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ORIGINAL ARTICLE

SELF-PROTECTIVE MOTIVATION AND COMPLIANCE WITH COVID-19 HEALTH PROTOCOLS AMONG UNDERGRADUATE NURSING STUDENTS

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ABSTRACT

Students who gather and do not pay attention to health protocols can be evidence of their low compliance with implementing health protocols. University students, particularly those who come from health faculties, are considered change agents in implementing health protocols. Thus, it is necessary to examine their motivation and attitude toward implementing health protocols. This study aimed to determine the relationship between self-protective motivation and compliance with the nursing students' health protocol. The study was carried out with 253 undergraduate nursing students selected through cluster sampling with a cross-sectional design. The results showed that most of the students complied with the health protocols; some already had motivations related to self-protective motivation against COVID-19 and some already had a positive attitude towards the health protocol. There is a significant relationship between self-protection motivation and compliance with the nursing student health protocol (p-value = 0.000). However, nursing students must increase self-protective motivation and positive attitudes by increasing their understanding and confidence in the dangers of COVID-19 to encourage their obedience to health protocols. More studies need to be conducted to investigate the causes of student non-compliance in implementing health protocols, especially in the campus environment.

Keywords: *Attitude; compliance; health protocol; self-protective motivation*

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INTRODUCTION

Despite the global prevalence of COVID-19 cases, adherence to health protocols remains notably low, particularly within the early adult age group, specifically individuals aged 18-45 years. In Indonesia, the 17-30 year age group exhibited the lowest adherence to health protocols (Simanjuntak et al., 2020). College and high school students, characterized by high mobility, emerge as significant contributors to COVID-19 cases in Indonesia, as their proclivity to gather and neglect social distancing places them at heightened risk of contracting the virus (Driposwana Putra et al., 2021).

Previous studies have delved into the compliance of college students with health protocols, revealing that while a majority (72.8%) adhered to these protocols, a notable proportion (27.2%) did not comply, with an additional 14.2% displaying negative attitudes (Wildayati, 2021). Moreover, a study highlighted that most nursing students exhibit commendable adherence to health protocols, with 58.8% displaying positive attitudes toward COVID-19 health protocols and 41.2% exhibiting negative attitudes (Zuhana et al., 2021).

Compliance is a key indicator that influences the effectiveness of the health system. Meanwhile, attitude acts as a determinant of behavior. It is intricately connected to perception, personality, and motivation. Motivation, in turn, comprises enabling factors such as facilities and policies and strengthening factors such as environment, knowledge, and attitude. Numerous factors influence the community's compliance with COVID-19 health protocols, including age, education, knowledge, attitudes and motivation, the latter emerging as a dominant factor shaping an individual's adherence to health protocols ((Triyanto & Kusumawardani (2020); Rahmiati, Afrianti (2021)).

Motivation, identified as a powerful tool to predict future behavior, particularly in the context of compliance with health protocols, has been extensively studied (Guo et al., 2023).

Simultaneously, the implementation of health protocols among students is significantly influenced by their motivation, confidence, and understanding of these protocols, culminating in the development of positive attitudes and a consequent disposition of adherence (Sukesih et al., 2020).

When comparing nursing students with the general population on education and knowledge, it is evident that nursing students possess a more comprehensive understanding of COVID-19 and health procedures. However, despite this knowledge, instances of noncompliance persist among students. A study by Lathifa et al. (2021) underlined that students are aware of the importance of adhering to health protocols. However, some still exhibit noncompliant behavior. Another study by Wildayati (2021) found that many students at Universitas Andalas have adhered to health protocols effectively, with motivation playing a significant contributing role. However, the same study highlighted that nursing students from health faculties continue to exhibit negative compliance. This phenomenon suggests a plausible relationship between self-motivation and the behavior of adhering to health protocols. The motivation for an individual to adopt a confident attitude is rooted in their intention to protect themselves, a concept termed self-protected motivation. This self-protected motivation significantly influences the extent to which a person is willing to perform or adhere to expected behaviors. Hence, the current study investigates self-protected motivation as a specific factor that influences compliance with health protocols among nursing undergraduate students during the COVID-19 pandemic. The aim is to provide a nuanced understanding of the motivational aspects shaping adherence to health protocols within this specific demographic, thus contributing valuable insights to the broader discourse on pandemic management and preventive measures.

