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KNOWLEDGE, AWARENESS, AND HEALTHCARE-SEEKING BEHAVIOR TOWARD NECROTIZING FASCIITIS AMONG THE GENERAL POPULATION IN SAUDI ARABIA: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Necrotizing fasciitis (NF) is a rapidly progressive and life-threatening soft tissue infection in which delayed recognition and treatment significantly worsen clinical outcomes. While public awareness of NF has been explored, the relationship between knowledge and healthcare-seeking behavior remains insufficiently understood.

Objective: To assess levels of knowledge, awareness, and attitudes toward NF and to examine their association with healthcare-seeking behavior, with a particular focus on the risk of delayed care among the general population in Saudi Arabia.

Methods: A cross-sectional, questionnaire-based study was conducted among adults in Saudi Arabia using a convenience sampling approach. The survey instrument was adapted from previously published studies and extended to include items assessing healthcare-seeking behavior and the risk of delayed care. Knowledge scores were categorized into good and poor levels. A proxy indicator for delayed healthcare-seeking behavior was constructed based on responses reflecting perceived urgency and understanding of appropriate management. Descriptive statistics, chi-square tests, and multivariable logistic regression analysis were performed.

Results: A total of 384 participants were included. Overall awareness of NF was moderate; however, detailed knowledge remained limited. Poor knowledge was significantly associated with a higher risk of delayed healthcare-seeking behavior ($p < 0.001$). Participants with poor knowledge had more than fourfold higher odds of delayed care compared to those with good knowledge (AOR = 4.10, 95% CI: 2.45–6.85).

Conclusion: Despite moderate awareness, substantial gaps persist in detailed knowledge and behavioral readiness regarding NF. Lower knowledge levels were strongly associated with delayed healthcare-seeking behavior, underscoring the need for targeted educational interventions that promote early recognition and timely healthcare utilization to improve clinical outcomes.

KEYWORDS: Necrotizing fasciitis; Knowledge; Awareness; Healthcare-seeking behavior; Delayed care; Public health; Saudi Arabia.

INTRODUCTION

Necrotizing fasciitis (NF) is a rare, rapidly progressive soft tissue infection associated with significant morbidity and mortality. Despite advancements in medical care, patient outcomes remain highly dependent on early recognition and timely intervention. Delayed diagnosis has been consistently associated with severe complications, including limb amputation and death (Anaya & Dellinger, 2007; McHenry et al., 2000).

A key challenge in the clinical management of NF lies in its early presentation, which frequently mimics less severe conditions such as cellulitis and other soft tissue infections. This diagnostic ambiguity contributes significantly to delays in seeking medical care and, consequently, to worsened clinical outcomes (Wong et al., 2004).

Previous studies assessing knowledge and awareness of skin and soft tissue infections (SSTIs) and necrotizing fasciitis have consistently identified substantial gaps among both the general population and healthcare providers (Almalki et al., 2024; Alshareef et al., 2018; Al Shamsi et al., 2024; Farooqi et al., 2025). While these studies primarily focused on assessing awareness and knowledge levels, most relied on similar questionnaire-based instruments and did not incorporate measures to evaluate behavioral responses, such as healthcare-seeking behavior or the risk of delayed care.

Accordingly, the present study extends this perspective by examining how knowledge translates into healthcare-seeking behavior, particularly in relation to the risk of delayed care.

These gaps involve inadequate recognition of disease severity, delayed response to symptoms, and persistent misconceptions regarding risk factors and disease progression, all of which may contribute to suboptimal healthcare-seeking decisions and increase the likelihood of delayed medical intervention. Addressing this gap is essential for

improving early recognition and promoting timely healthcare utilization in time-sensitive conditions such as necrotizing fasciitis.

Existing studies have largely focused on descriptive assessments of awareness, without adequately addressing how knowledge translates into behavioral responses, particularly in relation to the timeliness of seeking medical care. Notably, knowledge alone does not necessarily translate into appropriate action. The decision to seek medical care is a complex process influenced by risk perception, symptom interpretation, and perceived urgency. In this context, insufficient knowledge may contribute not only to misrecognition of disease severity but also to delayed healthcare-seeking behavior, thereby increasing the risk of adverse outcomes.

