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THEORY-BASED STUDIES

Stretch marks knowledge and attitudes among university students in Vietnam: a study with the Knowledge, Attitude, and Practice (KAP) model

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Abstract

Stretch marks are dermal lesions that appear as linear scars, often affecting women's aesthetics and body image. Although they are a prevalent issue in dermatology, stretch marks have not received much attention from the community, especially in healthcare education. Understanding knowledge and attitudes about stretch marks can reveal public perceptions and misinformation that affect self-esteem and healthcare choices. This study aimed to assess the knowledge and attitudes about stretch marks among university students in Ho Chi Minh City, Vietnam. A descriptive cross-sectional study was conducted among 146 midwife students from February to June 2024 using convenience sampling. Data were collected using a validated self-reported questionnaire consisting of three sections: (1) general information, (2) knowledge of stretch marks, and (3) attitudes toward stretch marks. Descriptive statistics consist of frequency, percentage, mean, standard deviation and chi-square test were used to describe the variables of interests and find the correlation between knowledge and attitude toward stretch marks. The statistical significance test was set up at 0.05. The findings revealed that 83.6% of midwifery students had correct knowledge of stretch marks and nearly half of students had positive attitude about stretch marks. However, there was no statistically significant correlation between knowledge of stretch mark and attitude about stretch marks ($p > 0.05$). The study highlights the role of community nurses in providing health education on stretch marks to university students. Educational interventions can help raise awareness, reduce stigma, promote healthier perceptions and behaviors. Subsequent studies ought to examine a more extensive and more varied demographic to improve the applicability of the results.

Keywords: Attitude, dermal lesion, knowledge, stretch marks, midwife student

Introduction

Stretch marks are skin lesions that result from the stretching of the dermis (Mendes et al., 2022). Stretch marks affect both sexes, but are more common in women than in men, with a higher prevalence among younger individuals (Punj et al., 2022). The clinical condition occurs due to the breakdown of collagen and elastin fibers, leading to the formation of stretch marks on the skin's surface (Elsedfy, 2020). This mechanism involves stretching of the skin-commonly because of weight gain, pregnancy, or hormonal changes-combined with biochemical alterations that impair dermal integrity (Huang et al., 2022). Moreover, elevated levels of glucocorticoids, such as cortisol, reduce fibroblast activity, leading to decreased synthesis of collagen types I and III and elastin fibers while simultaneously increasing their degradation by matrix metalloproteinases (Wollina & Goldman, 2017). Over time, these marks fade to become lighter **(Figure 1)**, thinner scars as the blood vessels decrease and the skin's deeper layer gets more fibrous and less organized (Ud-Din et al., 2015). These marks often show up on the chest, back, armpits, stomach, buttocks, and thighs that bothering women (Alageel et al., 2021). Nowadays, the exigency of beauty is increasing in terms of aesthetic awareness, postpartum women seek dermatologists for stretch mark treatments (Hoefel et al., 2020). Treatments for stretch marks have advanced considerably, but permanently eliminating them remains a persistent challenge (Lokhande & Mysore, 2019).

A study in Saudi Arabia documented that among 512 participants aged 15-25, 54% had stretch marks, with the abdomen being the most area affected (Alageel et al., 2021). Stretch marks disturb in adulthood and during pregnancy in some population (Dai et al., 2021). A study in Vietnam documented that 84% of pregnant women developed stretch marks

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in the time (Vo et al., 2019). Various treatments for stretch marks, such as topical therapies and laser treatments, are available; however, none have demonstrated consistent or fully effective results (Mendes et al., 2022). While these treatment options are discussed globally, access and awareness vary significantly across countries. In Vietnam, advanced options like laser therapy are not widely available, and individuals primarily depend on topical creams or traditional remedies. Nevertheless, there is limited public understanding of the efficacy, safety, and limitations of these treatments. Given the current gaps in knowledge and the lack of comprehensive data on perceptions and attitudes toward stretch marks in Vietnam, an observational study using the Knowledge, Attitudes, and Practice (KAP) model is a necessary first step.

Figure 1. Stretch marks (Documented by authors).

