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BUILDING SAFER BEHAVIORS: THE RELATIONSHIP BETWEEN SELF-EFFICACY AND BURN INJURY AMONG STUDENTS

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ABSTRACT

Burns are preventable injuries through safety behaviors supported by an individual's belief in their abilities (self-efficacy). This study aims to analyze the relationship between self-efficacy and burn prevention behaviors in college students. The study used a quantitative design with a cross-sectional approach. A sample of 36 students was selected using a purposive sampling technique. Data was collected using a self-efficacy questionnaire and burn prevention behaviors that had been tested for validity and reliability, then analyzed using Spearman's Rho correlation test. The results showed that most respondents had moderate self-efficacy (41.7%) and good burn prevention behaviors (69.4%). Spearman Rank analysis showed a strong and significant relationship between self-efficacy and burn prevention behaviors ($r = 0.701$; $p = 0.001$). It was concluded that the higher the students' self-efficacy, the better the burn prevention behaviors they apply in their daily lives. Therefore, strengthening self-efficacy needs to be part of burn prevention safety education programs in higher education.

Keywords: *Self Efficacy, Burn Prevention Behaviors, Fourth Grade Students*

INTRODUCTION

Burns remain a public health challenge, as they can occur unexpectedly in various settings—such as homes, workplaces, laboratories, and educational institutions. These injuries cause not only skin tissue damage but also physiological dysfunction and severe pain; furthermore, without appropriate early management, they can have significant psychological, social, and economic impacts on the individual (Jeschke et al., 2020) For university students, the risk of burns stems not only from daily activities but also from laboratory practical's, the use of electrical equipment, cooking in their living quarters, organizational activities, and community service projects involving heat sources or chemicals. Consequently, burn prevention behavior is a crucial attribute for students to cultivate to reduce injury risk and minimize severity should an incident occur (Clark et al., 2018). A key psychological factor shaping prevention behavior is self-efficacy—an individual's belief in their ability to correctly execute specific actions in each situation (Salt et al., 2025). According to Bandura's social cognitive theory, individuals with high self-efficacy tend to be more confident in identifying risk factors, making sound decisions, and consistently practicing preventive measures compared to those with low self-efficacy. However, societal trends indicate that burn prevention and initial treatment behaviors are often influenced by long-standing traditional practices that do not align with scientific recommendations. Practices such as

applying toothpaste, butter, cooking oil, soy sauce, coffee, or other traditional substances to the burn site remain widespread due to the belief that they alleviate the burning sensation; in reality, these actions can increase the risk of contamination, delay healing, and exacerbate tissue damage (Akbar & Agustina, 2023) These circumstances demonstrate that knowledge alone is not necessarily sufficient to foster correct behavior without the self-belief required to implement medically standard procedures, making self-efficacy a vital variable in burn prevention efforts among university students.

Burns remain a significant cause of injury and a major public health burden across various nations. Epidemiological studies indicate that burn injuries are prevalent in both developed and developing countries, although the causative factors and high-risk groups vary by region (Jeschke et al., 2020). In the United States, prevention efforts are continuously developed through public education, improved household safety standards, product regulations, and safety campaigns targeting children, adolescents, and young adults—demographics frequently engaged in high-risk activities (Clark et al., 2018). In Europe, community-based burn prevention programs have demonstrated that systematically designed educational interventions can raise public awareness regarding risk factors and improve injury-prevention behaviors (van Balen et al., 2024) Asian countries face more complex challenges due to high exposure to household heat sources, the use of traditional stoves, cooking practices, and limited health literacy regarding burn first aid. In Indonesia, burns remain a common issue in both healthcare facilities and the community. Research indicates that public practices regarding first aid are often influenced by cultural beliefs and informally acquired information, meaning they do not always align with medical guidelines (Akbar & Agustina, 2023). This highlights that behavioral change is determined not only by the information one possesses but also by psychological factors—such as self-efficacy—that empower individuals to confidently implement preventive measures in their daily lives.

A burn is a form of tissue damage resulting from exposure to energy levels that exceed the body's tissue tolerance. The causes of burns are diverse, encompassing thermal exposure—such as fire, boiling water, hot steam, hot metal, or explosions—as well as electrical exposure, acidic or alkaline chemicals, radiation, and friction-induced skin damage (Wang et al., 2022) Each type of burn involves a distinct injury mechanism, thereby requiring a specific management approach. Thermal burns are the most common type encountered in daily life, whereas chemical and electrical burns tend to cause deeper tissue damage, even when surface skin appearance seems minimal. Clinical manifestations of burns range from pain, erythema, edema, and blistering to skin discoloration and tissue necrosis, depending on the depth of the injury. Based on the extent of tissue damage, burns are classified into superficial burns (affecting only the epidermis), partial-thickness burns (involving the epidermis and part of the dermis), and full-thickness burns (affecting all skin layers and even underlying tissues) (American Burn Association, 2022; Mahamed et al., 2018) Without appropriate prevention or treatment, burns can lead to various complications, including infection, massive fluid loss, electrolyte imbalances, hypovolemic shock, organ failure, contractures, mobility impairment, deformities, and psychological issues that affect the patient's quality of life.