METHOD

Study design

This is a quantitative research with a cross-sectional design.

Samples

The population of this study comprised students from the Faculty of Nursing of the Universitas Andalas. The researchers used probability sampling, a sampling technique in which each subject in the population has a known chance of being selected as a sample. The probability sampling technique used is cluster sampling, which is performed randomly from a predetermined group. The total sample was 253 students, ranging from first- to fourth-year students.

Instrument

The instrument used in the study was a health protocol compliance questionnaire adopted from the five standards of health protocols by the Indonesian Ministry of Health. Compliance measurement was adopted from Fithriyana & Alini (2021) and Saras et al. (2021) using a Likert scale of 19 questions. The score for each question ranges from 1 to 4. The score ranges from 19 to 76, with belief, acceptance, and actions as indicators.

This questionnaire has been tested for validity and reliability with a Cronbach's alpha of 0.805 and an r table of 0.227. Based on the result, all the items in the questionnaire are valid and reliable.

The modified self-protective motivation questionnaires modified from Al-Rasheed (2020) consist of 20 items measuring the severity, vulnerability, intrinsic reward, extrinsic reward, response efficacy, self-efficacy, and response cost. The score for each question ranges from 1 to 5. Thus, the overall score ranges from 20 to 100.

The results of the validity and reliability tests showed that the Cronbach alpha value was 0.823 and the r table value was 0.227. Therefore, all the elements of the self-protection motivation questionnaire were declared valid and reliable.

Data collection

Data were collected through an online survey conducted via Google Forms. Additionally, the researchers utilized secondary data from various populations within the university's academic department.

Data analysis

Data were analyzed using univariate and bivariate analysis. A descriptive analysis was used to describe the distribution of the characteristics of the respondents, compliance, motivation to protect themselves, and attitudes related to health protocols.

A correlation test was used to analyze the relationship between self-protective motivation and compliance with COVID-19 health protocols using Spearman's rho.

Ethical consideration

All procedures performed in studies with human participants followed the ethical standards of the institutional research committee with the number 156/KP/2021 and met the standard of the Declaration of Helsinki for human research.

RESULTS

Characteristics of the respondents

Table 1. Distribution of the characteristic of the respondents of nursing students of the Universitas Andalas (n = 253)

Characteristics	n (%)
Gender	
Men	23 (9.1)
Women	230 (90.9)
Residence	
West Sumatra	179 (70.8)
Outside West Sumatra	74 (29.2)
Students' year	
2021	78 (30.8)
2020	83 (32.8)
2019	53 (20.9)
2018	39 (15.4)

Table 1 illustrates the distribution of the characteristics of the respondents, revealing that the majority were women, comprising 230 individuals (90.9%). Furthermore, most of the respondents resided in West Sumatra (70.8%). Meanwhile, the distribution of students' classification was uniform across all four academic years.

Table 2. Distribution of compliance with the health protocol and self-protective motivation of the students at the Faculty of Nursing of the Universitas Andalas (n = 253)

Variable	Median	Min	Max	SD
Health protocol compliance	61	42	76	5.77
Self-protective motivation	74	53	92	7.36

Table 2 shows the median compliance with the health protocol, 61, with a minimum score of 42 and a maximum score of 76. This result suggests that the respondents generally adhered to health protocols, as the majority approached the maximum compliance score. Furthermore, Table 2 reveals a median self-protective motivation score of 74, with a minimum of 53 and a maximum of 92. Based on these findings, the motivation of the respondents for self-protection with respect to health protocols appears moderate, as reflected in the overall median motivation scores of the respondents.

