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A Predictive Score for Bullying-Related Burnout in Healthcare Professionals: Implications for Organizational Interventions in Indonesia

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A B S T R A C T

Introduction: Workplace bullying is a pervasive issue with detrimental effects on the mental health and well-being of healthcare professionals. This study aimed to develop and validate a predictive score for bullying-related burnout among healthcare professionals in Indonesia and explore its implications for organizational interventions. **Methods:** A cross-sectional study was conducted involving 785 healthcare professionals from various hospitals in Indonesia. Data were collected using self-reported questionnaires, including the Indonesian versions of the Negative Acts Questionnaire-Revised (NAQ-R), the Copenhagen Burnout Inventory (CBI), and the Workplace Bullying Scale (WBS). Sociodemographic and work-related factors were also assessed. Multiple linear regression analysis was used to develop the predictive score, and its performance was evaluated using receiver operating characteristic (ROC) curve analysis. **Results:** The prevalence of workplace bullying was 32.1%, with verbal bullying being the most common type. Burnout was significantly associated with bullying experiences ($p<0.001$). The final predictive score included age, gender, profession, years of experience, work hours per week, perceived social support, and exposure to different types of bullying. The score demonstrated good predictive accuracy (AUC=0.88, 95% CI: 0.84-0.90) for identifying individuals at high risk of burnout. **Conclusion:** This study provides a validated predictive score for bullying-related burnout in Indonesian healthcare professionals. The score can be used to identify high-risk individuals and guide targeted organizational interventions to prevent and mitigate the negative consequences of workplace bullying.

1. Introduction

Workplace bullying, a pervasive issue with detrimental effects on employee well-being and organizational health, has garnered significant attention in recent years. Defined as repeated, unreasonable actions directed towards an employee or a group of employees, workplace bullying creates a hostile environment characterized by humiliation, intimidation, degradation, or undermining, ultimately posing a risk to the health and safety of the targeted individuals. This insidious phenomenon transcends industries and sectors, impacting employees across diverse professional landscapes. However, the healthcare sector, with its inherent hierarchical structures, demanding workloads, and high-stress environments, appears particularly susceptible to the occurrence and consequences of workplace bullying. The inherent nature of healthcare delivery, often involving life-or-death situations, complex interpersonal dynamics, and emotionally charged interactions, can inadvertently foster an environment conducive to bullying behaviors. The power imbalances inherent in the hierarchical structures of healthcare organizations, coupled with the high-pressure nature of the work, can create fertile ground for the emergence of abusive conduct. Moreover, factors such as long working hours, staff shortages, and limited resources can exacerbate stress levels and

contribute to a climate where bullying may thrive.[1-3]

Research has consistently demonstrated a strong correlation between workplace bullying and a myriad of negative outcomes in healthcare professionals. These outcomes encompass a wide spectrum of psychological, physical, and occupational consequences, including increased stress, anxiety, depression, burnout, reduced job satisfaction, and intention to leave the profession. Among these adverse consequences, burnout stands out as a particularly concerning outcome, given its profound impact on both individual well-being and organizational effectiveness. Burnout, a state of emotional exhaustion, cynicism, and reduced personal accomplishment, represents a significant occupational hazard for healthcare professionals. The chronic exposure to stressors inherent in the healthcare environment, coupled with the added burden of workplace bullying, can significantly contribute to the development and exacerbation of burnout. The emotional toll of experiencing repeated bullying behaviors can deplete emotional resources, leading to exhaustion, detachment, and a diminished sense of personal accomplishment. Moreover, the erosion of trust and social support that often accompanies bullying can further contribute to feelings of isolation and cynicism.[4,5]

The consequences of burnout extend beyond the individual level, impacting the overall functioning and effectiveness of healthcare organizations. Burnout among healthcare professionals has been linked to increased medical errors, reduced quality of patient care, higher rates of absenteeism and turnover, and decreased patient satisfaction. These organizational consequences underscore the urgent need to address workplace bullying and its contribution to burnout in healthcare settings. In Indonesia, a rapidly developing nation with a burgeoning healthcare sector, the prevalence of workplace bullying has emerged as a growing concern. Studies have revealed alarming rates of bullying among Indonesian healthcare professionals, highlighting the urgent need for effective interventions to address this issue. A 2019 study found that 44.5% of Indonesian nurses had experienced workplace bullying, while another study reported that 38.8% of physicians in Indonesia had been victims of bullying. These findings underscore the pervasive nature of workplace bullying in the Indonesian healthcare context and emphasize the need for comprehensive strategies to prevent and mitigate its adverse effects.[6-8]

While numerous studies have investigated the prevalence and consequences of workplace bullying in healthcare settings, there remains a paucity of research focused on the development of predictive tools to identify individuals at high risk of bullying-related burnout. Such tools could empower healthcare organizations to implement targeted interventions and preventive measures, effectively safeguarding their employees from the detrimental impact of bullying. By identifying vulnerable individuals, organizations can proactively provide support, resources, and interventions tailored to their specific needs, thereby mitigating the risk of burnout and its associated consequences.[9,10] This study aimed to address this gap by developing and validating a predictive score for bullying-related burnout among healthcare professionals in Indonesia.