Efforts to reduce the incidence of burn injuries require a comprehensive approach involving improved health literacy, strengthened self-efficacy, and the establishment of sustainable prevention behaviors. Research indicates that educational programs combining

practical training, simulations, and experiential learning can boost an individual's confidence in adopting daily safety practices (van Balen et al., 2023). University's students represent a prime target group for such interventions, as they are in the young adult developmental stage—characterized by critical thinking skills, openness to innovation, and significant social influence within both campus and broader communities. Strengthening self-efficacy among students aims not only to enhance their ability to avoid burn risk factors but also to foster emergency preparedness; this involves the capacity to identify hazards, administer standard first aid, and make rapid, accurate decisions during incidents. With increased self-efficacy, students are expected to more consistently adopt burn prevention behaviors, use protective equipment when exposed to risks, adhere to safety protocols, and avoid practices that conflict with scientific principles. Consequently, research into the relationship between self-efficacy and burn prevention behaviors among students is crucial for generating scientific evidence; this evidence can serve as a foundation for developing health promotion programs, emergency education, and safety policies within higher education institutions, ultimately fostering a sustainable culture of safety.

METHOD

The study used correlational research design. The research population consisted of students from ITM Nganjuk Kediri, with a sample of 36 respondents selected using purposive sampling. Data collection was conducted using general self-efficacy questionnaires, and statistical analysis was performed using the Spearman Rho test.

RESULT AND DISCUSSION

Finding

The results of the general data analysis are presented in the following table:

Table 1. General Information

No	Information	Amount	Percentage
1	**Gender**		
	Male	15	41,7
	Female	21	**58,3**
	Total	**36**	**100**
2	**Burn Injury Expierence**		
	Has not occurred	7	19,4
	Has Occurred	29	80,5
	Total	**36**	**100**
3	**Types of burns sustained**		
	Has not occurred	7	19,4
	Hot water/ oil	13	36,1
	Electric shock	2	5,6
	hot metal/exhaust pipe	14	38,9
	Chemicals	0	0
	Total	**36**	**100**
4	**Burn Care Education**		
	Has not occurred	28	77,8
	Has Occurred	8	22,2

Table 1 showed that the majority of respondents were female (21 respondents; 58.3%) and had previously sustained burns (29 respondents; 80.5%). Most of these burns were caused by hot liquids (13 respondents; 36.1%) or hot objects (14 respondents; 38.9%), and the majority of respondents (28 respondents; 77.8%) had never received information regarding burn treatment.

Tabel 2. Self-efficacy

No	Result	Amount	Percentage
1	Low	13	36,1%
2	Medium	15	41,75%
3	High	8	22,2%
	Total	**36**	**100%**

Based on Table 2, show that the majority of respondents had low self-efficacy (13 respondents, 36.1%) or moderate self-efficacy (15 respondents, 41.7%).

Table 3. Burn prevention behavior among students

No	Keterangan	Amount	Percentage
1	Poor	5	13,9 %
2	Adequate	6	16,7 %
3	Good	25	69,4 %
	Total	**36**	**100 %**

Based on Table 3, the majority of respondents (25 or 69.4%) demonstrated good burn prevention behavior.

Table 4 Spearman's Rho Statistical Test on Self-Efficacy and Burn Injury Prevention Behavior among Students at ITM Nganjuk

		Burn Prevention Behavior			
		Poor	Adequate	Good	Total
Self-Efficacy	Low	5	5	3	13
	Medium	0	1	14	15
	High	0	0	8	8
Total		**5**	**6**	**25**	**36**
Spearman's rho		Correlation Coefficient			.701**
		Sig. (2-tailed)			0,001

Based on the results of the Spearman's Rho test, a p-value of 0.001 was obtained, indicated a significant difference regarding self-efficacy and burn prevention behavior.