Therefore, this study aims to assess the levels of knowledge, awareness, and attitudes toward necrotizing fasciitis and to examine their association with healthcare-seeking behavior, with a particular emphasis on the risk of delayed care among the general population in Saudi Arabia.

OBJECTIVES

Primary Objective

To assess the levels of knowledge, awareness, and attitudes toward necrotizing fasciitis and to examine their association with healthcare-seeking behavior, with particular emphasis on the risk of delayed care among the general population in Saudi Arabia.

Secondary Objectives

1. To examine the association between sociodemographic factors and knowledge levels.
2. To evaluate the relationship between knowledge levels and the risk of delayed healthcare-seeking behavior.
3. To assess public perception regarding the severity and urgency of necrotizing fasciitis.
4. To explore the behavioral implications of knowledge in influencing decision-making related to timely healthcare-seeking.

METHODOLOGY

Study Design

The questionnaire was adapted from a previously published study by Farooqi et al. (2025), which assessed knowledge and awareness of necrotizing fasciitis. In the present study, the original knowledge and awareness items were retained with minor modifications for clarity, while additional items were developed and incorporated to specifically assess healthcare-seeking behavior and the risk of delayed care. This extension enabled a more comprehensive evaluation of the relationship between knowledge and behavioral response.

Study Population

The study targeted adults residing in Saudi Arabia.

Inclusion criteria included adults aged 18 years and above, residents of Saudi Arabia, and individuals able to understand Arabic or English. Healthcare-related participants were included and analyzed as a distinct subgroup within the study sample.

Exclusion criteria included individuals who declined to participate or submitted incomplete questionnaire responses.

Sampling Strategy

A convenience sampling method was used to recruit participants through online platforms, including social media applications such as WhatsApp, Twitter, and Instagram. Efforts were made to distribute the questionnaire across different regions of Saudi Arabia to enhance geographic diversity. However, due to the nature of convenience sampling, the findings are subject to potential selection bias.

Sample Size

The minimum required sample size was calculated to be 384 participants using a standard sample size calculation approach, assuming a 50% response distribution, a 5% margin of error, and a 95% confidence level. The final achieved sample size met this requirement, supporting the adequacy of the study sample.

Data Collection Tool

Data were collected using a structured, self-administered questionnaire developed based on a review of the relevant literature. The questionnaire consisted of four sections: sociodemographic characteristics, knowledge about necrotizing fasciitis, awareness and sources of information, and attitudes and healthcare-seeking behavior. The questionnaire was available in both Arabic and English. Participants were allowed to select multiple responses for selected items, particularly those assessing risk factors and prevention methods.

To assess knowledge level, each correct answer was assigned a score of one, whereas incorrect and “I don’t know” responses were assigned a score of zero. A total knowledge score was calculated based on five key knowledge items related to causes, risk factors, symptoms, disease severity, and early recognition, and subsequently categorized into good and poor levels according to predefined cut-off points.

Awareness was assessed using items related to prior knowledge of necrotizing fasciitis and self-rated awareness levels.

OPERATIONAL DEFINITIONS OF KEY VARIABLES

Knowledge Level

Knowledge regarding necrotizing fasciitis was assessed using five pre-specified items derived from the study questionnaire, covering the main domains of the disease, including cause, common causative organism, symptom progression, risk factors, and disease severity/early recognition.

Each correct response was assigned a score of one, whereas incorrect and "I don't know" responses were assigned a score of zero. A total knowledge score ranging from 0 to 5 was calculated for each participant.

Participants were subsequently categorized into two groups based on their total score. A score of ≥3 was considered indicative of good knowledge, whereas a score of <3 was classified as poor knowledge. This cutoff was selected to reflect a minimum acceptable level of understanding across multiple domains of the disease and to enable meaningful categorization for statistical analysis.

Risk of Delayed Healthcare-Seeking Behavior (Proxy Indicator)

The risk of delayed healthcare-seeking behavior was not directly measured; therefore, a proxy indicator was constructed to capture behavioral tendencies related to delayed care.

This indicator was derived from pre-specified questionnaire items reflecting key components of healthcare-seeking behavior, including perceived urgency of treatment, recognition of rapid disease progression, and understanding of appropriate management.

Responses indicating low perceived urgency, lack of awareness of rapid symptom progression, or uncertainty regarding appropriate treatment were considered indicative of a higher risk of delayed care. In contrast, responses reflecting appropriate recognition of disease severity and timely action were categorized as lower risk.