Table 3. Distribution of item scores on compliance with the health protocol and self-protective motivation of students at the Faculty of Nursing of Universitas Andalas (n = 253)

Variable Health protocol compliance	Median	SD	Min-Max
Washing hands	3.23	0.3	2.74 –3.41
Wearing a mask	3.71	0.6	2.49 – 3.89
Keeping a distance	3.28	0.4	2.98 – 3.73
Avoiding crowds	3.17	0.0	3.08 – 3.13
Reducing mobility	3.10	0.7	2.25 – 3.68
Self -protective motivation			
Severity	4.50	0.49	3.68 – 4.55
Vulnerability	4.09	0.26	3.81 – 4.32
Intrinsic rewards	2.72	0.56	1.96 – 3.06
Extrinsic rewards	3.59	0.83	2.23- 3.74
Response efficacy	4.13	0.27	4.00 – 4.51
Self-efficacy	4.24	0.44	3.93 – 4.55
Response cost	3.87	0.88	2.57 – 4.24

Table 3 shows the median compliance with the health protocol for each item. The highest median was observed when wearing a mask (3.71, min-max = 2.49-3.89), followed by maintaining distance (3.28, min-max = 2.98-3.73), washing hands (3.23, min-max = 2.74-3.41), avoiding crowds (3.17, min-max = 3.08-3.13), and the lowest median was recorded for reducing mobility (3.10, min-max = 2.25-3.68)./

Table 3 also presents the mean of seven indicators of motivation for self-protection. The highest medians for severity (4.50), self-efficacy (4.24), response efficacy (4.13), and vulnerability (4.09) were found. In contrast, the intrinsic indicator of motivation to self-protection had the lowest median (2.72).

Table 4. Correlation between self-protective motivation and compliance with health protocols of nursing students of the Universitas Andalas

Variable	Mean	p-value	Correlation coefficient
Self-protection motivation	74.06	0.000	0.419
Compliance	60.66		

Table 4 shows the relationship between self-protection motivation and compliance. The correlation coefficient of 0.419 indicates a positively correlated relationship with a moderate strength correlation (0.40 - 0.59). Therefore, it can be concluded that higher self-protective motivation is associated with increased compliance with health protocols.

DISCUSSION

This study is crucial as university students represent future change agents and serve as role models for the community, especially in demonstrating discipline in adhering to health protocols during nonnatural disasters to control the spread of diseases. The results of this study indicate a general correlation between self-protective motivation and the behaviors of the health protocol.

Compliance with health protocols

During the COVID-19 pandemic, the World Health Organization (WHO) provided several health protocols to protect ourselves and those around us (World Health Organization (WHO), 2023). These protocols include maintaining a physical distance of at least 1 meter from others, avoiding crowds, reducing mobility by staying at home unless except for essential needs, wearing a properly fitted mask when physical distancing and frequently cleaning hands with an alcohol-based hand rub or soap and water.

This study closely examines five health-related behaviors associated with these protocols and assesses compliance among university students. The behaviors investigated are hand washing, mask wearing, adherence to physical distancing, avoidance of crowds, and reduction of mobility. The study focuses on university students engaged in online learning during the COVID-19 era, some of whom may need to access the Internet through cafes or remain in rented accommodations. Therefore, understanding and evaluating these behaviors is crucial.

This study revealed a notable trend in overall compliance of students with health protocols. Despite their commendable adhesion, a notable challenge was observed with respect to the implementation of the reduced mobilization measure among students. This study found that high-compliant health protocols included wearing masks, followed by maintaining distance and hand washing. However, when it comes to avoiding crowds and reducing mobility, the results are less favorable.

The findings of this study reinforce those of previous research on compliance among different communities in Indonesia. Sitohang et al. (2021) provided contextual support by demonstrating regional variations, indicating that respondents from western Indonesia exhibit a higher adherence to COVID-19 protocols, particularly in self-protection and social distancing, compared to their counterparts in eastern Indonesia. According to that study, the implementation of health behavior can be influenced by a combination of government policies and the facilities available in the surrounding areas of the students.

Meanwhile, there are challenges with respect to behavior to avoid crowds and minimize mobility. The daily schedules of students, characterized by extensive participation in extracurricular activities such as organizational tasks, group projects, and campus events, have made reducing mobility challenging. Furthermore, the students' inclination to frequent open spaces such as cafes or public areas for group discussions further complicates the effort to enforce reduced mobilization measures. (Saras et al., 2021).

These findings align with Lathifa et al. (2021), who emphasized that the reduction of outdoor activities is a health protocol commonly ignored by students, indicating a persistent challenge to limit visits to public spaces, avoid physical contact and reduce social interactions. A study by Sondakh et al. (2022), which surveyed medical students,

reinforces these observations, revealing suboptimal practice of health protocols, particularly in aspects beyond mask-wearing and handwashing.