Stretch marks can significantly impact a person's appearance and confidence in their daily life. Appearing on highly visible areas such as the abdomen, thighs, breasts, and hips, they can negatively affect body image and self-esteem (Osman et al., 2015). Many individuals view stretch marks as disfiguring, which can lead to emotional distress, social withdrawal, and reduced confidence in intimate and public settings (Karhade et al., 2021). Societal beauty standards and media portrayals that idealize flawless skin can further worsen the emotional impact of stretch marks which contributing to stigma around natural skin changes (Merino et al., 2024). Though a common consequence of growth or hormonal changes, stretch marks can evoke feelings of shame or embarrassment in postpartum women and adolescents (Aşkın et al., 2021; Kordi et al., 2016).

However, stretch marks' emotional impact is often overlooked in many studies particularly among midwifery student in Vietnam. Although stretch marks are dermatological condition, their psychological and emotional impacts are often underrepresented in existing literature, particularly among specific populations such as midwifery students in Vietnam. In recent years, the prevalence and management of striae have received increasing attention within both clinical and public health contexts in Vietnam. A cross-sectional study reported that approximately 65% of Vietnamese pregnant women developed striae gravidarum, with a higher prevalence among primigravida, individuals with a positive family history, and those experiencing significant gestational weight gain (Nguyen et al., 2021). Nguyen's study is consistent with global trends but also highlight region-specific challenges in clinical practice. The predominance of Fitzpatrick skin types III to IV in the Vietnamese population is associated with a greater risk of post-inflammatory hyperpigmentation, which may intensify the cosmetic concerns associated with striae and subsequently influence treatment choices (Tran & Hoang, 2019). Although therapeutic options such as topical retinoids, microdermabrasion, and fractional laser therapy have shown varying degrees of efficacy, their availability remains largely confined to urban medical facilities. The disparity underscores the need to expand dermatological services and public health education, particularly in rural areas to address both the physical and psychosocial consequences of striae.

In this context, investigating the knowledge and attitudes is essential, as these factors influence health-seeking behavior and body image. This is particularly important in addressing misinformation, reducing stigma, and promoting a positive body image among the student population. Therefore, there is a need for more awareness, education, and support in the population. The present study holds significant importance for both Vietnam and the worldwide community. For Vietnam, understanding the knowledge and attitudes of university students can inform the development of health education campaigns. These campaigns can aim to improve accurate knowledge about stretch marks, challenge negative stigmas associated with them, and promote body positivity among young adults. Furthermore, the integration of the KAP model offers a suitable theoretical framework, particularly in understanding the cognitive and behavioral dimensions surrounding stretch marks. Moreover, it provides a perspective to explore how midwifery students in Vietnam perceive and respond to stretch marks. The KAP model emerged in the 1950s and 1960s, primarily through public health and family planning research supported by organizations such as the World Health Organization (WHO) and the United States Agency for International Development (USAID), although it is often influenced by Everett M. Rogers'

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Diffusion of Innovations theory (Rogers, 1962). While no single scholar is credited as the sole founder of the KAP model, it evolved from empirical applications in health behavior research, focusing on the assumption that knowledge acquisition leads to attitude formation, which subsequently influences practices. The model is structured around three parameters: knowledge (what people know about a topic), attitudes (how they feel about it), and practices (how they behave in response to it) (Launiala, 2009).

Numerous studies have utilized the KAP framework to explore health-related behaviors. For example, a study applied the KAP model to investigate public responses to COVID-19 in China and found that higher knowledge levels were positively associated with preventive behaviors (Zhong et al., 2020). Similarly, a previous study used the KAP model to assess maternal health knowledge and practices in rural Uganda, noting that although awareness of obstetric danger signs was moderate, behavioral response remained insufficient (Kabakyenga et al., 2012). However, a key limitation of KAP-based studies is their reliance on self-reported data, which may be influenced by social desirability bias or recall inaccuracies. Moreover, the linear progression assumed by the model—from knowledge to attitudes to practices—may oversimplify complex behavioral processes influenced by cultural, structural, and psychological variables. With these limitations in mind, the KAP model remains a practical and widely accepted approach in behavioral health research. The theory posits that knowledge forms the foundation for developing appropriate attitudes, which subsequently drive behavioral change. The KAP model facilitates a deeper understanding of how cognitive and emotional factors influence health-related behaviors by evaluating knowledge and attitudes (Launiala, 2009). Applying the KAP model in a Vietnamese context offers a comparative perspective that can highlight cultural variations in knowledge, attitudes, and practices related to dermatological issue. The findings of the study can guide community nurses in Vietnam in providing more culturally sensitive and effective counseling to individuals with stretch marks. Additionally, this study contributes to the limited body of research on perceptions of stretch marks in non-Western populations. The cross-cultural understanding is crucial for healthcare providers and researchers worldwide in developing appropriate interventions addressing body image concerns.

