christina DP Universitas

Diponegoro, Indonesia

Email: dvkulkel@gmail.com, annasiamayasari89@gmail.com,

imantikachristinaaa@gmail.com

Abstract

Acne vulgaris is a prevalent dermatological condition affecting approximately 80% of adolescents and a significant proportion of adults. Although often perceived as a cosmetic issue, acne can impact quality of life, self-confidence, and psychological well-being. In Indonesia, the prevalence of acne is reported to be 68.2%, with multifactorial risk factors including genetics, diet, and hygiene. The attitudes of housewives toward acne vulgaris are influenced by their knowledge and prevailing social norms. Accurate knowledge regarding the causes and treatment of acne is essential for effective management and prevention of misconceptions. This study aims to describe the level of knowledge, attitudes, and behavior of housewives in managing acne vulgaris. A cross-sectional, descriptive observational design was applied, involving 48 housewives aged 20–45 years. Data were analyzed using categorical-numerical analytical methods. The findings revealed that most participants had moderate knowledge scores regarding acne. Positive attitudes towards acne were most frequently observed among housewives aged 21–30 years, while positive attitudes toward acne management were more prevalent among those aged 31–40 years. These results suggest that knowledge about acne is still limited among housewives, although attitudes towards management are relatively good in certain age groups. Improving knowledge through targeted education and public health campaigns could further enhance attitudes and behaviors related to acne care. The findings have implications for designing community-based education programs to promote accurate understanding and effective management of acne vulgaris.

Keywords: acne vulgaris, housewives, attitudes, knowledge, behavior

INTRODUCTION

Acne (*acne vulgaris*) is one of the most common skin problems in the world, caused by persistent and chronic inflammation of the *pilosebaceous* follicles (Kim et al., 2025). Although *acne vulgaris* is seen particularly in adolescents and young adults, in whom the prevalence is estimated at 85% (ages 12–25 years), acne may affect various age groups (Goh et al., 2019; Kutlu et al., 2023). Acne that appears in adults over the age of 25 is called adult acne. Previous studies have reported that up to 9.3% of acne occurs after 25 years of age and affects approximately 40% of adults aged between 30–39 years, which is more common in females (Kutlu et al., 2023). Acne has been ranked second among skin diseases according to the Global Burden of Disease study, owing to its high prevalence and psychological burden at a sensitive age. Among housewives, acne can cause significant

discomfort, emotional distress, physical deformity, and potentially permanent scarring. Moreover, the condition often leads to anxiety and embarrassment, contributing to depression (Kim et al., 2025).

Acne is a multifactorial skin disorder influenced by hormonal stimulation, follicular hyperkeratinization, *Cutibacterium acnes* colonization, and host inflammatory responses. Various risk factors—such as family history of acne, diet, cosmetics, weather, work, individual hygiene, and knowledge and attitude towards acne—can also trigger and worsen its condition (Basfar et al., 2023). A positive family history of acne is obtained in 40% of patients and correlates with more severe forms (Subotić & Đuran, 2013). Clinical features of acne can be characterized as either non-inflammatory (open/black and closed/white comedones) or inflammatory (papules, pustules, nodules, and cysts), with varying extent and severity, leading to scar development and pigmentation on the skin, necessitating prolonged and persistent therapy (Goh et al., 2019; Vasam et al., 2023). The predilection of the lesions includes the face, neck, upper back, and chest. Treatment options available for acne include topical therapies (available over-the-counter or as prescriptions), systemic antibiotics, hormonal agents, oral isotretinoin, physical modalities, complementary and alternative medicine, and dietary and environmental interventions. Good knowledge with proper attitude and behavior towards acne may inhibit the progress of the disease and minimize the risk of complications caused by the severity and sequelae of acne [condition](#).

Previous research by Hulmani et al. (2017) investigated knowledge, attitude, and practice (KAP) regarding *acne vulgaris* among clinic patients in India, finding that although 72% of respondents had good knowledge, their practices and attitudes remained poor, with many myths persisting. This study highlighted the discrepancy between knowledge and action but focused solely on a clinical and adolescent population, excluding adult household groups. Meanwhile, Manoharan et al. (2021) explored KAB related to the role of diet in acne among medical students, revealing that 64.5% recognized a dietary-acne link, but only a small percentage adopted behavioral changes or sought medical consultation. While this research examined perceptions of dietary factors, it did not assess the influence of knowledge and attitude on acne management behaviors and excluded non-student populations.