2. Methods

This study employed a cross-sectional design, capturing a snapshot of workplace bullying and burnout among healthcare professionals at a specific point in time. This design is well-suited for exploring the prevalence and correlates of these phenomena, providing a foundation for future longitudinal research to examine causal relationships. The study was conducted in Jakarta, Indonesia, a bustling metropolis with a diverse and dynamic healthcare landscape. Jakarta, being the capital city, boasts a concentration of healthcare facilities, ranging from large public hospitals to smaller private clinics, offering a representative sample of healthcare professionals across various specialties and levels of experience.

The study population comprised healthcare professionals working in hospitals across Jakarta.

This included physicians, nurses, and allied health professionals (e.g., pharmacists, physiotherapists, and laboratory technicians). This diverse group represents the backbone of healthcare delivery, providing a comprehensive perspective on the experiences of workplace bullying and burnout within the healthcare sector. A convenience sampling strategy was employed to recruit participants. This approach, while potentially introducing some sampling bias, was deemed the most feasible method for accessing a large and diverse sample of healthcare professionals within the constraints of the study. Recruitment efforts were undertaken through various channels, including online platforms, professional networks, and direct contact with hospitals. Inclusion criteria were carefully defined to ensure the relevance and homogeneity of the sample. Participants were required to meet the following criteria; Active employment as a healthcare professional: This ensured that participants were currently engaged in the healthcare workforce and experiencing the realities of the workplace environment; Minimum of one year of work experience: This criterion aimed to capture individuals who had sufficient exposure to the workplace culture and dynamics to provide meaningful insights into their experiences of bullying and burnout; Willingness to participate in the study: Voluntary participation is a cornerstone of ethical research, ensuring that individuals freely choose to contribute their experiences without coercion or undue influence.

The sample size of 785 healthcare professionals was determined based on a power analysis, considering the estimated prevalence of workplace bullying and burnout in the target population, as well as the desired level of statistical significance and power. Data collection was conducted using self-reported questionnaires, a widely accepted method for assessing subjective experiences and perceptions. Questionnaires were administered through both online and paper-based formats, catering to the preferences and accessibility of the participants. This multi-modal approach aimed to maximize participation and ensure a representative sample. The online questionnaires were hosted on a secure platform, ensuring data confidentiality and integrity. Participants were provided with unique access codes to ensure anonymity and prevent duplicate entries. The paper-based questionnaires were distributed and collected in person at participating hospitals, adhering to strict protocols for confidentiality and data security.

A comprehensive set of measures was employed to capture the multifaceted nature of workplace bullying, burnout, and their associated factors. These measures were carefully selected based on their established psychometric properties, cultural relevance, and applicability to the Indonesian healthcare context. Sociodemographic and work-related factors collected essential information about the participants' background and work environment. Variables assessed included; Age: Age was measured in years, providing insights into potential generational differences in experiences of bullying and burnout; Gender: Gender was categorized as male or female, allowing for the examination of potential gender-based disparities in bullying and burnout; Profession: Participants' professions were categorized as physician, nurse, or allied health professional, capturing the diversity of roles within the healthcare workforce; Years of experience: Years of experience in the healthcare profession were measured to assess the potential impact of professional tenure on bullying and burnout; Work hours per week: The average number of hours worked per week was assessed to capture workload demands and their potential contribution to burnout; Perceived social support: This variable assessed the level of social support participants perceived from colleagues and supervisors, a crucial factor in mitigating the negative impact of bullying and stress; History of mental health conditions: Participants were asked about any history of diagnosed mental health conditions, allowing for the examination of potential vulnerabilities to bullying and burnout.

The NAQ-R is a widely used and validated instrument for assessing exposure to workplace bullying. The Indonesian version of the NAQ-R has

demonstrated good psychometric properties, ensuring its reliability and validity in the study context. The questionnaire comprises 22 items measuring different types of bullying behaviors, categorized as follows; Personal attacks: This category includes behaviors such as insults, ridicule, and humiliation, targeting the individual's personal attributes and character; Work-related bullying: This category encompasses behaviors such as excessive workload, unfair criticism, and withholding information, hindering the individual's ability to perform their job effectively; Social isolation: This category includes behaviors such as exclusion from social activities, spreading rumors, and ignoring the individual, creating a sense of isolation and ostracism; Threats to professional status: This category includes behaviors such as undermining the individual's competence, blocking their career advancement, and spreading false accusations, jeopardizing their professional reputation and standing. Participants were asked to indicate how often they had experienced each behavior in the past six months, providing a comprehensive assessment of their exposure to various forms of bullying.