Participants were classified into two categories:

- **High risk of delayed care**
- **Low risk of delayed care**

This proxy-based indicator was used to approximate potential delays in healthcare-seeking behavior in the absence of direct measurement. While this approach does not capture actual time to presentation, it provides a conceptually grounded estimate of behavioral readiness and allows for the examination of associations between knowledge and healthcare-seeking behavior within the constraints of a cross-sectional design.

Validity and Reliability

Content validity was assessed by a panel of experts in general surgery, infectious diseases, and public health, with excellent agreement (Content Validity Index > 0.80).

A pilot study was conducted among a subset of participants to assess clarity and feasibility. Internal consistency reliability was evaluated using Cronbach's alpha, which indicated acceptable reliability.

Data Analysis

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS), version 26 (IBM Corp., Armonk, NY, USA) . Data were checked for completeness and internal consistency prior to analysis.

Descriptive statistics were used to summarize participant characteristics and study variables. Categorical variables were expressed as frequencies and percentages. Knowledge level was treated as a categorical variable (good vs. poor).

Associations between categorical variables, including the relationship between knowledge level and the risk of delayed healthcare-seeking behavior (proxy indicator), were assessed using the Chi-square test, where appropriate, including the use of Fisher's exact test when necessary. Statistical significance was defined as $p < 0.05$.

In addition, a multivariable binary logistic regression analysis was performed to identify independent predictors of high risk of delayed healthcare-seeking behavior and to adjust for potential confounders. Variables included in the model were knowledge level, age, gender, education level, and healthcare background. Adjusted odds ratios (AORs) with 95% confidence intervals were reported.

Ethical Considerations

Ethical approval for this study was obtained from the Institutional Review Board (IRB) of Umm Al-Qura University. Participation was entirely voluntary, and informed consent was obtained electronically from all participants prior to data collection.

All data were collected anonymously, and no personal identifiers were recorded. Confidentiality and privacy of participants were strictly maintained throughout the study.

RESULTS

1. Sociodemographic Characteristics

A total of 384 participants completed the survey. Females constituted the majority of the sample (58.3%), while males accounted for 41.7%. Most participants were Saudi nationals (82.0%) (**Table 1**).

The age distribution was predominantly younger, with 58.6% aged 18–29 years, followed by 26.3% aged 30–39 years. Participants aged ≥50 years represented a small proportion (2.9%). The majority were single (79.2%).

In terms of education, most participants held a bachelor's degree (78.4%), while 15.1% had postgraduate qualifications. A substantial proportion (37.8%) were from healthcare-related backgrounds.

The achieved sample size met the minimum calculated requirement. However, the distribution reflects the convenience sampling approach and should be interpreted accordingly.

Table 1. Sociodemographic characteristics of study participants (N = 384)

Parameter	Category	Frequency (n)	Percentage (%)
Gender	Male	160	41.7
	Female	224	58.3
Nationality	Saudi	315	82.0
	Non-Saudi	69	18.0
Age (years)	18–29	225	58.6
	30–39	101	26.3
	40–49	47	12.2
	≥50	11	2.9
Marital status	Single	304	79.2
	Married	80	20.8
Education level	Secondary school	25	6.5
	Bachelor	301	78.4
	Postgraduate	58	15.1
Occupation	Healthcare-related	145	37.8
	Other professions	110	28.6
	Teacher	43	11.2
	Engineer	36	9.4
	Military	25	6.5
	Student	25	6.5

2. Knowledge and Awareness of Necrotizing Fasciitis

Overall awareness of necrotizing fasciitis was moderate, with 69.8% of participants reporting prior knowledge of the condition (**Table 2**).

However, detailed knowledge remained inconsistent. While 61.2% correctly identified bacterial infection as the primary cause, only 45.3% recognized Group A Streptococcus as a common causative organism, and 29.2% reported uncertainty.

Recognition of disease progression was limited, with only 44.3% correctly identifying the rapid onset of symptoms, while 29.4% were unsure.

Similarly, knowledge of risk factors was fragmented, as 27.3% reported no knowledge of any risk factors. Self-rated awareness reflected this pattern, with the majority (64.3%) describing themselves as “somewhat aware.