Method

The study was a cross-sectional descriptive design completed at the University of Medicine and Pharmacy in Ho Chi Minh, Vietnam (UMP). The design was chosen due to it is non-invasive, easy to conduct, and does not affect the participants' well-being. This design allows to collect data at a single point of time, which is appropriate for assessing knowledge and attitudes. The study was conducted at a university where the authors was enrolled and employed, which facilitated convenient access to the target population. The study population comprised all midwifery students enrolled in the 2020 and 2021 academic cohorts, totaling 229 students. These cohorts correspond to students in their third and fourth academic years, respectively. The sample for this study consisted of midwifery students who met the inclusion criteria, including students from the 2020 and 2021 cohorts studying at the Faculty of Nursing and Medical Technology, who had completed their antenatal care internship at the hospital, and who agreed to participate as experienced stretch marks. This study focused on the 2020 and 2021 cohorts because they were undergoing hospital internships at the time that providing them with direct exposure to pregnant women and firsthand experience with stretch marks. This hands-on experience made their perceptions especially relevant for our research. Students who did not complete the online survey or who were suspended from school were excluded from this study.

The sample size was calculated using Yamane's formula (1967) refers to n = (N / 1+N*e2) where N represents the population size and e denotes the level of precision (Akosua et al., 2021). Therefore, the total of sample was 146 students. The research instruments was self-reported questionnaire was adapted from previous study (Tengku & Jusuf, 2022). Tengku's study provided a set of survey questions that are suitable and adaptable to the Vietnamese context, making it a relevant reference for study instrument. The tool consists of three parts. Part 1: general information about age, academic year, body mass index (BMI), self-history of stretch marks, and family history involved in stretch marks. Part 2: knowledge of stretch marks consisting of 15 questions was modified from Tengku's study to ask the students about the knowledge of stretch marks, the answer with two options: true and false; the score for correct answer was 1 point and incorrect answer was 0 point. The score was range from 0 to 15 points and classified into two groups: good knowledge (> 10 points) and low knowledge (< 10 points). Part 3: Attitude about stretch marks was modified from Tengku's study to ask attitude of students about stretch marks consisting of 15 questions with 4-point rating scale ranging from 1 (totally disagree) to 4 (strongly agree). The scores ranged from 15 to 60 points and classified into two groups: positive attitude (> 45 points) and negative attitude (< 45 points).

The original questionnaire was developed in English (Tengku & Jusuf, 2022) and was translated into Vietnamese language through back-translation process with the permission from the authors (WHO, 2023). The study used WHO

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guideline for the back-translation process to ensure accuracy and cultural relevance of the questionnaire. The content validity of knowledge scale and attitude scale was tested with six experts. These experts, comprising professionals in dermatology, obstetrics and gynecology, and nursing lecturers, were selected based on their clinical experience about skin condition and body image. Each expert independently reviewed the instrument items for relevance, clarity, and comprehensiveness in capturing the aspects of knowledge and attitude about stretch marks. Their feedback was used to refine the wording and structure of the items to ensure that the content reflect the construct of interest. The content validity index (CVI) was calculated to quantify agreement among the experts and the item-content validity index (I-CVI) was 0.85 and 0.87, respectively. The reliability of the scales was checked with 30 students. The knowledge of stretch marks scale had a reliability of 0.72 (KR-20). KR-20 refers to Kuder-Richardson Formula 20, which is suitable to assess the internal consistency for dichotomous (yes/no or true/false) items (Foster, 2021). The attitude about stretches marks scale had a reliability of 0.88 (Cronbach's Alpha). The use of the KAP model aligns well with the structure of this instrument. The KAP framework emphasizes the sequential relationship between what individuals know (knowledge), how they feel (attitudes), and what they do (practices). This study focused on the first two domains, knowledge and attitude, both of which are directly measured through validated and reliable instruments. Quantifying these components allows for a structured assessment consistent with the theoretical underpinnings of the KAP model. Moreover, this approach supports its application in examining health beliefs and behaviors among midwifery students.