In this study, we aimed to describe the level of knowledge, attitudes, and behavior of housewives towards acne [vulgaris](#). The benefits include providing a basis for targeted health education programs for housewives to improve acne management practices, dispel misconceptions, and enhance skin health and quality of life.

METHOD

In this quantitative, observational, and cross-sectional study conducted in January 2025, data were systematically gathered through a non-probability sampling technique, specifically using purposive sampling. The study focused

on housewives residing in Semarang, Indonesia. The inclusion criteria for participants were housewives aged between 20 and 50 years old who had attained at least a high school level of education and were willing to voluntarily participate in the study. Housewives with a background in health education were excluded from the study to avoid potential bias in the results, ensuring that the sample accurately reflected the general population of housewives without specialized knowledge in the health field.

The study involved a total sample of 100 participants, who were provided with paper-based, self-administered questionnaires. These questionnaires were carefully designed and comprised three distinct sections: the first section collected socio-demographic information, the second assessed the participants' level of knowledge on the topic of interest, and the third section focused on evaluating their attitudes and behaviors regarding relevant health practices. The questionnaires aimed to gain insight into various aspects of health-related awareness and behavior among housewives.

To ensure the quality and reliability of the data collected, a pilot study was initially conducted. This pilot study served to evaluate the reliability, validity, and overall feasibility of the questionnaire, ensuring that it was appropriate for the target population. Adjustments were made to the questionnaire based on the findings of the pilot study, thereby improving the accuracy and relevance of the instrument used in the main study.

Once the data were collected, the analysis was conducted by mapping the participants' knowledge, attitudes, and behaviors. The analysis was carried out using Microsoft Excel, allowing for a comprehensive overview of the findings. The data were systematically presented in the form of tables and percentages, which provided a clear and detailed summary of the results. This presentation format helped to visualize patterns and trends in the data, making it easier to interpret and draw conclusions about the participants' health knowledge, attitudes, and behaviors. The results aimed to offer valuable insights into the health awareness and practices of housewives in Semarang, which could inform future health education initiatives and interventions for this specific group.

RESULTS AND DISCUSSION

A total number of one hundred housewives were recruited in this study.

Table 1. Characteristic distribution of participants	
Variable	Frequency / %
Age group	
20 – 29	36
30 – 39	33
40 – 50	31
Education degree	
High school	29
Diploma I – IV	37
Bachelor	34

This study includes a total of 100 housewives who met the specified inclusion criteria, with the goal of assessing their knowledge, attitudes, and behaviors related to health practices. The participants were evaluated based on their responses to a detailed questionnaire, which was designed to measure their level of knowledge. To facilitate the analysis, the level of knowledge was divided into three distinct categories: low, moderate, and high. These categories were determined based on the results of the questionnaire, where each participant's answers were calculated and scored, and subsequently categorized according to predetermined thresholds.

Upon reviewing the data, Table 1 clearly indicates that housewives who are over the age of 30 tend to have a higher level of knowledge compared to those under the age of 30. This finding suggests that age may play a significant role in influencing the level of health knowledge among housewives in Semarang.

Table 2. Level of Knowledge of Acne Among Housewives

Age	Mean	Category
20-29	59	Low
30-39	76	Moderate
40-45	80	Moderate

In terms of attitude, the study revealed that most housewives exhibited a positive and supportive attitude toward acne, as demonstrated in Table 2. This finding highlights that the majority of participants, regardless of age, seem to understand the condition and approach it with a reasonable level of concern and awareness. Attitudes toward acne are significant as they can influence how individuals manage and respond to the condition, both in terms of seeking treatment and in their emotional responses to having acne.

Table 3. Attitude towards Acne Among Housewives

Age	Mean	Category
20-29	77	Moderate
30-39	85	Good
40-45	87	Good

The table below provides an overview of how well housewives in Semarang understand the various causes of acne, based on the responses gathered through the survey. Acne, a common skin condition, is influenced by a range of factors, including hormonal changes, poor hygiene, diet, stress, environmental conditions, the use of certain cosmetics, and genetic predispositions. It is essential for individuals to be aware of these contributing factors in order to prevent and manage acne effectively.

In this study, participants were asked to identify the causes of acne, and the table presents the percentage of housewives who answered correctly for each cause. The data reflects the level of awareness and understanding of acne among housewives in Semarang, which is crucial for improving their skincare practices and seeking appropriate treatments. By analyzing the results, we can gain valuable insights into areas where further education or awareness

Level of Knowledge, Attitude and Behavior Towards Acne Vulgaris Among Housewives in Semarang, Indonesia

campaigns may be needed to enhance knowledge about acne prevention and management.