Table 2. Knowledge and awareness of necrotizing fasciitis (N = 384)

Parameter	Category	Frequency (n)	Percentage (%)
Heard of NF	Yes	268	69.8
	No	116	30.2
Cause of NF	Bacterial infection	235	61.2
	Viral infection	36	9.4
Common organism	Fungal infection	29	7.6
	I don’t know	84	21.9
	Group A Streptococcus	174	45.3
	Staphylococcus aureus	80	20.8
	Escherichia coli	18	4.7
	I don’t know	112	29.2
Symptom progression	Within hours	170	44.3
	Within days	83	21.6
	Within weeks	18	4.7
	I don’t know	113	29.4

Parameter	Category	Frequency (n)	Percentage (%)
Risk factors	Cuts or wounds	87	22.7
	Diabetes	51	13.3
	Weak immune system	101	26.3
	Recent surgery	40	10.4
	I don't know	105	27.3
Occurrence in healthy individuals	Yes	196	51.0
	No	188	49.0
Self-rated awareness	Unaware	119	31.0
	Partially aware	15	3.9
	Somewhat aware	247	64.3
	Highly aware	3	0.8

3. Attitudes and Healthcare-Seeking Practices

Participants demonstrated generally positive attitudes toward necrotizing fasciitis. Most participants (70.8%) recognized the importance of early treatment and the need for public awareness (**Table 3**).

Despite this, gaps in practical knowledge persisted. While 60.4% correctly identified surgery as the primary treatment, 25.5% were uncertain. Preventive knowledge remained limited, with 24.5% unable to identify any preventive measures.

Interest in further education was high (81.3%), indicating strong receptiveness to awareness initiatives.

Table 3. Attitudes and practices toward necrotizing fasciitis (N = 384)

Parameter	Category	Frequency (n)	Percentage (%)
Importance of early treatment	Very important	272	70.8
	Somewhat important	22	5.7
	Not important	18	4.7
	I don't know	72	18.7
Importance of public awareness	Yes	272	70.8
	No	22	5.7
	Not sure	90	23.4
Desire for more information	Yes	312	81.3
	No	72	18.8
Perceived treatment	Surgical	232	60.4
	Antibiotics	43	11.2
	Painkillers	11	2.9
	I don't know	98	25.5
Prevention methods	Good hygiene	54	14.1
	Avoiding contact	18	4.7
	I don't know	94	24.5

Note: Multiple responses were allowed for this item.

4. Association Between Sociodemographic Factors and Knowledge Level

Significant associations were observed between knowledge level and several sociodemographic variables (**Table 4**).

Females demonstrated significantly higher knowledge levels compared to males ($p < 0.001$). Age was also significantly associated with knowledge ($p < 0.001$), with participants aged 40–49 years exhibiting the highest proportion of good knowledge.

Educational level showed a strong association ($p < 0.001$), with postgraduate participants demonstrating higher knowledge, while no participants with secondary education achieved good knowledge.

Occupation was also significantly associated ($p < 0.001$), with healthcare-related participants demonstrating higher knowledge levels.

No significant associations were observed with nationality ($p = 0.21$) or marital status ($p = 0.64$).

Table 4. Association between sociodemographic variables and knowledge level (row percentages) (N = 384)

Variable	Category	Good Knowledge n (%)	Poor Knowledge n (%)	P-value	Chi-square
Gender	Male	36 (22.5%)	124 (77.5%)	<0.001*	50.5
	Female	137 (61.2%)	87 (38.8%)		
Age	18–29	87 (38.7%)	138 (61.3%)	<0.001*	41.2
	30–39	47 (46.5%)	54 (53.5%)		
	40–49	40 (85.1%)	7 (14.9%)		
	≥50	0 (0.0%)	11 (100.0%)		
Education	Secondary school	0 (0.0%)	25 (100.0%)	<0.001*	34.6
	Bachelor	134 (44.5%)	167 (55.5%)		
	Postgraduate	39 (67.2%)	19 (32.8%)		
Occupation	Healthcare-related	87 (60.0%)	58 (40.0%)	<0.001*	78.3
	Engineer	14 (38.9%)	22 (61.1%)		
	Other professions	73 (66.4%)	37 (33.6%)		
	Student	0 (0.0%)	25 (100.0%)		
	Teacher	0 (0.0%)	43 (100.0%)		
	Military	0 (0.0%)	25 (100.0%)		
Nationality	Saudi	134 (42.5%)	181 (57.5%)	0.21	1.56
	Non-Saudi	40 (58.0%)	29 (42.0%)		
Marital status	Single	141 (46.4%)	163 (53.6%)	0.64	0.22
	Married	33 (41.3%)	47 (58.7%)		

Note: Row percentages are presented. Statistical significance was assessed using the Chi-square test.
* $p < 0.05$ indicates statistical significance.
Fisher's exact test was used where appropriate.

