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# PROCEEDING

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# Perception of mistreatment and burnout among clinical medical students

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## ABSTRACT

**Introduction/Background:** Perception of mistreatment among medical students was prevalent. However, information of mistreatment perception among Thai medical students was insufficient.

**Objective:** The purposes of this study were to investigate prevalence of mistreatment perception among medical students in clinical years and to compare domains of burnout scores among students with and without mistreatment perception.

**Materials and Method:** Cross-sectional survey study was conducted in Faculty of Medicine Siriraj Hospital, Mahidol University. 849 clinical medical students in the academic year 2021 received self-assessment questionnaires including personal characteristics, Maslach Burnout Inventory-Student Survey, and perception of mistreatment via Google Form. Chi-square test and independent samples t-test were suitably used to compare between the groups.

**Result:** Response rate was 47.5%. Prevalence of mistreatment perception among clinical medical students during the past year was 49.4%. Medical teachers were the most reported frequencies of people involving in students' mistreatment perception. Verbal abuse was the most reported type of mistreatment perception. Students with mistreatment perception had significantly higher score of emotional exhaustion than students without mistreatment perception (mean score: 18.4 VS 16.2,  $p = 0.005$ ). Moreover, students with mistreatment perception had significantly higher score of depersonalization than students without mistreatment perception (mean score: 11.4 VS 9.79,  $p = 0.012$ ).

**Discussion and Conclusion:** Perception of clinical medical students' mistreatment was high prevalence in the medical school. Students with mistreatment perception were prone to have emotional exhaustion, and depersonalization of burnout. Strategies to enhance positive educational environment must be implemented in the medical school.

**Keyword:** Mistreatment perception, Burnout, Clinical medical students

## INTRODUCTION

Since the 1960s, medical student mistreatment has been documented as a concern.<sup>(1)</sup> In 1992, graduating medical students in the United States (U.S.) have been initially explored mistreatment issues in their Graduation Questionnaire (GQ) by the Association of American Medical Colleagues (AAMC).<sup>(2)</sup> The findings in 1990s revealed that perception of medical student mistreatment was prevalent and the most frequently reported source of medical student mistreatment was clinical medical teacher in hospital.<sup>(2)</sup>

According to the previous systematic review, a general definition of medical student mistreatment was unclear due to the differences of culture and social contexts.<sup>(3)</sup> In 2011, AAMC defined medical student mistreatment in the GQ as purposeful or unplanned actions that ignored the dignity of people, and obstructively impacted to their learning experience.<sup>(4)</sup> For example, mistreatment consisted of sexual harassment, humiliation, psychological punishment, physical punishment, and punishment by the use of assessment.<sup>(4)</sup> In accordance with a previous study in Thailand, definition of mistreatment comprised four types of abuse including physical abuse, verbal abuse, discriminative behavior, and power abuse.<sup>(5)</sup> For associated factors, there were the findings that suggested the associated factors of mistreatment perception among medical students including academic year<sup>(5)</sup>, gender<sup>(6)</sup>, race<sup>(6)</sup>, or ethnicity.<sup>(6)</sup>

Mistreatment negatively affected medical students in mental, professional, and educational domains. For mental domain, medical students with mistreatment perception were vulnerable to burnout<sup>(7)</sup>, anxiety<sup>(8)</sup>, or depression<sup>(8)</sup>. For professional domain, mistreatment adversely impacted patient safety<sup>(9)</sup>, dishonest behavior<sup>(10)</sup>, or idea of dropping out of medical school.<sup>(11)</sup> For educational domain, medical students with mistreatment perception were susceptible to low self-belief in clinical skillfulness<sup>(12)</sup>, low enthusiasm in learning<sup>(13)</sup>, or decision to choose specialty in residency training.<sup>(14)</sup> Therefore, mistreatment was concerning issue for medical students in educational environment of medical schools.