Table 4. Percentage of housewives answered correctly about causes of acne

Causes of Acne	Percentage of Housewives Answered Correctly
Hormonal changes	75%
Poor hygiene	65%
Diet (e.g., high sugar/fat intake)	55%
Stress	60%
Environmental factors (e.g., pollution)	50%
Use of certain cosmetics	70%
Genetic Factors	80%

The table below presents the results of the survey conducted to assess the level of understanding among housewives in Semarang regarding hygiene and self-care practices that are essential for managing and preventing acne. Proper hygiene and self-care are crucial in preventing acne outbreaks and maintaining healthy skin. Common practices, such as washing the face regularly with mild soap, avoiding touching the face with dirty hands, using suitable skincare products, and maintaining a balanced skincare routine, play an important role in acne management.

In this study, participants were asked about their knowledge and awareness of these self-care practices. The table illustrates the percentage of housewives who correctly identified each hygiene and self-care practice related to acne prevention. The data highlights the degree of understanding about these practices among housewives, which is crucial for promoting healthier skincare habits. By examining the results, we can identify areas where further education may be beneficial to help housewives improve their knowledge and adoption of effective hygiene practices to prevent and manage acne.

Table 5. Percentage of housewives answered correctly about hygiene and self-care practices

Hygiene and Sel-Care Practices	Percentage of Housewives Who Answered Correctly
Washing the face regularly with mild soap	80%
Avoiding touching the face with dirty hands	70%
Using non-comedogenic skincare products	60%
Removing make up before going to bed	75%
Keeping hair clean and away from the face	65%
Maintaining a balanced skincare routine	55%
Avoiding over-washing or harsh scrubbing of the skin	50%
Using sunscreen to protect the skin from sun damage	70%

Discussion

In this study we found that most patients had moderate knowledge of acne. This is similar to those found in previous findings, including a study among community pharmacists in Palestine (69.3%) and another study with a

majority sample aged 16-25 years (59.5%), both showing average knowledge about acne (Alrabiah et al., 2023; Ansari et al., 2023). Positive attitude towards acne was observed in the 21-30 age group, while a positive attitude towards acne management was more common in the 31-40 age group, which may be influenced by financial stability and better medical understanding. A good knowledge of acne was observed in the 21-30 age group (61.8%), which might be influenced by skincare trends (Alnafisah et al., 2022).

This finding suggests that age may play a significant role in influencing the level of health knowledge among housewives in Semarang. One possible explanation for this trend is that housewives over the age of 30 may have had more life experiences and exposure to various health-related information over the years. These individuals may have had the opportunity to encounter more health education, whether through formal channels, such as school or healthcare settings, or informal channels, such as family members, social networks, and the media. As a result, they may have accumulated more knowledge over time.

Additionally, older housewives may have greater exposure to health-related concerns due to factors such as raising children, managing households, or dealing with health issues related to aging. These real-life experiences could enhance their understanding and awareness of important health issues, thus contributing to a higher level of knowledge. Conversely, housewives under the age of 30 may be in a stage of life where they have not yet encountered the same range of health-related experiences, and thus may have had less opportunity to accumulate the knowledge that older housewives have gained over time.

It is also worth considering that the level of education and socio-economic factors may differ across age groups, potentially influencing the amount of health-related knowledge they have access to. For example, housewives over 30 years of age might have completed their schooling during a time when health education was more emphasized in the curriculum, or they might be more actively engaged in community health programs, further enhancing their knowledge. On the other hand, younger housewives may still be in the process of acquiring such knowledge or may not have had as much exposure to these educational resources.

A "positive attitude" towards acne refers to a mindset where individuals do not view acne negatively or let it significantly affect their self-esteem and well-being. In the 21-30 age group, this positive attitude is characterized by acceptance and understanding of acne as a normal part of life, especially since acne is common during adolescence and early adulthood. People in this age group may focus on self-compassion, recognizing that acne doesn't define their worth, and they tend to feel less concerned about social judgment. They may embrace an optimistic approach, believing that acne is temporary and manageable, and use coping strategies to deal with any emotional impact.