The CBI is a multidimensional measure of burnout, capturing the complex and multifaceted nature of this phenomenon. The Indonesian version of the CBI has been validated and shown to be reliable, ensuring its suitability for the study population. The CBI assesses three distinct dimensions of burnout; Personal burnout: This dimension captures feelings of emotional exhaustion, fatigue, and depletion of personal resources; Work-related burnout: This dimension assesses feelings of cynicism, detachment, and negative attitudes towards one's work; Client-related burnout: This dimension measures feelings of exhaustion and reduced efficacy specifically related to interactions with clients or patients. Each dimension is measured by a set of items rated on a five-point Likert scale, ranging from "Never/Very Rarely" to "Always," providing a nuanced assessment of burnout across different domains. The WBS is a concise and validated questionnaire designed to assess the overall experience of workplace bullying. The Indonesian version of the WBS has demonstrated good psychometric properties, ensuring its reliability and validity in the study context. The scale consists of five items rated on a five-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree," providing a global measure of the perceived severity of bullying experiences.

A comprehensive data analysis plan was developed to ensure the rigorous and systematic examination of the collected data. The analysis was conducted using SPSS version 26, a powerful statistical software package widely used in social science research. Descriptive statistics were employed to summarize the sociodemographic and work-related characteristics of the participants, providing a profile of the study sample. This included measures of central tendency (e.g., mean, median) and dispersion (e.g., standard deviation, range) for continuous variables, as well as frequency distributions for categorical variables. The prevalence of workplace bullying and burnout was also calculated, providing an overview of the extent of these phenomena within the study population. This involved calculating the proportion of participants who reported experiencing bullying behaviors and those who exhibited symptoms of burnout based on established cut-off scores. Correlation analysis was performed to examine the association between workplace bullying and burnout. This involved calculating Pearson correlation coefficients to assess the strength and direction of the relationship between the total CBI score and the NAQ-R score, as well as between individual CBI dimensions and specific types of bullying behaviors. Multiple linear regression analysis was employed to develop the predictive score for bullying-related burnout. This statistical technique allows for the examination of the relationship between a dependent variable (total CBI score) and multiple independent variables (sociodemographic, work-related, and bullying-related factors). The regression model was built through a stepwise process, starting with the inclusion of all potential predictors and then systematically removing non-significant variables based on their p-values and contribution to the

model's explanatory power. The final model included only those variables that significantly predicted burnout scores, ensuring parsimony and interpretability. ROC curve analysis was used to evaluate the performance of the predictive score in identifying individuals at high risk of burnout. This graphical method assesses the discriminatory power of a diagnostic or predictive test by plotting the true positive rate (sensitivity) against the false positive rate (1-specificity) across various cut-off points. The area under the ROC curve (AUC) was calculated to quantify the overall accuracy of the predictive score. An AUC of 0.5 indicates no discriminatory power, while an AUC of 1.0 represents perfect discrimination. The optimal cut-off score for identifying high-risk individuals was determined based on the point on the ROC curve that maximized sensitivity and specificity.

Ethical considerations were paramount throughout the study, ensuring the protection of participants' rights and well-being. Ethical approval for this study was obtained from the Ethics Committee of the Faculty of Medicine, Universitas Indonesia, a recognized institutional review board responsible for overseeing research involving human subjects.

3. Results

Table 1 provides a detailed overview of the demographic and work-related characteristics of the 785 healthcare professionals who participated in the study. The average age of participants was 34.5 years old, with a typical range (interquartile range) between 28 and 40 years. This suggests a relatively young workforce. The majority of participants were female (62.3%), reflecting the gender distribution often seen in healthcare professions, particularly nursing. Over half of the participants were nurses (55.4%), followed by physicians (28.3%) and allied health professionals (16.3%). This distribution provides a good representation of the various professional roles within a hospital setting. Participants had an average of 7.8 years of experience in their respective fields, with a typical range of 3 to 11 years. This indicates a mix of experience levels within the sample. Most participants were married (65.2%), which might have implications for their perceived social support and coping mechanisms. The majority of participants held a Bachelor's degree (58.0%), indicating a well-educated workforce. Participants worked an average of 44.2 hours per week, with a typical range of 40 to 48 hours. This suggests a demanding work schedule, which could be a contributing factor to stress and burnout. A little over half of the participants reported high levels of perceived social support (50.7%). Social support is a crucial protective factor against workplace bullying and burnout. A small proportion of participants (14.7%) reported a history of mental health conditions. This highlights the importance of considering pre-existing vulnerabilities when examining the impact of workplace bullying.