In Thailand, there was limited information of medical student mistreatment in medical school.<sup>(5)</sup> For Faculty of Medicine Siriraj Hospital, Mahidol University, there was no data about students' mistreatment perception. Especially in clinical learning environment, there were various types of healthcare professionals in this context including medical students, residents, medical teachers, or nurses. Therefore, poor-organized system in clinical learning environment could originate the inappropriate medical hierarchy in the environment, which could lead clinical medical students' perception of mistreatment.<sup>(15)</sup> Therefore, we aimed to explore prevalence of mistreatment perception in clinical medical students for further management in clinical learning environment of medical school. According to the impact of student mistreatment, we aimed to compare the scores of domains of burnout between students with and without mistreatment perception.

## MATERIALS AND METHODS

This cross-sectional survey study recruited medical students in clinical years from the academic year 2021 at Faculty of Medicine Siriraj Hospital, Mahidol University, excluding those unwilling to participate. In Thailand, clinical medical students referred to fourth-year to sixth-year medical students. All 403 clinical medical students received an online survey via Google Form from the end of September 2021 to the early November 2021. Before joining the study, participants had read the information sheet and voluntarily decided to answer the questionnaire. Participants could respond to questionnaire with unlimited time. Subsequently, participants could withdraw from the study at any time when they felt uncomfortable to answer the questionnaire. The Siriraj Institutional Review Board, Faculty of Medicine Siriraj Hospital, Mahidol University approved the ethical issues

for this study. This study received waiver for documentation of consent because the documentation of consent could cause more harms to participants regarding an issue of confidentiality.

### Sample size calculation

For the prevalence study, this formula was used to sample size calculation.<sup>(16)</sup>

$$N = \frac{Z^2 P(1 - P)}{d^2}$$

$N$  referred to sample size.  $P$  referred to estimated proportion of population.  $Z$  was standard deviation at 95% confidence interval. Finally,  $d$  was precision of the estimate. According to the previous study, the prevalence of perception of mistreatment among Thai clinical medical students was 63.4%.<sup>(5)</sup> Thus, estimated proportion of population was 0.634. Standard deviation at 95% confidence interval was 1.96 and precision of the estimate was set at 0.05. Therefore, the adequate sample size required 357 participants.

### Instruments

The self-assessment survey consisted of three parts:

#### 1) Personal characteristics of participants

We obtained the basic information of participants including academic year, gender, and idea of dropping out of medical school.

#### 2) Questionnaire of mistreatment perception

Permission to use this validated questionnaire was granted by Pitanupong.<sup>(5)</sup> From the questionnaire, there were four items to represent the four domains of mistreatment including physical abuse, verbal abuse, discriminative behavior, and power abuse.<sup>(5)</sup> Physical abuse indicated unsuitable physical contact including beating, pinching, or throwing things to students.<sup>(5)</sup> Verbal abuse demonstrated the perception of scolding, criticism, or humiliation by inappropriate words.<sup>(5)</sup> Discriminative behavior involved the perception of inappropriate behaviors by gender discrimination or personal preference.<sup>(5)</sup> Finally, power abuse referred to the inappropriate medical hierarchy to pressure students to work beyond the previous agreed responsibilities.<sup>(5)</sup> We noted that these examples were the perceptions of clinical medical students' mistreatment, but these could not be concluded that the real events were occurred or not.

Participants could rate the frequencies of these events during the past year in never, once or twice, a few times, several times, and numerous times. According to an original study<sup>(5)</sup>, we finally categorized these frequencies in three groups including never, infrequent (once or twice or a few times), and recurrent (several times or numerous times) for further analysis. In addition, participants selected the people who involved with their mistreatment perception in medical school. We reported these frequencies in number and percentage. The Cronbach's alpha for perception of mistreatment was 0.62.<sup>(5)</sup>

#### 3) Maslach Burnout Inventory-Student Survey (MBI-SS) in Thai version.

Maslach Burnout Inventory-Student Survey (MBI-SS) consisted of fifteen items to determine three categories of burnout including emotional exhaustion (EE), depersonalization (DP), and

professional efficacy (PE) with a 7-point Likert scale ranging from 0-6.<sup>(17)</sup> In the fifteen items for the MBI-SS, there were five items for EE, four items for DP, and six items for PE. Therefore, the range of scores of EE, DP, and PE were 0-30, 0-24, and 0-36, respectively.<sup>(18)</sup> In this study, we used summation method by calculating total scores of each domain of burnout for interpretation.<sup>(19)</sup> Higher scores of EE demonstrated higher degrees of this domain of burnout, while higher scores of DP revealed higher degrees of this domain of burnout, but lower scores of PE showed higher degrees of this domain of burnout.<sup>(19)</sup> Mean and standard deviation of total scores for each domain could be analyzed for the interested groups and appropriately compared for further analysis.<sup>(19)</sup>