Data collection was conducted via an online survey between February and June 2024, following a series of structured steps **(Figure 2)**. The research team collected the data directly. No research assistants were involved. First, the researcher developed the online questionnaire using Google Forms. Second, potential participants were identified through coordination with academic advisors, from whom permission was obtained to access the students' contact information. Third, upon receiving consent from participants, the researchers distributed the questionnaire link via email and Zalo application. Zalo application is Vietnamese multi-functional mobile application that combines messaging, calling, and social networking features. Participants were given a period of one week to complete the survey. Fourth, if responses were not received within the specified timeframe, follow-up reminder emails or message were sent to encourage participation. Finally, all collected data were coded, assigned identification numbers, and entered into IBM Statistical Package for the Social Sciences (SPSS) version 20.0 for analysis. Descriptive statistics including frequency, percentage, mean, standard deviation were used to describe the variables. Inferential statistics including Chi-square test, Fisher's exact test was used to assess the relationship between variables. A statistical significance level was set up at $p < 0.05$. All participants were informed about the study and the participation was voluntary. The participants were informed their right to withdrawn from this study at any time without consequences; if they agree to participate in the study, they click the box "accept" in the google form prior to answer the questionnaire. This study was approved by the Ethics Council of UMP (No. 230/HĐĐĐ-ĐHYD dated January 29, 2024).

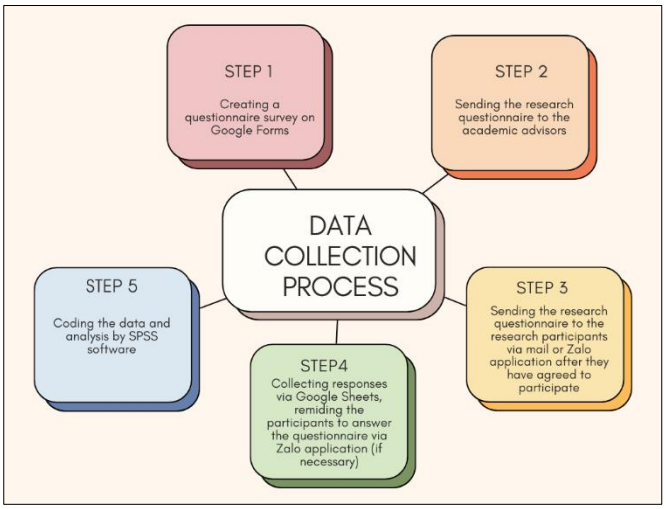

Figure 2. Data collection process (Documented by authors).

Results

A total of 146 midwife students responded to questionnaire. The finding documented that participants were between 21 to 24 years old (M=21.6, SD=0.7), with the highest proportion (48.6%) of 21 years old. Among the 146 students, 47.9% were in third year and 52.1% were in fourth year. The majority of students (66.4%) had a normal BMI. More than half of students reported self-history stretch marks (54.1%) and 52.1% of them reported a family history of stretch marks **(Table 1)**. Regarding the knowledge of stretch mark, the study highlighted that 95.2% of participants were aware of stretch marks, 90.4% of them knew that the stretch marks persist on the skin. While 80.1% of students knew stretch marks were not dangerous, the rest 19.9% thought it was dangerous. Participants recognized the two stages of stretch marks: red (Striae rubra) and white (Striae alba), with 78.8% identifying reddish marks and 84.2% recognizing grayish-white ones. In addition, 67.8% of students knew stretch marks could change color and most of the participants knew the location of stretch marks with the abdomen (83.6%), buttocks (93.2%), thighs (87.7%), and arms (74.7%). Almost all students (nearly

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100%) knew that both men and women can get stretch marks. Most (99.3%) also knew that pregnancy and weight gain greatly increase the risk of getting stretch marks. More than half of participants did not know the use of contraceptive pills increase the risk of stretch marks (61.6%) **(Table 2)**.