Despite these challenges, the study underscores the positive overall trend of compliance among health students. It recognizes the crucial role of nursing students, given a sufficient educational foundation, as potential change agents and social controllers. The suggestion that nursing students can contribute to public awareness through educational campaigns and preventive actions emphasizes the importance of instilling a comprehensive understanding of the current pandemic situation within the community (Saputra et al., 2021). The study echoes the sentiment that collective adherence to health protocols is paramount in preventing transmission and that effective prevention requires a communal effort (Hakim, 2021; Niman et al., 2021).

In essence, the study provides a nuanced depiction of the challenges and successes in complying with health protocols among university students, emphasizing the need for targeted interventions, educational initiatives, and a collective commitment to mitigating the spread of infectious diseases. The multidimensional nature of student activities and behaviors highlights the importance of comprehensive strategies to address the intricacies of adherence to health protocols in a university setting.

Challenges arise when studies reveal that the spread of COVID-19 is significantly influenced by human mobility. It is also linked to an increase in the resistance of the population to the virus through natural immunity and vaccination. Although the pandemic appears to be over, there is a new threat due to the increase in the number of new cases of COVID-19. Therefore, reducing mobility and avoiding crowds continue to be crucial, especially at points of interest.

Two key factors are taken into account: various types of points of interest (POIs), such as transit stations, groceries, pharmacies, retail and recreation venues, workplaces, and parks, and the emergence of the Delta variant. There is a correlation between the movement of people within these POIs and the emergence of COVID-19 variants (Albassam et al., 2023). The findings indicate that retail and recreational venues, transit stations and workplaces derive the greatest benefit from mobility restrictions, particularly when the fraction of the population is below 25%-30%. Groceries and pharmacies can also experience advantages from mobility restrictions when the population resistance fraction is low. On the contrary, there are minimal benefits in parks (Albassam et al., 2023).

Self-protective motivation

Self-protective motivation involves the desire to protect oneself from unfavorable self-perceptions. It represents a type of self-evaluative drive connected to the motivation to avoid negative outcomes. This motive focuses on steering clear of negativity in one's self-perceptions, in contrast to the self-enhancement motive, which strives to foster positivity in how one views oneself (Giacomin & Jordan, 2020).

This study investigates the self-protective motivation of students to investigate their personal motivation for self-protection. The study provides a detailed examination that looks at the intricate dynamics that influence their commitment to COVID-19 protocols. The results depict an overall moderate level of motivation among nursing students, with discernible variations in different motivation indicators. Identification of well-performing indicators, such as recognizing COVID-19 as a serious threat, fearing its contraction, and valuing external recognition for adhering to health protocols, underscores the multifaceted nature of motivation, involving both intrinsic and extrinsic factors.

A crucial finding in this study is the noticeable gap in motivation associated with intrinsic rewards, particularly self-pleasure. This gap is shown by how students exhibit behaviors such as removing masks during social interactions and neglecting physical distancing guidelines, suggesting a disconnect between their awareness of COVID-19 dangers and their intrinsic motivation. Recognizing the pivotal role of intrinsic rewards - marked by personal satisfaction and enthusiasm - in fostering sustained adherence, the study highlights the urgency of targeted interventions to address this gap.

The concept of intrinsic and extrinsic motivation is discussed by Al-Rasheed (2020), who emphasized that people with high motivation in both aspects are more likely to adopt a variety of protective behaviors. Furthermore, Saputra et al. (2021) research highlights high intrinsic motivation among nursing students to prevent the COVID-19 pandemic, which reinforces the central notion that cultivating robust self-protective motivation is crucial to ensure compliance with health protocols.

Beyond individual behaviors, this study investigated the broader significance of motivation in preventing COVID-19 transmission. The call for robust self-protective motivation among students highlights the crucial role of educational institutions in fostering awareness, belief, and intrinsic motivation. Strategies are proposed to enhance intrinsic rewards, including personalized education campaigns that emphasize the profound impact of individual actions on community well-being.