The Thai version of MBI-SS was approved that it had appropriate psychometric properties among Thai medical students.<sup>(17)</sup> The Cronbach's alpha value of this questionnaire was 0.80.<sup>(17)</sup> In addition, the Cronbach's alpha values of EE, DP, and PE were 0.89, 0.81, and 0.70, respectively.<sup>(17)</sup> Mind Garden, Inc. granted for permission to use MBI-SS.

### Statistical analysis

Categorical data were reported as frequency and percentage. Numerical data with normal distribution were reported as mean and standard deviation. Chi-square test was used because the variables were categorical data. Independent samples t-test was used for comparing the mean score of each domain of burnout between students with and without mistreatment perception. The *p*-value was set at less than 0.05 for statistical significance. The Statistical Package for the Social Sciences Version 18 for windows was the program for data analysis.

## RESULTS

### Personal characteristics of participants

403 from 849 clinical medical students participated in the survey. Response rate was 47.5%. The response rates from fourth-year, fifth-year, and sixth-year medical students were 22.3% (N = 90), 12.2% (N = 49), and 65.5% (N = 264), respectively. Over half (53.1 %, N =214) of participants were male students and 71% (N = 286) of participants had no idea of dropping out of medical school.

### Mistreatment perception of participants

199 from 403 participants had mistreatment perception in medical school at least once in the past year. The prevalence of mistreatment perception among clinical medical students was 49.4%.

According to students with mistreatment perception, the proportions of student mistreatment perception from medical teachers, nurses, residents, peers, and senior students were 92.1%, 65.9%, 47.2%, 38.3%, and 19.6%, respectively. The most reported domains of mistreatment perception were verbal abuse (97.0%), discriminative behavior (84.0%), power abuse (67.8%), and physical abuse (18.1%), respectively.

Academic year was associated with mistreatment perception, but gender and idea of dropping out of medical school were not associated with mistreatment perception as demonstrated in table 1. According to table 2, the findings revealed that academic year was associated with domains of mistreatment including physical abuse, verbal abuse, discriminative behavior, and power abuse. In addition, fourth-year medical students had the least frequencies of mistreatment perception in all domains. For comparisons of proportions in each domain, the findings demonstrated that the sixth-

year medical students had a significantly higher proportion of perception of infrequent physical abuse than the fourth-year medical students had (12.5% vs. 1.1%,  $p$ -value < 0.05). Additionally, the sixth-year medical students had a significantly higher proportion of perception of recurrent verbal abuse than the fourth-year medical students had (20.5% vs. 5.6%,  $p$ -value < 0.05). Moreover, the sixth-year medical students had a significantly higher proportion of perception of recurrent discriminative behavior than the fourth-year medical students had (20.1% vs. 4.4%,  $p$ -value < 0.05). Finally, the sixth-year medical students had a significantly higher proportion of perception of recurrent power abuse than the fourth-year medical students had (15.5 % vs. 2.2%,  $p$ -value < 0.05).

**Table 1** Proportions of personal characteristics of participants and their mistreatment perception

Personal characteristics	Mistreatment perception		$p$ -value
	Yes (N=199)	No (N=204)	
Academic year			< 0.001
Fourth-year	28 (31.1%)	62 (68.9%)	
Fifth-year	30 (61.2%)	19 (38.8%)	
Sixth-year	141 (53.4%)	123 (46.6%)	
Gender			0.463
Male	102 (47.7%)	112 (52.3%)	
Female	97 (51.3%)	92 (48.7%)	
Idea of dropping out of school			0.172
Yes	64 (54.7%)	53 (45.3%)	
No	135 (47.2%)	151 (52.8%)	