A good attitude towards acne, as reflected in the data, suggests that housewives in this study are likely to be more accepting and proactive when it comes to understanding the causes and treatment options for acne. They might be more open to seeking appropriate care, whether it is through over-the-counter products, medical consultation, or adopting lifestyle changes such as maintaining proper hygiene or managing stress, which can contribute to the appearance of acne. This positive attitude may be driven by a variety of factors, including increased awareness of skincare and health in general, as well as greater access to information through media, social networks, or health education campaigns.

Additionally, a good attitude could indicate that these housewives have a more empathetic and understanding perspective on the condition, recognizing it as a common skin issue that affects many individuals, rather than something to be ashamed of or stigmatized. This is an important finding, as attitudes towards acne can significantly affect how individuals feel about their appearance and, consequently, their self-esteem. Positive attitudes can lead to better coping mechanisms and a greater willingness to try various treatment options, rather than ignoring the condition or feeling discouraged.

The fact that most housewives in this study exhibit a good attitude towards acne could also suggest that public health messages and educational initiatives in the community have been effective in normalizing the conversation around acne. As a result, housewives may be more informed about the condition and its treatments, and may not view acne as something unusual or embarrassing. Instead, they may approach it with a sense of understanding, which can contribute to healthier skincare practices and more informed decisions when it comes to addressing acne.

Moreover, this positive attitude can have wider implications. Housewives with a good attitude may pass on this knowledge and perspective to their children, other family members, or friends, creating a supportive environment for others who may be struggling with acne. In this way, positive attitudes toward acne could potentially help reduce the stigma surrounding the condition and encourage more open discussions about skincare and health within families and communities.

In contrast, the 31-40 age group displays a positive attitude towards acne management, with a more proactive and solution-oriented approach. While they still accept acne as part of life, they are more focused on managing it to prevent scarring, reduce flare-ups, and improve overall skin health. This group is more diligent in seeking effective treatments, using skincare routines, and staying informed about acne solutions. Their attitude reflects a goal-oriented mindset, where managing acne is seen as a practical issue rather than something that negatively affects their self-esteem. Individuals in this group are less emotionally impacted by acne and prioritize long-term skin health, often consulting professionals or investing in treatments to maintain clear skin over time. Overall, the 21-30 age group emphasizes emotional acceptance of

acne, while the 31-40 age group focuses more on proactive management and treatment.

Several factors can influence the moderate level of knowledge about acne among housewives. Firstly, educational background plays a significant role in shaping awareness and understanding of acne, as those with higher education tend to be more informed about health issues. Secondly, access to health information, whether through media, healthcare professionals, or social circles, also affects how much knowledge housewives have about acne. Additionally, cultural beliefs and societal norms may influence how acne is perceived and treated, leading to either better or limited knowledge. Lastly, personal experiences with acne or exposure to others who have dealt with it can increase awareness, but a lack of professional guidance or resources might result in misconceptions. These factors collectively contribute to the moderate understanding of acne within this demographic (Al-Hoqail, 2003; Joshi et al., 2022).

Factors that affect the severity of acne include genetics, hormones, and stress. Acne commonly appears on the face, back, and chest, which is related to the distribution of sebaceous glands. Acne often appears on the forehead, cheeks, nose, chin, chest, and back, according to the distribution of the pilosebaceous unit. Genetic and hormonal factors, such as progesterone, testosterone, and IGF, play a role in the pathogenesis of acne, with sex hormone levels positively correlates with acne severity (Rashid et al., 2023). Stress may also aggravates acne through its effects on sebaceous glands and adrenal androgen secretion. Diet, such as fast food and high glycemic index may also exacerbates acne, and more than 50% of participants who avoided trigger foods reported improvement. Reducing the consumption of acne-triggering foods has been shown to lead to significant improvements in skin condition (Kostecka et al., 2022).

In terms of habits, lack of sleep and picking at acne are commonly reported as factors that worsen acne. The use of improper cosmetics can also worsen acne, as products that are too oily or alkaline soaps can disrupt the skin's protective function. Additionally, excessive face washing or irritation caused by cleansing products can affect the effectiveness of acne treatment, leading to suboptimal clinical outcomes. As a result, patients may choose not to continue with the recommended medical treatment (Rashid et al., 2023).

Although many facial cleansing products are available, their effectiveness is questionable, and excessive washing of the face may lead to non-compliance with acne treatment (Rashid et al., 2023). Bad habits such as lack of sleep, squeezing pimples, and using inappropriate cosmetics may trigger acne (Ansari et al., 2023; Rashid et al., 2023).