5. Association Between Knowledge Level and Healthcare-Seeking Behavior

A statistically significant association was observed between knowledge level and the risk of delayed healthcare-seeking behavior ($p < 0.001$) **(Table 5).** Participants with poor knowledge demonstrated a substantially higher proportion of responses indicative of delayed care compared to those with good knowledge (56.9% vs. 20.2%). Conversely, individuals with good knowledge were more likely to exhibit appropriate healthcare-seeking behavior compared to those with poor knowledge (79.8% vs. 43.1%).

Furthermore, participants with poor knowledge had significantly higher odds of exhibiting delayed healthcare-seeking behavior compared to those with good knowledge (OR = 5.20, 95% CI: 3.30–8.10).

Table 5. Association between knowledge level and risk of delayed healthcare-seeking behavior among participants

Knowledge	High risk n (%)	Low risk n (%)	OR (95% CI)	p-value
Good	35 (20.2%)	138 (79.8%)	Reference	<0.001
Poor	120 (56.9%)	91 (43.1%)	5.20 (3.30–8.10)	

A multivariable logistic regression analysis was conducted to adjust for potential confounding variables. After adjustment, knowledge level remained significantly associated with the risk of delayed healthcare-seeking behavior. Participants with poor knowledge had more than fourfold higher odds of delayed care compared to those with good knowledge (AOR = 4.10, 95% CI: 2.45–6.85, $p < 0.001$) **(Table 6).** The overall model was statistically significant, indicating a good fit of the data.

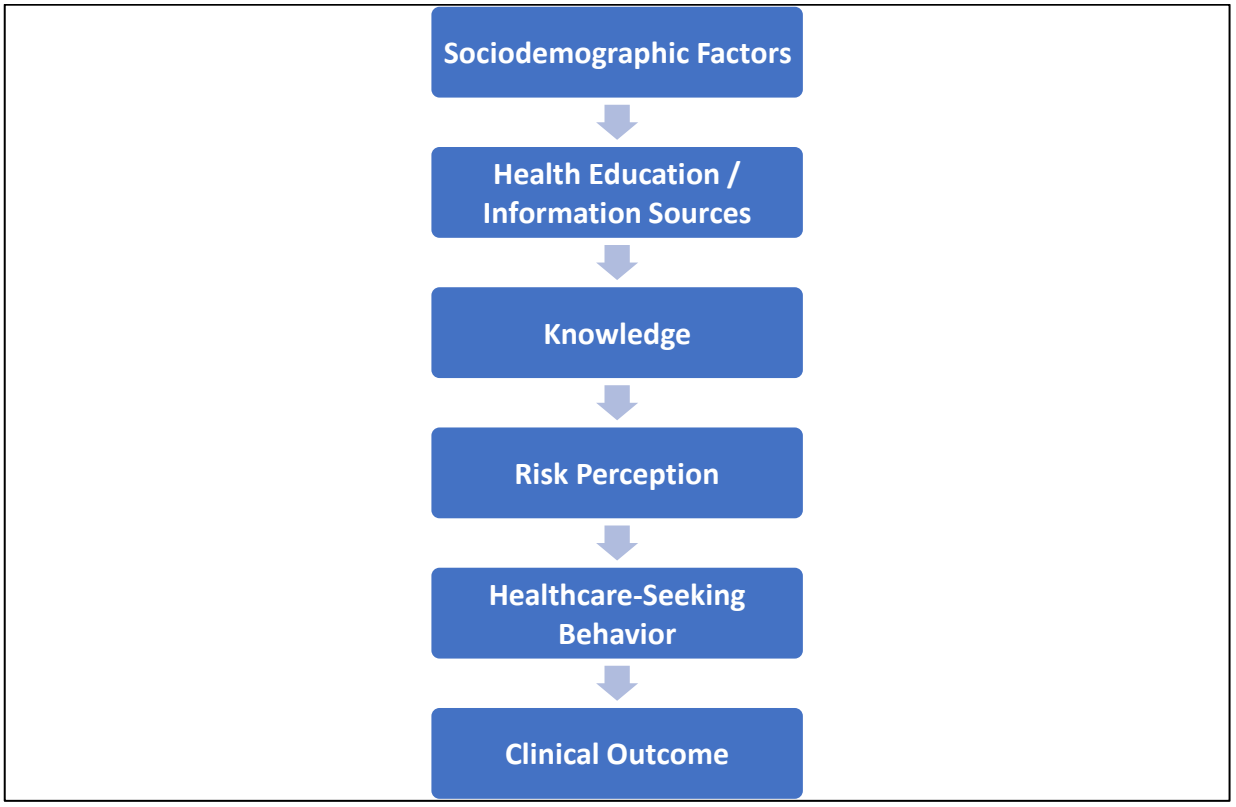
Table 6. Multivariable logistic regression analysis of factors associated with high risk of delayed healthcare-seeking behavior