Discussion

The results showed that the majority of respondents had a moderate self-efficacy category (15 students), followed by a low category (13 students), and a high category (8 students). These findings indicate that the majority of students had sufficient confidence in their ability to perform preventative measures and initial treatment of burns, but not all felt confident in implementing these measures consistently in real-life situations. According to social cognitive theory, self-efficacy is an individual's belief in their ability to act, thus influencing motivation, persistence, and decisions to behave healthily when facing risky conditions. Students with higher self-efficacy tend to be more prepared to recognize risk factors, implement safety procedures, and provide first aid for burns according to guidelines compared to those with low self-efficacy (Jeschke et al., 2020). Conversely,

low self-efficacy can lead to hesitation in making decisions, lack of confidence in facing emergencies, and a greater likelihood of following treatment practices that are not in accordance with medical recommendations (Akbar & Agustina, 2023). The results of a systematic review also show that burn prevention interventions that combine education and training consistently can increase self-efficacy, making individuals more confident in implementing injury prevention behaviors in their daily lives. Therefore, increasing self-efficacy through health education, simulations, and hands-on practice needs to be part of student learning programs so that they are prepared to face burn emergencies and can implement preventive behaviors sustainably (van Balen et al., 2023). The findings of this study indicate that strengthening self-efficacy is an important strategy for developing effective burn-prevention behaviors, enabling students not only to understand safety concepts but also to confidently implement them in their daily lives (Clark et al., 2018).

Data indicated that the majority of students (25 respondents) demonstrate good burn prevention behaviors, while 6 respondents fall into the fair category and 5 into the poor category. These findings suggest that most students can adopt preventive behaviors—such as exercising caution when using heat sources, adhering to safety protocols, and avoiding actions that could potentially cause burns during daily activities. Preventive behavior is a key factor in reducing the incidence of burns, as most incidents are avoidable through the adoption of a safety culture, the identification of risk factors, and adherence to prevention protocols (Clark et al., 2018). Students who exhibit good preventive behaviors are also generally better prepared for emergencies, able to minimize exposure to hazards, and capable of making sound decisions in risky situations, thereby reducing the severity of potential injuries (World Health Organization, 2018) Conversely, inadequate preventive behaviors increase the likelihood of accidents resulting from negligence, low vigilance, or habits that conflict with safety principles and medical recommendations (Akbar & Agustina, 2023). Systematic reviews indicate that educational interventions and burn prevention programs can improve safety behaviors by enhancing risk awareness, knowledge, and individual confidence in consistently applying preventive measures. Therefore, burn prevention behaviors among students must be continuously reinforced through health education, simulations, and safety training to foster a sustainable culture of prevention within the campus environment and in daily life (van Balen et al., 2023).

Data indicates a strong and significant relationship between self-efficacy and burn prevention behaviors among university students—demonstrated by a Spearman's rho value of 0.701 ($p = 0.001$) meaning that higher self-efficacy correlates with better burn prevention practices. Students with high self-efficacy tend to be more confident in identifying risks and consistently applying burn prevention measures in their daily lives according Bandura theories. Regarding the prevention of scalds (burns caused by hot water), students with high self-efficacy exercise greater caution when handling boiling water or hot liquids, thereby reducing injury risk (Jeschke et al., 2020). In the realm of cooking safety, self-efficacy encourages students to adhere to safety procedures, such as monitoring the cooking process and using equipment correctly (Clark et al., 2018). Students with strong self-efficacy are also better equipped to prevent electrical burns by ensuring that electrical appliances are used in accordance with safety standards (Jeschke et al., 2020). Furthermore, confidence in one's abilities enhances compliance with measures to prevent burns from fire and chemicals by ensuring the correct application of safety procedures during daily activities and laboratory work (Zhu et al., 2025). Regarding general prevention, students with high self-efficacy are

more knowledgeable about first aid steps, adhere to safety rules, remind others of safety practices, and actively seek information on burn prevention (Ibrahim et al., 2014). Educational programs combined with practical training have been shown to boost self-efficacy while simultaneously improving burn prevention behaviors sustainably (van Balen et al., 2023). These findings demonstrate that self-efficacy is a psychological factor playing a crucial role in shaping a culture of safety and student preparedness regarding burn risks (Jeschke et al., 2020) Therefore, enhancing self-efficacy through health education and emergency simulations should be a primary strategy for strengthening burn prevention behaviors among university students (Clark et al., 2018)

CONCLUSION

Research showed that indicates a strong and significant relationship between self-efficacy and burn prevention behaviors among students, suggested that higher confidence in their own abilities correlates with better burn prevention practices. Self-efficacy plays a crucial role in encouraging students to recognize risks, adhere to safety procedures, administer correct first aid, and consistently practice burn prevention in their daily lives. Therefore, strengthening self-efficacy through health education, training, and emergency simulations should be integrated into student learning programs to foster a safety culture and reduce the risk of burn injuries.

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