The study also emphasized that 65.8% of students believe stretch marks affect appearance, and 80.9% think they impact aesthetic beauty. Most students (84.3%) were aware of having stretch marks, and nearly 70% frequently check them in the mirror. However, 68.5% of them did not feel that those without stretch marks are luckier, and 67.2% believed stretch marks do not affect self-esteem. Response to stretch marks vary, with 52.1% not feeling sad and 47.9% feeling sad. Most students (57.6%) do not try to cover their stretch marks, and 69.2% do not hide them from others. However, 84.3% seek information to limit their appearance, 87.7% maintain an ideal weight, and 78.8% use body lotion. Regarding treatment, 80.1% seek medical advice, 79.5% try home remedies, and 74% explore other methods if initial treatments fail **(Table 3)**. The study revealed that students who had good knowledge was 83.6% and positive attitude about stretch marks was 43.8% and negative attitude was 56.2% **(Table 4)**. The finding presented that there was no correlation between knowledge of stretch marks and attitude about stretch marks (X^2=0.67, p = 0.5) **(Table 5)**.

Table 1. General characteristics of participants.

Variables	Frequency (n)	Percentage (%)
Age	M=21.6; SD=0.7; Min=21; Max=24	
21	71	48.6
22	64	43.8
23	8	5.5
24	3	2.1
Academic year		
Third year	70	47.9
Fourth year	76	52.1
Body Mass Index (BMI)		
Underweight (BMI < 18.5 kg/m^2)	28	19.1
Normal (BMI 18.5–24.9 kg/m^2)	97	66.4
Overweight (BMI 25.0–29.9 kg/m^2)	17	11.6
Obesity (BMI ≥ 30 kg/m^2)	4	2.7
Self-history of stretch marks		
Yes	79	54.1
No	67	45.9
Family history of stretch marks		
Yes	76	52.1
No	70	47.1

Discussion

The study highlighted that the mean age of participants was 21 years old, consistent with previous study (Tengku & Jusuf, 2022). In contrast, an investigation reported a higher age range (26-35 years) likely due to different study populations (Alharbi et al., 2023). Age is an important demographic factor that can influence health-related perceptions and behaviors. Younger individuals, such as university students, may have less direct experience with conditions like stretch marks compared to older adults, who may encounter them during pregnancy or significant weight changes. This variation in lived experience could influence attitudes, perceived relevance, and engagement with the topic. A study of women in the general community reported similar differences (Akinboro et al., 2021). The Akinboro's study suggested that educational interventions should be provided to specific age groups to optimize effectiveness. The current study, which focused on Vietnamese midwifery students, reflects the demographic characteristics of students in health-related programs in Vietnam. These students are in their third and fourth years of training and are therefore likely to have developed a foundational understanding of dermatological and reproductive health issues, including striae. The university context also provides a controlled learning environment that may shape uniform levels of exposure and awareness.

The recent study highlighted that family history of stretch marks was reported by 52.1% of participants that consistent with other study (Kasielska-Trojan et al., 2014). The presence of a family history may influence both attitudes

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and behaviors. Individuals who have observed stretch marks in close relatives may be more likely to view them as a normal or expected occurrence, reducing associated stigma. Conversely, those with familial exposure might also show greater interest in prevention or treatment strategies. Understanding the role of familial influence can help inform educational messages that address both genetic predisposition and modifiable risk factors. Most participants demonstrated good knowledge about stretch marks. However, this finding was lower than reported in a study (Tengku & Jusuf, 2022), but higher than the results of a study (Alharbi et al., 2023). The variation in knowledge levels between studies may be attributed to differences in target populations, with our study specifically targeting medical students who have more exposure to dermatological conditions, potentially influencing their knowledge. These variations may be attributed to differences in educational backgrounds, with medical students in this study likely having greater exposure to dermatological content compared to participants from non-medical or general populations. Additional factors, such as access to healthcare information, curriculum content, and sociocultural attitudes toward body image, may also contribute to these differences. Most participants in this study demonstrated a good understanding of stretch marks and correctly identifying prolonged skin stretching as a cause and recognizing that they are not harmful. This finding aligns with the results of a study (Korgavkar & Wang, 2015). This good understanding among students has practical implications for public health. For instance, increasing awareness and reducing misconceptions about stretch marks that help combat body image concerns among young women. Moreover, informed students are more likely to educate others and provide empathetic care in their future professional roles. In this context, community nurses play a crucial role in extending health education beyond clinical settings. They serve as frontline educators, particularly in rural or underserved areas, helping to address misconceptions, promote body positivity, and guide the public on evidence-based preventive and management strategies for skin conditions like striae.