**Table 2** Proportions of domains of mistreatment perception with academic year

Domains of mistreatment perception	N (%)	Academic year			$p$ -value
		Fourth-year (N,%)	Fifth-year (N,%)	Sixth-year (N,%)	
Physical abuse					0.002
Recurrent	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
Infrequent	36 (8.9%)	1 (1.1%)	2 (4.1%)	33 (12.5%)	
Never	367 (91.1%)	89 (98.9%)	47 (95.9%)	231 (87.5%)	
Verbal abuse					<0.001
Recurrent	65 (16.1%)	5 (5.6%)	6 (12.2%)	54 (20.5%)	
Infrequent	128 (31.8%)	23 (25.6%)	23 (46.9%)	82 (31.1%)	
Never	210 (52.1%)	62 (68.9%)	20 (40.8%)	128 (48.5%)	
Discriminative behavior					<0.001
Recurrent	61 (15.1%)	4 (4.4%)	4 (8.2%)	53 (20.1%)	
Infrequent	106 (26.3%)	18 (20.0%)	15 (30.6%)	73 (27.7%)	
Never	236 (58.6%)	68 (75.6%)	30 (61.2%)	138 (52.3%)	
Power abuse					<0.001
Recurrent	46 (11.4%)	2 (2.2%)	3 (6.1%)	41 (15.5%)	
Infrequent	89 (22.1%)	11 (12.2%)	11 (22.4%)	67 (25.4%)	
Never	268 (66.5%)	77 (85.6%)	35 (71.4%)	156 (59.1%)	

## Mistreatment perception and burnout

The overall scores of EE, DP, and PE among all participants were normal distribution. According to table 3, the mean scores of EE, DP, and PE among the participants were 17.2, 10.6, and 23.1, respectively. Students with mistreatment perception had a statistically significant higher mean scores of EE than students without mistreatment perception (18.4 VS 16.2,  $p$ -value = 0.005). Furthermore, students with mistreatment perception also had a statistically significant higher mean scores of DP than students without mistreatment perception (11.4 VS 9.79,  $p$ -value = 0.012).

**Table 3** Mean scores of each domain of burnout

Domains of burnout	Mean (SD)	Mistreatment perception		$p$ -value
		Yes (N=199) Mean (SD)	No (N=204) Mean (SD)	
Emotional exhaustion	17.2 (7.95)	18.4 (8.01)	16.2 (7.76)	0.005
Depersonalization	10.6 (6.29)	11.4 (6.75)	9.79 (5.72)	0.012
Professional efficacy	23.1 (7.92)	22.7 (7.56)	23.5 (8.26)	0.335

## DISCUSSION

The response rate was 47.5% (N=403), thus the study had adequate sample size according to sample size calculation. Almost half of clinical medical students perceived mistreatment during the past year. Nearly all students with mistreatment perception experienced verbal abuse in their clinical settings and these were related to the findings from previous studies in Thailand<sup>(5)</sup> and Japan.<sup>(13)</sup> Intentional or unintentional banter or joking to students' attributes, motives, or stereotyped beliefs were involved with the incidences of verbal abuse.<sup>(20)</sup> Moreover, medical students felt embarrassed by unprofessional words or insults from medical teachers that could lead to students' perception of verbal abuse.<sup>(21)</sup>

The most reported primary source of students' mistreatment perception was medical teachers. This finding was similar to previous studies in Thailand<sup>(5)</sup>, Japan<sup>(13)</sup>, and U.S..<sup>(2)</sup> Medical teachers had a major role for teaching and evaluating clinical medical students, thus the students had a greater chance to perceive student mistreatment by their medical teachers.<sup>(13)</sup> In addition, the important skills for medical teachers in their clinical teaching were the appropriate teaching techniques such as questioning techniques, giving feedback, providing reflection or clinical supervision. According to the previous study, usage of intimidating questioning techniques from medical teachers had an important role for perception of mistreatment among clinical medical students because the students were humiliated from the inappropriate manner.<sup>(22)</sup> Moreover, two-third of participants had perception of student mistreatment from nurses, and nearly half of participants also experienced mistreatment perception by residents. From these occurrences, some issues of clinical learning environment might cause to students' mistreatment perception. For example, inadequate mentorship, poor role model, or dysfunctional seniority system might affect medical students to perceive mistreatment in clinical settings.<sup>(15, 23)</sup>