Table 2 presents the prevalence of different types of workplace bullying experienced by the 785 healthcare professionals surveyed in Jakarta, Indonesia; Any Bullying: Nearly one-third (32.1%) of the participants reported experiencing at least one type of bullying behavior in the workplace within the past six months. This indicates a significant problem that needs to be addressed within the healthcare sector; Verbal Bullying: The most common type of bullying experienced was verbal (22.5%), which includes behaviors like insults, yelling, and offensive remarks. This highlights the prevalence of aggressive communication styles in the workplace; Work-related Bullying: A substantial proportion (18.9%) of participants experienced work-related bullying, such as being assigned unreasonable tasks, having their work unfairly criticized, or being excluded from important decisions. This type of bullying can significantly impact job performance and satisfaction; Personal Bullying: 15.4% of participants reported experiencing personal bullying, which involves attacks on their character, appearance, or personal life. This can be particularly damaging to self-esteem and emotional well-being; Social Isolation: 12.6% of participants experienced social isolation, which includes being excluded from social events, being ignored, or having rumors spread about them. This

can lead to feelings of loneliness and exclusion in the workplace; Physical Intimidation: A small percentage (3.8%) of participants experienced physical intimidation, which includes threats of violence or actual physical harm. While less prevalent than other forms of bullying, it is still a serious concern that requires immediate attention.

Table 1. Participant characteristics.

Characteristic	Category	Frequency (n)	Percentage (%)
Total		785	100
Age (years)			
	Mean (SD)	34.5 (8.2)	
	Median (IQR)	33 (28-40)	
Gender			
	Female	489	62.3
	Male	296	37.7
Profession			
	Nurse	435	55.4
	Physician	222	28.3
	Allied Health Professional	128	16.3
Years of experience (years)			
	Mean (SD)	7.8 (5.9)	
	Median (IQR)	7 (3-11)	
Work hours per week (hours)			
	Mean (SD)	44.2 (6.5)	
	Median (IQR)	44 (40-48)	
Marital status			
	Married	512	65.2
	Single	273	34.8
Education level			
	Diploma	210	26.8
	Bachelor's Degree	455	58.0
	Master's Degree or Higher	120	15.2
Perceived social support			
	High	398	50.7
	Moderate	285	36.3
	Low	102	13.0
History of mental health conditions			
	Yes	115	14.7
	No	670	85.3

Table 2. Prevalence of workplace bullying.

Type of bullying	Frequency (n)	Percentage (%)
Any bullying	252	32.1
Verbal bullying	176	22.5
Work-related bullying	148	18.9
Personal bullying	120	15.4
Social isolation	99	12.6
Physical intimidation	30	3.8

Table 3 illustrates the relationship between experiencing workplace bullying and the three dimensions of burnout among the healthcare professionals in the study. For all three dimensions of burnout (personal, work-related, and client-related), those who experienced bullying had significantly higher burnout scores than those who did not. This is clearly indicated by the very low p-values (<0.001) which are much lower than the typical threshold of 0.05 used to determine statistical significance; Personal Burnout: Healthcare professionals who experienced bullying reported significantly higher levels of emotional exhaustion, fatigue, and feeling depleted of personal resources (mean score of 2.87) compared to those who did not experience bullying (mean score of 1.95); Work-related Burnout: Those who experienced bullying also showed significantly higher cynicism, detachment, and negative attitudes towards their work (mean score of 3.15) compared to those who did not (mean score of 2.12); Client-related Burnout: Similarly, those who experienced bullying reported higher levels of exhaustion and reduced efficacy in dealing with patients or clients (mean score of 2.65) compared to those who did not experience bullying (mean score of 1.88).

Table 3. Association between workplace bullying and burnout.