Table 2. Knowledge of stretch marks.

Contents	Correct n (%)	Incorrect n (%)
Stretch marks are common issue on the skin	139 (95.2)	7 (4.8)
By definition, stretch marks are streaks on the skin caused by strectching	132 (90.4)	14 (9.6)
Stretch marks are not dangerous	117 (80.1)	29 (19.9)
Based on color, there are reddish stretch marks	115 (78.8)	31 (21.2)
Based on color, there are grayish-white stretch marks	123 (84.2)	23 (15.8)
The abdomen is location of stretch marks	122 (83.6)	24 (16.4)
The thighs are the location of stretch marks.	136 (93.2)	10 (6.8)
The buttocks are the location stretch marks	128 (87.7)	18 (12.3)
The arms are the location stretch marks	109 (74.7)	37 (25.3)
Stretch marks can occur in men	142 (97.3)	4 (2.7)
Stretch marks can occur in women	145 (99.3)	1 (0.7)
Pregnancy increases the risk of stretch marks	145 (99.3)	1 (0.7)
Stretch marks have a relationship with weight gain	145 (99.3)	1 (0.7)
The medications and birth control pills increase the risk of stretch marks	56 (38.4)	90 (61.6)
Stretch marks can be discolored	99 (67.8)	47 (32.2)

The majority of participants appropriately identified stretch mark locations and acknowledged both genders are affected, in consistent with previous studies (Alageel et al., 2021). This level of awareness has important clinical implications, particularly for future healthcare providers. Understanding about stretch marks are not limited to a specific gender promotes more inclusive and nonjudgmental clinical interactions. It also enables practitioners to provide comprehensive education and empathetic counseling to patients of all genders, thereby enhancing patient trust, reducing stigma, and encouraging timely discussion of skin health concerns. The participants know that pregnancy and weight gain were recognized as risk factors of stretch marks. However, this did not surprise them, as they were already familiar with the pathophysiology of stretch marks through their experience in completing antenatal care practices at the hospital. The role of community nurses is vital in informing and assisting pregnant women about stretch marks. They can provide information on prevention, treatment, and management options, as well as offer emotional support to deal with concerns and anxiety. Hence, community nurses can help promote positive body image and self-esteem to enhance overall women well-being (Tort-Nasarre et al., 2023). They can also refer patients to relevant resources and specialists

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when needed for warranting comprehensive care (Sandhu et al., 2022). In this context, community nurses can connect hospital care with community support to provide continuous care and empower individuals to manage their skin health (Cowdell, 2019). Most participants in the study held negative attitudes towards stretch marks, consistent with findings from a study (Tengku & Yusuf, 2022). However, the prevalence of negative attitudes was lower than reported in a study (Karhade et al., 2021). The discrepancy may be attributed to differences in study populations. Karhade's study focused on pregnant women, who may be more accepting of bodily changes, including stretch marks, during pregnancy, potentially leading to a higher prevalence of positive attitudes towards stretch marks. In the Vietnamese context, negative attitudes toward stretch marks can contribute to body dissatisfaction, reduced self-esteem, and psychological distress, particularly among young women. This stigma may also discourage open discussion of dermatological concerns, limiting opportunities for early education, prevention, or treatment. Given the influence of future healthcare providers on patient perspectives, addressing such attitudes through medical education and public health initiatives is essential to fostering body-positive care environments and reducing appearance-related stigma in clinical settings.

Table 3. Attitude about stretch marks.