Variable	Adjusted OR (95% CI)	p-value
Knowledge (Poor vs Good)	4.10 (2.45–6.85)	<0.001
Gender (Male vs Female)	1.30 (0.80–2.10)	0.27
Age (≥30 vs <30)	1.45 (0.90–2.30)	0.11
Education (≤Bachelor vs Postgraduate)	1.60 (0.95–2.70)	0.07
Healthcare background (No vs Yes)	1.75 (1.05–2.90)	0.03

Adjusted for age, gender, education level, and healthcare background.

6. CONCEPTUAL FRAMEWORK

Figure 1. Conceptual framework illustrating the pathway linking sociodemographic factors and information sources to knowledge, risk perception, and healthcare-seeking behavior, ultimately influencing clinical outcomes. The framework highlights how insufficient knowledge may contribute to delayed healthcare-seeking behavior through its impact on risk perception.



DISCUSSION

This study offers a comprehensive assessment of knowledge, awareness, and attitudes toward necrotizing fasciitis and their relationship with healthcare-seeking behavior among the general population in Saudi Arabia. The findings demonstrate a moderate level of awareness accompanied by notable gaps in detailed knowledge and variability in behavioral preparedness.

Although a substantial proportion of participants reported prior awareness of necrotizing fasciitis, this awareness did not translate into adequate functional knowledge. While bacterial infection was commonly identified as the primary cause, knowledge regarding specific pathogens, disease progression, and risk factors remained inconsistent. This discrepancy reflects a well-established concept in health literacy research, where awareness alone is insufficient to drive appropriate health-related behavior (Almalki et al., 2024; Alshareef et al., 2018). Similar findings have been reported in studies assessing awareness of necrotizing fasciitis and other acute and time-sensitive conditions, where recognition does not necessarily translate into timely action (Farooqi et al., 2025).

Extending this, a key finding of this study is the significant association between knowledge and the risk of delayed healthcare-seeking behavior. The magnitude of this association is particularly noteworthy, as participants with poor knowledge demonstrated more than fivefold higher odds of delayed healthcare-seeking behavior.

Importantly, this association remained significant after adjusting for key sociodemographic factors, indicating that knowledge is an independent predictor of healthcare-seeking behavior. This suggests that the observed relationship is not merely attributable to differences in age, education, or healthcare background, but rather reflects the role of knowledge in shaping behavioral responses.

In this context, insufficient knowledge may contribute to delayed recognition of disease severity and reduced urgency in seeking medical care.

In line with these findings, participants with lower knowledge levels demonstrated a markedly higher likelihood of exhibiting responses indicative of delayed care, whereas those with higher knowledge levels were more likely to recognize disease severity and seek timely medical attention. This aligns with established health behavior models, in which knowledge influences risk perception, which in turn shapes behavioral decision-making.

In the context of necrotizing fasciitis, this relationship is of particular clinical importance. The rapid progression and aggressive nature of the disease mean that even short delays in recognition and intervention can lead to severe outcomes, including limb amputation and mortality (Anaya & Dellinger, 2007; Stevens & Bryant, 2017; Bonne & Kadri, 2017; van Stigt et al., 2016). The findings of this study therefore suggest that insufficient knowledge may

contribute not only to misinterpretation of symptoms but also to delayed healthcare-seeking behavior, ultimately increasing the risk of adverse clinical outcomes.