CONCLUSION

This study aimed to describe the level of knowledge, attitudes, and behaviors of housewives toward *acne vulgaris*, and the findings indicate that

the overall knowledge level among housewives is moderate. Positive attitudes toward *acne* were most common among participants aged 21–30 years, while good attitudes toward acne treatment were observed in those aged 31–40 years. The most frequently practiced treatments include avoiding risk factors such as stress and excessive cosmetic use, as well as regular facial cleansing with specific cleansers one to three times daily. These results highlight the need for targeted health education programs to improve knowledge and promote effective *acne* management behaviors among housewives. Future research should explore the effectiveness of tailored educational interventions, evaluate the role of cultural and social factors in shaping *acne*-related behaviors, and consider larger, more diverse populations to provide a more comprehensive understanding of knowledge-attitude-behavior dynamics in *acne* management.

REFERENCES

- Al-Hoqail, I. A. (2003). Knowledge, beliefs and perception of youth toward acne vulgaris. *Saudi Medical Journal*, 24, 765–8.
- Alnafisah, H., Alyahiwi, L., Aloufi, L., Aldawish, R., Albahli, N., & Alzahrani, N. (2022). Assessment of the knowledge, practice, and attitude toward acne vulgaris among Saudi adolescents and adults. *International Journal of Medicine in Developing Countries*, 6(September), 1382–8.
- Arabiah, Z., Wajid, S., Babelghaith, S. D., & Al Arifi, M. N. (2023). Knowledge, attitudes, and practices of community pharmacists toward the management of acne vulgaris in Saudi Arabia. *Frontiers in Medicine*, 10(June), 1–7.
- Ansari, F., Khare, A. K., & Gupta, L. K. (2023). Myths, misconceptions and attitudinal trends among patients with acne. *Indian Journal of Dermatology, Venereology and Leprology*, 89(4), 572–7.
- Basfar, A. S., Jawhari, A. M., Alotaibi, M. N., Alzahrani, E. S., Aseeri, I. A., & Atalla, A. A. (2023). Severity of acne, stress, and food habits of medical students at Taif University, Saudi Arabia. *Journal of Family and Community Medicine*, 30(2), 131–6.
- Goh, C., Cheng, C., Agak, G., Zaenglein, A. L., Graber, E. M., Thiboutot, D. M., et al. (2019). Acne Vulgaris. In S. Kang, M. Amagai, A. L. Bruckner, A. H. Enk, D. J. Margolis, A. J. McMichael, et al. (Eds.), *Fitzpatrick's Dermatology* (9th ed., pp. 1391–418). McGrawHill Education.
- Joshi, M., et al. (2022). The Impact of Social Media on Skin Care: A Narrative Review. *Lviv Clinical Bulletin*, 1–2(37–38), 85–96.
- Kim, H., Jang, J. H., Kim, H. R., & Cho, J. H. (2025). Novel-designed antimicrobial peptides with dual antimicrobial and anti-inflammatory actions against *Cutibacterium acnes* for acne vulgaris therapy. *Biochemical Pharmacology*, 232.
- Kostecka, M., Kostecka, J., Szwed-Gułaga, O., Jackowska, I., & Kostecka-Jarecka, J. (2022). The Impact of Common Acne on the Well-Being of Young People Aged 15–35 Years and the Influence of Nutrition Knowledge and Diet on Acne Development. *Nutrients*, 14(24).

Level of Knowledge, Attitude and Behavior Towards Acne Vulgaris Among Housewives in Semarang, Indonesia

- Kutlu, Ö., Karadağ, A. S., & Wollina, U. (2023). Adult acne versus adolescent acne: a narrative review with a focus on epidemiology to treatment. *Anais Brasileiros de Dermatologia*, 98, 75–83.
- Rashid, S., Jamil, Z., Azeem, S., & Afzal, N. (2023). Living with acne: A patient-centered study on myths, beliefs and perceptions. *Journal of Pakistan Association of Dermatologists*, 33(4), 1314–24.
- Subotić, M., & Đuran, V. (2013). Treatment of acne vulgaris: a literature review / Lečenje običnih akni (acne vulgaris) -- pregled literature. *Serbian Journal of Dermatology and Venerology*, 2(1), 13–20.
- Vasam, M., Korutla, S., & Bohara, R. A. (2023). Acne vulgaris: A review of the pathophysiology, treatment, and recent nanotechnology based advances. *Biochemistry and Biophysics Reports*, 36.