Academic year was associated with mistreatment perception and was in accordance with a previous study.<sup>(5, 24)</sup> The fourth-year medical students had the least proportions of mistreatment perception. These occurrences could be explained that the fourth-year class in Thailand was the beginning class in the clinical years, so the fourth-year medical students might slightly interact with medical personnel. According to the domains of mistreatment perception, the sixth-year medical

students reported the major proportions of mistreatment perception in each domain. The final-year students had more opportunity to work with various healthcare professionals in medical schools. Therefore, mistreatment perception among students was more likely to occur at the later years of study.<sup>(24)</sup>

Over half of participants with mistreatment perception had idea of dropping out of medical school. Moreover, students with mistreatment perception were prone to have higher scores of EE and DP than students without mistreatment perception. The finding was in accordance with the former studies<sup>(7, 25)</sup> that mistreatment perception was associated with burnout. These events supported that mistreatment has negative impacts to medical students with mistreatment perception mentally and professionally.

One of the challenges to end mistreatment was that small proportions of medical students reported their experiences of mistreatment perception to medical school.<sup>(26)</sup> This study was the first report of mistreatment perception among medical students in our school and provided important information for further management to the medical school. Therefore, this study contributed the prevalence of mistreatment perception among clinical medical students to the faculty members and could reduce mistreatment by promoting awareness and identification of inappropriate behaviors among healthcare professionals in our school. To reduce mistreatment perception among the students, the faculty members must realize that mistreatment is one of the issues in the medical school and mistreatment perception can impact the medical students in negative ways. For enhancing positive educational environment, comprehensive faculty development program should be implemented.<sup>(27)</sup> According to the findings, medical teachers, nurses, or residents were the key role of students' perception of mistreatment and verbal abuse was the most reported type of students' perception of mistreatment. Therefore, they must improve their interactions with medical students via the faculty development program, particularly in providing constructive feedback which can minimize medical students' experience of mistreatment and strengthen constructive clinical learning climates.<sup>(27)</sup> Interestingly, the prevalence of mistreatment perception from this study was not relevant with the prevalence of mistreatment perception from the current reporting system of mistreatment in our school due to the few responses in the system. Thus, the reasons of few medical students reported their experiences of mistreatment perception to the medical school should be additionally explored to improve for the new reporting system of mistreatment. The novel system should be used to follow the occurrences of mistreatment perception after the strategies were implemented.

## **Limitations**

This study should be carefully interpreted because of some limitations. First, cross-sectional study could not explain causal relationship between mistreatment perception and other variables. Longitudinal study should be conducted to determine the association between mistreatment perception and burnout.<sup>(28)</sup> Second, participants responded this survey during the first semester of academic year 2021. Therefore, the findings of mistreatment perception might be underreported due to incomplete rotations in each department. Third, self-assessment questionnaires might be led to response biases due to social undesirability. Moreover, the major proportions of participants were the sixth-year medical students, thus participants' characteristic might also lead to response biases toward higher prevalence of mistreatment perception. Fourth, the findings were from a Thai medical school. Consequently, the generalizability of the results to other Thai medical schools was limited.

## **Suggestions for future study**

We recommended some points of methodology to enhance future studies of mistreatment. First, qualitative study including individual interview or focus group should be conducted to



investigate in-depth data from various stakeholders to develop policy or implementation for the medical school. Second, collecting data during the end of academic year might demonstrate higher prevalence of student mistreatment perception due to complete rotation from each year.

## **CONCLUSION**

The prevalence of mistreatment perception among clinical medical students was 49.4%. Medical teachers were the most frequent primary source of mistreatment perception. Verbal abuse was the most reported types of mistreatment. Medical students with mistreatment perception were prone to have emotional exhaustion, and depersonalization. Therefore, the medical school should enhance comprehensive faculty development program to promote constructive educational environment in the medical school.

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