Statements	Strongly disagree n (%)	Disagree n (%)	Agree n (%)	Strongly agree n (%)
Stretch marks disrupt appearance	11 (7.5%)	39 (26.7%)	75 (51.4%)	21 (14.4%)
Stretch marks can ruin your aesthetic value	13 (8.9%)	15 (10.3%)	42 (28.8%)	76 (52.1%)
If you had stretch marks, you are worried	6 (4.1%)	17 (11.6%)	69 (47.3%)	54 (37.0%)
You often look at your stretch marks in the mirror	11 (7.5%)	34 (23.3%)	55 (37.7%)	46 (31.5%)
Even though you have stretch marks, you don't feel like others who don't have them are luckier than you	12 (8.2%)	34 (23.3%)	61 (41.8%)	39 (26.7%)
Even if you have stretch marks, your confidence doesn't suffer	13 (8.9%)	35 (24.0%)	62 (42.5%)	36 (24.7%)
You don't feel bad when you see stretch marks on your body	24 (16.4%)	46 (31.5%)	53 (36.3%)	23 (15.8%)
You don't try to cover up stretch marks on your body	20 (13.7%)	42 (28.8%)	62 (42.5%)	22 (15.1%)
You don't try to keep it a secret that you have stretch marks to the people around you	11 (7.5%)	34 (23.3%)	69 (47.3%)	32 (21.9%)
You will be looking for information on things to avoid in order to prevent stretch marks (e.g. obesity, sudden weight loss)	4 (2.7%)	19 (13.0%)	61 (41.8%)	62 (42.5%)
You try to maintain your ideal weight to prevent stretch marks	3 (2.1%)	15 (10.2%)	63 (43.2%)	65 (44.5%)
You try to use body care creams to prevent stretch marks from occurring	11 (7.5%)	20 (13.7%)	62 (42.5%)	53 (36.3%)
If you have stretch marks, you will consult a dermatologist to find the best treatment	7 (4.8%)	22 (15.1%)	65 (44.5%)	52 (35.6%)
You will find out about alternative remedies to treat stretch marks (e.g. aloe vera, cocoa butter, coconut oil)	8 (5.5%)	22 (15.1%)	67 (45.9%)	49 (33.6%)
If a stretch mark treatment was ineffective, you would continue searching for another solution to improve them	9 (6.2%)	29 (19.8%)	63 (43.2%)	45 (30.8%)

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Most participants perceived stretch marks as affecting appearance, aligning with findings from study (Karhade et al., 2021). Interestingly, even with negative attitudes towards stretch marks, participants actively sought treatment options that consistent with previous research (Yamaguchi et al., 2014). As future healthcare providers, students pursuing midwifery can be quite helpful in resolving the issues of people with stretch marks. Moreover, given that participants actively sought treatment options despite negative attitudes, midwifery students can provide empathetic support, educate patients about available treatments, and offer guidance on managing stretch marks. They can empower individuals to make informed decisions about their care and promote positive body image. Midwifery students can also contribute to reducing stigma around stretch marks and encouraging a supportive environment for individuals to discuss their concerns. Regarding the role of the Vietnam government, there appears to be no specific national program or policy directly addressing the 'stretch mark phenomenon' as a distinct public health issue. However, the government's broader initiatives focusing on maternal and reproductive health, as well as general well-being and cosmetic services regulation, indirectly touch upon aspects relevant to stretch marks. Public hospitals and healthcare centers offer dermatological services where individuals can seek professional advice and treatment for various skin conditions, including stretch marks. Furthermore, regulations on the advertising and provision of cosmetic treatments would also apply to procedures aimed at reducing the appearance of stretch marks. In Vietnam, complementary and alternative therapies are utilized for various health and cosmetic concerns. For stretch marks, some individuals may explore traditional remedies such as the topical application of natural oils (e.g., coconut oil, olive oil), herbal preparations, or traditional massage techniques. However, the scientific evidence supporting the efficacy of these complementary therapies for stretch marks in the Vietnamese context is limited, and their use is often based on anecdotal evidence and cultural practices. It is important for healthcare providers, including future midwives, to be aware of these practices while emphasizing evidence-based treatments and ensuring patient safety.

Table 4. Level of knowledge and attitude.

Variables	Frequency (n)	Percentage (%)
Knowledge of stretch mark		
Good knowledge	122	83.6
Low knowledge	24	16.4
Attitude about stretch marks		
Positive attitude	64	43.8
Negative attitude	82	56.2

Table 5. Correlation analysis.