This study reveals a nuanced landscape of nursing student motivation, emphasizing the intricate interplay between intrinsic and extrinsic factors in shaping their adherence to the COVID-19 protocols. The identified gap in intrinsic reward motivation becomes a focal point for future interventions, urging educators and policymakers to tailor strategies that elevate students' awareness and belief in the significance of their actions. Harmonizing with existing research strengthens the generalizability of these findings, pointing toward shared challenges and opportunities to cultivate motivation for pandemic prevention among nursing students. Therefore, this study contributes to our understanding of student motivation and provides actionable insights for institutions aiming to enhance adherence to health protocols in the context of a global health crisis.

Relationship between self-protective motivation and health protocol compliance

Examining the correlation between motivation and compliance with health protocols among university students, as conducted in this study, provides significant information on the intricate dynamics that shape the adherence of individuals to preventive measures in the context of the COVID-19 pandemic. The results reveal an optimistic correlation with a weak unidirectional relationship, suggesting that higher self-protective motivation increases the likelihood of implementing health protocols. This finding aligns with Al-Rasheed's (2020) research, emphasizing a significant relationship between self-protection motivation and compliance with health protocols, underscoring the predictive role of behavioral intention in fostering public protective behavior.

Luo et al. (2020) linked motivation with healthy behavior. This statement supports the notion that behavior is influenced by the drive to achieve specific goals and aligns with the understanding that individuals with elevated self-protective motivation are more inclined to engage in actions that contribute to both personal well-being and the collective health of the community.

Embracing preventive health measures is one of the most effective strategies to combat the COVID-19 pandemic. A previous study explored how exposure to health information influenced individuals to adopt self-protective behaviors in the context of infectious diseases. The study showed that health consciousness positively impacted subsequent variables through interpersonal discussions and exposure to COVID-19-related information on social media (Guo et al., 2023). The interaction between interpersonal discussions and exposure to social media was found to have a positive association with elements derived from the theory of planned behavior and risk perception. In addition, the findings indicated that self-protective behavior was positively predicted by components of the theory of planned behavior and risk perceptions, with subjective norms being the main predictor, followed by attitudes and self-efficacy (Guo et al., 2023).

Meanwhile, this study delves into the complexities of motivation by differentiating between intrinsic and extrinsic reward motivations. The results suggest the connection between high intrinsic reward motivation and belief in compliance with health protocols. Therefore, personal satisfaction and enthusiasm play a critical role in fostering sustained adherence.

A study investigated aspects of protection motivation theory that influence compliance with social distancing policy in all public areas among the general adult population in Hong Kong. The study found that the compliance rate with behavior was high, 78%. A regression analysis showed that, among the four aspects of the protection motivation theory, including perceived severity, perceived susceptibility, perceived response efficacy, and perceived self-efficacy, perceived response efficacy and perceived self-efficacy, perceived response efficacy, and perceived self-efficacy were significantly and positively correlated with compliance with BG4PA ($p<0.05$) compared to other aspects. Therefore, it is recommended that health promotion efforts focus on improving coping appraisal (Yu et al., 2022).

Meanwhile, this study focused on a detailed analysis of several health protocols, such as handwashing, physical distancing, and avoiding crowds, to provide a more nuanced understanding of how motivation impacts specific preventive actions. However, this study has several limitations, particularly in how it broadly measured motivation among all students, regardless of their compliance levels. This acknowledgment stresses the need for more focused research to unravel the nuanced reasons for noncompliance among students. Moreover, considering the diverse motivations and behaviors within the student population, this approach highlights the importance of targeted interventions in addressing the specific challenges faced by noncompliant individuals.

Furthermore, the chosen online data collection method, while efficient, introduces another limitation by potentially excluding participants without internet access, thereby introducing a bias in the sample. This recognition of methodological constraints underscores the importance of nuanced interpretation and application of this study's findings.

CONCLUSION AND RECOMMENDATION

This study contributes significantly to our understanding of the interaction between motivation and compliance with health protocols. Its alignment with existing research strengthens the generalizability of the findings, while the identified limitations provide valuable information for future, more nuanced investigations. The call for specific research focusing on the causes of noncompliance and consideration of diverse data collection methods points toward a more comprehensive and targeted approach in developing effective public health interventions.

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