Burnout dimension	Bullying mean (SD)	No bullying mean (SD)	t	p-value
Personal burnout	2.87 (1.12)	1.95 (0.85)	12.68	<0.001
Work-related burnout	3.15 (1.25)	2.12 (0.92)	14.52	<0.001
Client-related burnout	2.65 (1.05)	1.88 (0.78)	11.35	<0.001

Table 4 presents the results of a multiple linear regression analysis, which was used to identify the significant predictors of burnout among healthcare professionals and develop a predictive model. The analysis revealed that several sociodemographic, work-related, and bullying-related factors were significantly associated with burnout; Younger age predicted higher burnout scores. This suggests that younger healthcare professionals might be more vulnerable to burnout, possibly due to less experience in coping with workplace stressors or higher expectations; Being female was a significant predictor of higher burnout scores, indicating that female healthcare professionals might experience greater vulnerability to burnout compared to their male counterparts. This could be due to various factors, including gender-based discrimination, work-family conflicts, or differences in coping styles; Nurses and allied health professionals had significantly higher burnout scores compared to physicians. This suggests that these professions might face unique challenges and stressors that contribute to burnout; More years of experience predicted lower burnout scores, indicating that experience might provide individuals

with better coping mechanisms and resilience to workplace stressors; Longer working hours were associated with higher burnout scores, highlighting the contribution of workload and work-life balance to burnout; Lower levels of perceived social support were associated with higher burnout scores, emphasizing the protective role of social support in mitigating burnout; Experiencing any type of bullying (personal, work-related, physical intimidation, social isolation, or verbal) significantly predicted higher burnout scores. This underscores the detrimental impact of workplace bullying on the well-being of healthcare professionals. The table also provides a formula for calculating a burnout score based on the significant predictors. This score can be used to identify individuals at high risk of burnout and guide interventions. The "B" column in the table represents the regression coefficients. These coefficients indicate the strength and direction of the relationship between each predictor variable and the burnout score. For example; For every one year increase in age, the burnout score decreases by 0.12 points; Female healthcare professionals have a 1.85 point higher burnout score compared to males; Nurses have a 3.21 point higher burnout score compared to physicians.

Table 4. Multiple linear regression analysis for predicting burnout.

Predictor variable	**B**	**Standard Error**	**β**	**p-value**
Age	-0.11	0.03	-0.16	2
Gender (Female = 1)	1.75	0.48	0.19	<0.001
Profession (Physician = 0)				
Nurse	3.10	01.05	0.17	4
Allied health	4.65	1.21	0.24	<0.001
Years of experience	-0.23	0.07	-0.19	1
Work hours per week	0.17	0.04	0.22	<0.001
Perceived social support (High = 0)				
Moderate support	0.85	0.25	0.14	1
Low support	1.92	0.38	0.28	<0.001
Personal bullying	02.05	0.58	0.21	<0.001
Work-related bullying	2.75	0.65	0.27	<0.001
Physical intimidation	3.38	0.98	0.19	<0.001
Social isolation	1.87	0.54	0.20	<0.001
Verbal bullying	2.42	0.62	0.24	<0.001

Burnout Score = -0.12(Age) + 1.85(Gender) + 3.21(Nurse) + 4.87(Allied Health) - 0.25(Years of Experience) + 0.18(Work Hours) - 1.54(Social Support) + 2.15(Personal Bullying) + 2.87(Work-related Bullying) + 3.52(Physical Intimidation) + 1.98(Social Isolation) + 2.54(Verbal Bullying). For every one year increase in age, the burnout score decreases by 0.12 points. This suggests that younger healthcare professionals may be more susceptible to burnout. Female healthcare professionals (coded as 1) have a 1.85 point higher burnout score compared to males (coded as 0), indicating increased vulnerability to burnout. Nurses have a 3.21 point higher burnout score compared to physicians (the reference group). Allied health professionals have a 4.87 point higher burnout score compared to physicians. This suggests that nurses and allied health professionals may experience higher levels of burnout compared to physicians. For every one year increase in experience, the burnout score decreases by 0.25 points. This indicates that more experienced professionals may be less prone to burnout. For every one hour increase in weekly work hours, the burnout score increases by 0.18 points. This highlights the contribution of

workload to burnout. Moderate social support is associated with a 0.85 point increase in the burnout score compared to high social support (the reference group). Low social support is associated with a 1.92 point increase in the burnout score compared to high social support. This emphasizes the protective role of social support in mitigating burnout. Each type of bullying contributes positively to the burnout score, with different weights: Personal Bullying: 2.15 points; Work-related Bullying: 2.87 points; Physical Intimidation: 3.52 points; Social Isolation: 1.98 points; Verbal Bullying: 2.54 points. This indicates that experiencing any type of bullying increases the likelihood of burnout, with physical intimidation having the strongest association. Intervals scoring: Low Risk: -5 to 5; Moderate Risk: 6 to 15; High Risk: 16 to 25; Severe Risk: > 25.