Variables	Knowledge of stretch marks		X^2	*p*
	Good knowledge n (%)	Low knowledge n (%)		
Attitude about stretch marks				
Positive attitude	55 (85.9)	9 (14.1)	0.67	0.5
Negative attitude	67 (83.6)	15 (18.3)		

The belief that greater understanding leads to more positive attitudes is widely proved in the literature (Tengku & Jusuf, 2022; Karhade et al., 2021). However, this study presented that there was no correlation between knowledge and attitude about stretch marks. The absence of a correlation between knowledge and attitude regarding stretch marks can be interpreted through the lens of the KAP theory model. While the model posits that knowledge is foundational for shaping attitudes, it also acknowledges that the transition from knowledge to attitude is not automatic and can be influenced by various mediating factors such as personal experience, cultural beliefs, emotional responses, and social norms (Launiala, 2009). In the context of stretch marks, students may possess factual knowledge about the condition but still hold negative or stigmatizing attitudes due to societal beauty standards or internalized perceptions of body image. This disconnect suggests that knowledge alone may be insufficient to influence attitudes unless accompanied by critical reflection, emotional engagement, and supportive social environments (Kaplan et al., 2021). Thus, interventions aiming to improve attitudes toward stretch marks must go beyond information dissemination (Shen et al., 2024). The approach should address the broader psychosocial and cultural factors that shape students' beliefs and perceptions (Duraku et al., 2023). The findings also had meaningful implications for nursing students in terms of body image, self-

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Figure 3. Stretch marks (Documented by authors).

esteem, and health-seeking behaviors related to stretch marks **(Figure 3)**. As nursing students often experience similar stressors, including academic pressure, long clinical hours, and bodily changes due to lifestyle or pregnancy. Nursing students should be encouraged to approach stretch marks as dermatological condition, not a defect, and seek evidence-based strategies for management if they experience discomfort or distress. Furthermore, integrating education about stretch marks into curricula could promote greater body positivity and empathy. This would enable future healthcare providers to provide more supportive care to patients experiencing similar concerns. Regarding the specific fact of stretch marks in nursing students in Vietnam, there appears to be a lack of dedicated research investigating the prevalence, characteristics, or psychosocial impact of stretch marks within this specific population. While studies have explored the prevalence of stretch marks in broader populations in Vietnam, particularly in pregnant women, and research exists on body image and self-esteem among Vietnamese students, no study has specifically focused on the intersection of these factors in nursing students and their experiences with stretch marks.

This study is notable for being the first in Vietnam to assess university students' knowledge and attitudes about stretch marks, utilizing the KAP model to guide the research process. However, several limitations exist. The KAP model might oversimplify the complex psychosocial factors influencing perceptions of stretch marks. The convenience sampling and limited sample size from a single university may affect the generalizability of the findings. Additionally, the self-reported questionnaire might introduce response bias, although efforts were made to enhance validity through clear instructions, neutral language, anonymity, and confidentiality. With these efforts in place, the study may not fully explore underlying reasons for students' attitudes and practices, potentially overlooking cultural or socioeconomic factors. Furthermore, the cross-sectional design limits the assessment of changes in knowledge, attitudes, and practices over time, highlighting areas for future research to build upon these findings.

Conclusion

The study revealed that midwifery students in Vietnam possess good knowledge about stretch marks. However, they also tend to have somewhat negative attitudes towards them, indicating a clear need for focused educational efforts. Simply giving future healthcare professionals facts isn't enough; it's vital to actively foster positive views on stretch marks. Their attitudes will definitely influence the care and advice they offer to women struggling with how stretch marks affect their body image. Community nurses are uniquely positioned to play a vital role in this endeavor. For example, provide health education initiatives that can normalize the occurrence of stretch marks, dispel misconceptions, and promote messages of self-acceptance and body positivity within the community. Furthermore, community nurses can collaborate with midwifery education programs to advocate for the integration of attitudinal training into the curriculum and contribute valuable real-world insights. This direct contact also helps guide future research focused on creating a more supportive and understanding environment for students dealing with these body changes.

Author's declaration

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Authors' insight

Key points

- The study investigates university students in Vietnam that suggesting the finding is relevant to this particular population and cultural context.
- The research depicted the Vietnamese university students know about stretch marks and what their opinions or feelings are towards them.
- The study utilizes the KAP model that explored the behaviors or practices of students related to stretch marks (e.g., prevention, treatment, acceptance).

Emerging nursing avenues

- What is the level of knowledge about the causes, prevention, and potential treatments of stretch marks among Vietnamese university students?
- What are the prevailing attitudes and behavior towards individuals with stretch marks among Vietnamese university students?
- To what extent do Vietnamese university students engage in practices related to the prevention or management of stretch marks?

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