Knowledge levels were significantly associated with several sociodemographic factors. Female participants demonstrated higher knowledge levels compared to males, which may reflect greater engagement with health-related information. Age was also significantly associated with knowledge, with middle-aged participants exhibiting relatively higher awareness, potentially due to cumulative exposure to health information and personal experiences. Educational attainment emerged as a strong determinant of knowledge, with participants holding postgraduate degrees demonstrating higher levels of understanding. Similarly, healthcare-related participants exhibited significantly higher knowledge levels, likely reflecting professional exposure and training. In contrast, nationality and marital status were not significantly associated with knowledge levels, suggesting that access to education and information plays a more critical role than demographic characteristics alone.

Despite generally positive attitudes toward the severity of necrotizing fasciitis and the importance of early treatment, gaps in practical knowledge were evident, particularly regarding treatment options and preventive measures. Notably, a discrepancy was observed between perceived importance and actionable understanding, indicating that recognition of severity does not necessarily translate into appropriate behavior.

This finding aligns with qualitative evidence describing delays in symptom recognition and healthcare-seeking among patients with necrotizing fasciitis (Erichsen Andersson et al., 2018). Together, these results highlight a critical gap between awareness and behavioral readiness, emphasizing the need for targeted educational strategies that focus on actionable knowledge rather than general awareness alone.

From a public health perspective, these findings underscore the importance of structured educational interventions aimed at improving both knowledge and behavioral response. Given the rapid progression and high mortality associated with necrotizing fasciitis, public health strategies should prioritize early symptom recognition and emphasize the urgency of seeking medical care (Khamnuan et al., 2015; McHenry et al., 2000). The high level of interest in receiving further information observed in this study represents an important opportunity for implementing such interventions.

This study has several strengths. It integrates knowledge, attitudes, and healthcare-seeking behavior within a unified analytical framework, allowing for a more comprehensive understanding of public awareness. Additionally, the identification of key determinants of knowledge provides practical insights for designing targeted interventions. These findings reinforce the importance of addressing knowledge gaps not only to improve awareness but also to reduce the risk of delayed healthcare-seeking behavior in time-sensitive conditions such as necrotizing fasciitis. The use of both unadjusted and adjusted analytical approaches strengthens the validity of the findings.

Limitations

However, several limitations should be considered when interpreting the findings. First, the cross-sectional design limits the ability to establish causal relationships between knowledge and healthcare-seeking behavior. Second, the use of convenience sampling may introduce selection bias and restrict the generalizability of the findings.

Although the sample size met the minimum calculated requirement, larger and more representative samples are recommended to improve external validity. In addition, reliance on self-reported data may introduce recall bias and social desirability bias, potentially influencing participants' responses.

Furthermore, healthcare-seeking behavior and the risk of delayed care were assessed using a proxy-based approach derived from questionnaire responses rather than direct measurement of actual delays. While this approach provides valuable insight into behavioral tendencies, the findings should be interpreted within this context.

Future research should focus on evaluating the effectiveness of targeted educational interventions in improving both knowledge and healthcare-seeking behavior. Larger and more representative studies are needed to validate these findings, while qualitative approaches may provide deeper insights into barriers to early recognition and timely healthcare utilization.

CONCLUSION

In conclusion, this study demonstrates that while general awareness of necrotizing fasciitis exists, substantial gaps persist in detailed knowledge and behavioral preparedness. Importantly, the findings highlight a significant association between knowledge level and the risk of delayed healthcare-seeking behavior.

Participants with lower knowledge levels were more likely to exhibit responses indicative of delayed care, suggesting that insufficient knowledge may contribute to delayed recognition of disease severity and delayed action. Given the rapid progression and potentially life-threatening nature of necrotizing fasciitis, such delays may result in serious clinical consequences.

Bridging these gaps requires targeted, evidence-based educational strategies that focus not only on improving awareness but also on enhancing actionable knowledge, early symptom recognition, and the urgency of seeking medical care. Strengthening both knowledge and behavioral readiness may play a critical role in reducing delays and improving clinical outcomes.

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