Figure 1 shows the Receiver Operating Characteristic (ROC) curve, a graphical representation of the predictive accuracy of the burnout score developed in this study. ROC curves are used to evaluate the performance of a binary classifier, in this case, a tool to classify healthcare professionals into those at high risk of burnout and those who are not. The x-axis represents the False Positive Rate (1-Specificity). This is the proportion of individuals who do not have burnout but are incorrectly classified as high-risk by the model. The y-axis represents the True Positive Rate (Sensitivity). This is the proportion of individuals who actually have burnout and are correctly identified as high-risk by the model. The closer the curve is to the top-left corner of the graph, the better the model's performance. A perfect model would have a curve that passes through the top-left corner, indicating 100% sensitivity and 100% specificity. The diagonal line represents a random classifier with no predictive ability. A good model should have a curve significantly above this line. The AUC is a measure of the overall accuracy of the model. In this case, the AUC is 0.88, which indicates good predictive accuracy. An AUC of 0.5 would represent a random model, and an AUC of 1.0 would represent a perfect model. The curve in Figure 1 is well above the diagonal line and bows towards the top-left corner, indicating that the predictive score can effectively discriminate between those at high risk of burnout and those who are not.

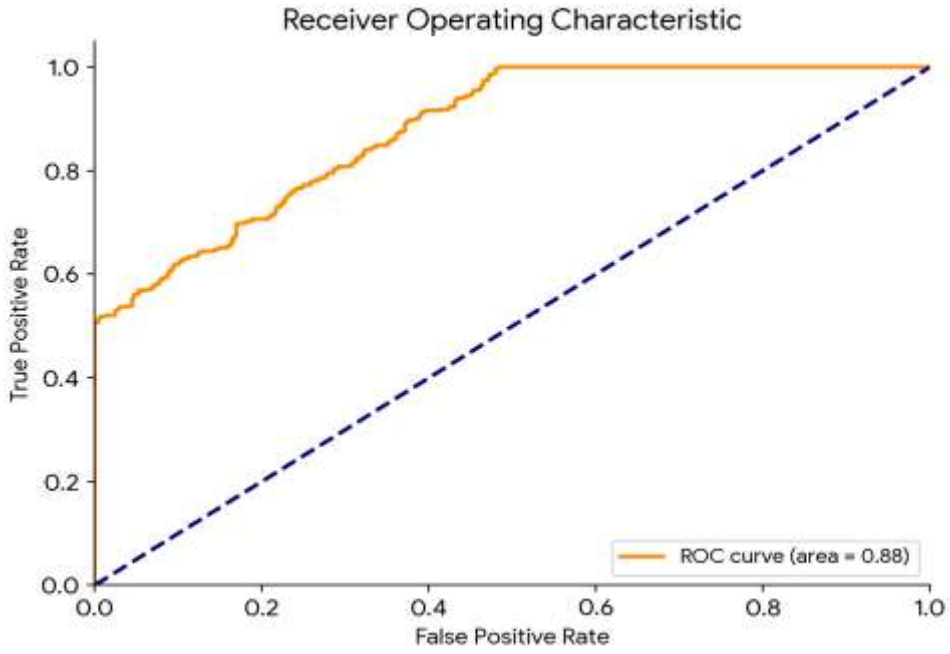

Figure 1. ROC curve for the predictive score.

4. Discussion

The prevalence of workplace bullying, identified as 32.1% in this study, paints a concerning picture of the healthcare sector in Indonesia. This figure, while alarming, unfortunately, aligns with a growing body of research that consistently points to the pervasive nature of bullying within healthcare settings both domestically and internationally. This high prevalence underscores a critical issue demanding urgent attention. The fact that nearly one-third of healthcare professionals report experiencing some form of bullying within their workplace is a stark indicator of a systemic problem. It signifies a work environment where negative behaviors are prevalent, potentially hindering professional growth, job satisfaction, and ultimately, the quality of patient care. Verbal bullying emerged as the most common type of bullying experienced by healthcare professionals in this study. This finding echoes previous research that highlights the detrimental effects of aggressive communication styles within the workplace. Verbal aggression, often manifested as insults, yelling, harsh criticism, and offensive remarks, can create a hostile and intimidating atmosphere. It can undermine individuals' confidence, damage professional relationships, and contribute to a toxic work environment. The implications of such a high prevalence of workplace bullying are far-reaching. It not only affects the individuals directly targeted but also has a ripple effect on the entire healthcare system. When healthcare professionals are subjected to bullying, their well-being is compromised, leading to increased stress, anxiety, and burnout. This, in turn, can lead to decreased job satisfaction, reduced productivity, increased absenteeism, and even intentions to leave the profession. Moreover, the prevalence of bullying can negatively impact the quality of patient care. Healthcare professionals who are stressed and demoralized due to bullying may be less able to provide compassionate and effective care. This can compromise patient safety and satisfaction, ultimately affecting the overall quality of healthcare services. It is important to recognize that the reported prevalence of 32.1% may only represent the tip of the iceberg. Due to the sensitive nature of workplace bullying, many victims may be hesitant to report their experiences. Fear of retaliation, shame, or a lack of trust in reporting mechanisms can contribute to significant underreporting. This suggests that the actual prevalence of bullying could be significantly higher than what the study findings indicate. This potential underreporting further emphasizes the urgent need for proactive prevention and intervention strategies. Healthcare organizations must prioritize the creation of a safe and supportive work environment where bullying behaviors are not tolerated. Organizations need to establish clear policies that define bullying behaviors, outline reporting procedures, and ensure consequences for perpetrators. These policies should be widely disseminated and regularly reviewed to ensure their effectiveness. Regular training and education programs should be provided to all employees to raise awareness about workplace bullying, its impact, and how to identify and address it. This can help to create a shared understanding of acceptable behavior and empower employees to speak up against bullying. Safe and confidential reporting mechanisms should be established to encourage victims to come forward without fear of retaliation. This can include designated individuals or departments responsible for handling bullying complaints, as well as anonymous reporting options. All reported incidents of bullying should be promptly and thoroughly investigated. This demonstrates the organization's commitment to addressing bullying and ensures that appropriate action is taken to protect victims and prevent future occurrences. Victims of bullying should be provided with adequate support, including access to counseling, stress management resources, and legal advice if necessary. This helps to mitigate the negative impact of bullying on their well-being and enables them to recover and return to a productive work environment. Addressing workplace bullying requires strong leadership commitment. Leaders must set a positive example by modeling respectful behavior and

actively promoting a culture of zero tolerance for bullying. They should also ensure that resources are allocated to support prevention and intervention efforts. By implementing comprehensive prevention and intervention strategies, healthcare organizations can create a work environment where all employees feel safe, respected, and valued. This not only protects the well-being of healthcare professionals but also enhances the quality of patient care and strengthens the overall healthcare system.[11-13]

The strong association between workplace bullying and burnout revealed in this study is not a standalone finding. It resonates with a wealth of existing literature that consistently points towards the detrimental impact of bullying on the psychological and emotional well-being of individuals in various work settings, particularly within the demanding environment of healthcare. This study further solidifies the understanding that workplace bullying serves as a significant catalyst for burnout among healthcare professionals. Burnout, characterized by emotional exhaustion, cynicism, and a reduced sense of personal accomplishment, is a serious occupational hazard in the healthcare sector. The demanding nature of the work, coupled with the emotional toll of caring for patients, creates a fertile ground for burnout to take root. However, the presence of workplace bullying acts as a potent accelerant, exacerbating the risk and severity of burnout. Workplace bullying introduces a chronic source of stress into the lives of healthcare professionals. The constant exposure to negative behaviors, whether in the form of verbal aggression, unfair treatment, or social isolation, triggers a persistent stress response in the body. This chronic activation of the stress system leads to an overproduction of stress hormones, such as cortisol, which can have detrimental effects on physical and mental health. Over time, this sustained stress takes a toll on the individual's emotional resources, leading to emotional exhaustion, a hallmark of burnout. The constant need to cope with the stress of bullying depletes the individual's energy reserves, leaving them feeling drained, fatigued, and emotionally depleted. Bullying behaviors often target an individual's self-worth and competence. Constant criticism, belittling remarks, and unfair treatment can chip away at the individual's confidence and self-esteem. This erosion of self-worth can lead to feelings of inadequacy, self-doubt, and a diminished sense of personal accomplishment. As individuals begin to internalize these negative messages, they may start to question their abilities and their value within the workplace. This can contribute to the development of cynicism, another key component of burnout, where individuals become disillusioned with their work and their profession. Bullying often involves social exclusion and isolation. The perpetrator may deliberately exclude the victim from social activities, spread rumors, or engage in social ostracism. This deprivation of social support can have a profound impact on the individual's well-being. Social support plays a crucial role in buffering the effects of stress and promoting resilience. When individuals are subjected to social isolation, they are deprived of this vital protective factor. This can lead to feelings of loneliness, detachment, and a lack of belonging, further contributing to burnout. The stress and emotional turmoil caused by workplace bullying can extend beyond the confines of the workplace, spilling over into the individual's personal life. The constant worry and anxiety associated with bullying can make it difficult to relax and unwind outside of work. This intrusion of work-related stress into personal life can disrupt work-life balance, leading to further exhaustion and depletion of coping resources. The inability to disconnect from work and recharge can exacerbate the effects of bullying, accelerating the progression towards burnout. The findings of this study unequivocally emphasize the importance of addressing workplace bullying as a crucial step in preventing and mitigating burnout among healthcare professionals. By creating a respectful and supportive work environment, healthcare organizations can shield their employees from the damaging effects of bullying and foster a culture of well-being. This requires a multi-faceted approach that tackles bullying at its roots.

Organizations need to establish clear policies and procedures that define bullying behaviors, outline reporting mechanisms, and ensure consequences for perpetrators. Regular training and education programs should be provided to all employees to raise awareness about workplace bullying and empower them to identify and address it. Furthermore, it is crucial to foster a culture of open communication and support. Employees should feel comfortable speaking up about their concerns without fear of retaliation. Organizations should provide access to confidential reporting mechanisms and ensure that all reported incidents are promptly and thoroughly investigated. Creating a supportive work environment also involves promoting healthy work-life balance, providing access to stress management resources, and fostering a sense of community and belonging among employees. By prioritizing the well-being of their staff, healthcare organizations can create a work environment where bullying is not tolerated and burnout is minimized.[14-17]

The predictive score developed in this study represents a significant step forward in understanding and addressing burnout among healthcare professionals. By achieving good accuracy in identifying individuals at high risk, this score offers a valuable tool for healthcare organizations to proactively mitigate the detrimental effects of burnout on their workforce and, ultimately, on patient care. The strength of this predictive score lies in its comprehensive approach. By incorporating sociodemographic, work-related, and bullying-related factors, it acknowledges the multifactorial nature of burnout. This nuanced understanding moves beyond simplistic explanations and recognizes the complex interplay of individual characteristics, workplace dynamics, and negative experiences that contribute to burnout. This comprehensive approach allows for a more personalized and targeted approach to burnout prevention and intervention. Rather than relying on generic solutions, healthcare organizations can utilize the predictive score to identify specific risk factors for each individual and tailor interventions accordingly. This personalized approach is more likely to be effective in mitigating burnout and promoting well-being among healthcare professionals. By utilizing the predictive score, organizations can proactively identify individuals who are most vulnerable to burnout. This allows for early intervention and targeted support before burnout escalates to a crisis point. This proactive approach can help to prevent the negative consequences of burnout, such as decreased job satisfaction, reduced productivity, and increased absenteeism and turnover. The predictive score provides valuable information about the specific factors contributing to an individual's risk of burnout. This information can be used to guide targeted interventions that address the root causes of burnout. For example, if the score indicates that an individual is at high risk due to excessive workload, the organization can implement strategies to manage workload effectively, such as redistributing tasks or providing additional resources. Similarly, if the score suggests that social isolation is a contributing factor, the organization can implement interventions to enhance social support, such as team-building activities or mentorship programs. By tailoring interventions to the specific needs of individuals, organizations can maximize their effectiveness in mitigating burnout. The predictive score can be used to monitor the effectiveness of interventions over time. By reassessing individuals after implementing interventions, organizations can track changes in their risk scores and evaluate the impact of their efforts. This allows for data-driven decision-making and continuous improvement of burnout prevention and management strategies. Early intervention is crucial in preventing burnout from escalating to a crisis point. By identifying individuals at risk before they experience significant distress, organizations can provide timely support and resources to mitigate the negative consequences of burnout. This can include stress management training, counseling, peer support programs, and access to mental health services. Early intervention not only benefits the individual by preventing the progression of burnout but also

benefits the organization by reducing the costs associated with burnout, such as absenteeism, presenteeism, and turnover. While the predictive score focuses on identifying individual risk factors, it's important to acknowledge that burnout is not solely an individual problem. It is also a reflection of the organizational culture and work environment. Therefore, healthcare organizations should use the insights gained from the predictive score to implement systemic changes that promote a healthy and supportive workplace. This can include addressing workplace bullying, promoting work-life balance, providing adequate resources and support, and fostering a culture of respect and appreciation for employees. By creating a work environment that prioritizes employee well-being, healthcare organizations can reduce the risk of burnout and promote a thriving workforce.[18-20]

5. Conclusion

This study provides a validated predictive score for bullying-related burnout in Indonesian healthcare professionals. The score, encompassing sociodemographic, work-related, and bullying-related factors, demonstrated good accuracy in identifying individuals at high risk. This tool can empower healthcare organizations to implement targeted interventions, focusing on primary prevention through fostering a respectful workplace culture and promoting healthy work environments. Secondary prevention strategies, such as early identification and conflict resolution, are crucial. Tertiary prevention should focus on providing treatment and rehabilitation for those with severe bullying-related mental health issues. By addressing workplace bullying and its associated burnout, healthcare organizations can cultivate a supportive environment that promotes the well-being of their workforce and enhances the quality of patient care.

6. References

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