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# Physical activity and burnout in general practititoner of hospital emergency room in Palembang

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## Abstract

Burnout is a serious problem that usually occurs in workers who often interact with humans, one of them is medical personnel. For doctors, it has a huge impact for quality of care and patient safety. General practitioners in the ER are often faced with spontaneous events, demands for the right decision and treatment as soon as possible. These stressors increase the chance of burnout in the emergency room doctor. The cause of burnout from internal factor is lifestyle. This research is important in order to understand the relationship between physical activity and burnout that occurs in general practitioners in the ER, as an effort to provide a burnout prevention practically and independently by each individual. This research was an analytical observational study with a cross-sectional design based on primary data from the Indonesian language GPAQ and MBI questionnaires. The subjects were 45 general practitioners in emergency room of several hospitals in Palembang. Overall, 61.5% respondents experienced low level burnout, while for the high level was 14.7%. Almost 50% of the respondents have low level category of physical activity. The results of Kendall's tau-b analysis showed the weak correlation between physical activity and two dimensions in a positive direction. The level of physical activity has a significant relationship with the risk of burnout in the emotional exhaustion and decreased self accomplishment dimensions of general practitioners of Hospital ER in Palembang. In the others, the level of physical activity did not have a significant relationship with the depersonalization dimension of burnout

**Keywords:** Burnout; Physical Activity; General Practitioner; Emergency Room

## 1. Introduction

Burnout is a psychological syndrome of overwhelming exhaustion, depersonalization or detachment from the job and lack of accomplishment, that usually occur to individuals whose work for various people-oriented professions, such as human services, education and health care [1]. In 2019, WHO defined Burnout as an “Occupational Phenomenon” [2]. Burnout is a chronic stress syndrome that has not been successfully managed or resolved, characterized by three key dimensions: fatigue, cynicism and decreased professionalism [2].

Prevalence of burnout in the emergency department is 34.6% [3]. In fact, nearly one in two emergency physicians has experienced burnout (50.7%) [3]. These results are consistent with the majority of studies regardless of their country, which found the prevalence rates of burnout among emergency physicians ranges from 11% to 70% [3]. Burnout has a complex relationship with health, that the poor health contributes to burnout, and vice versa [4]. Burnout in healthcare workers could be avoided through individual resilience strategies, environmental enhancement and job satisfaction, and increased professional autonomy [5]. There was an association > 66.4% between "high level of burnout" in medical personnel with worsening patient safety [5]. Burnout has been associated with reports that indicate personal distress, such as physical fatigue, insomnia, marriage and family problems, and increased consumption of alcohol or drugs [6].

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The longer working hours, the higher risk of workers experiencing burnout, because the increased working hours will result in increased activities so that physical fatigue occurs [7]. Most of physical or non-physical activity requires energy to do, the energy expended in large quantities without adequate rest causes workers to experience burnout [7].

Physical activity is any movement of the skeletal muscles that requires energy expenditure, including working, playing, traveling, recreation, and household chores [2]. It has been explained that sport is not the same as physical activity, but as part of it, included into leisure or recreational activities (according to the GPAQ questionnaire by WHO). Burnout in the emergency department has a correlation with the productivity and frequency of exercise, with r = 0.4845 and r = 0.5406 [8]. The relationship between burnout and the frequency of exercise could indicate a high probability of a significant relationship between overall physical activity and burnout rate.

## 2. Material and methods

This research was an observational analytic study with a cross-sectional design based on primary data through a questionnaire. The research was done in Palembang. Data was collected from October to November 2020. The subjects of this study were general practitioners of Hospital Emergency Room in Palembang.

The collected data were individual characteristics (age, gender, duration of work, and length of work), level of physical activity (Global Physical Activity Questionnaire in Indonesian) [2,9], and burnout levels according to 3 dimensions (Maslach Burnout Inventory in Indonesian) [6,10]. Interval data from the questionnaire answers was processed into catagoric ordinal data, each variable was transformed into low, medium and high levels according to the interpretation of the questionnaire. Subsequently, the data were analyzed through crosstabs and Kendall's Tau-b test.

## 3. Results

The total sample was 45 respondents, consisting of 80% female and 20% male. The duration of work varies from 6 hours to 12 hours /day. The distribution is described in Table 1 below.

**Table 1** Distribution of Individual Characteristic

| **Gender** | **n** | **%** |
|---|---|---|
| Gender (n=45) | | |
| Male | 9 | 20 |
| Female | 36 | 80 |
| Work Duration (n=45) | | |
| 6 hours daily | 5 | 11.1 |
| 7 hours daily | 6 | 13.3 |
| 8 hours daily | 20 | 44.4 |
| 10 hours daily | 1 | 2.2 |
| 12 hours daily | 13 | 28.9 |

Other characteristics such as age and length of work experiences are spread abnormally and vary widely. Most respondents are 23 years. Briefly, the distribution is shown in Table 2.

There are 86.7% respondents experienced low level burnout in the emotional exhaustion dimension. Overall, nearly 56% experienced low-level burnout and 16% high-level burnout in the depersonalization dimension. From the three dimensions, it was found that the average of respondents who experienced burnout at low level was 61.5%, while for the high level was 14.7%. According to table 3, almost 50% of the respondents have low level category of physical activity (<600 MET-min/week).

**Table 2** Distribution of Age, Work Experiences, and Work Duration

| | **Work Experiences (Month)** | **Age** | **Work Duration (hours/day)** |
|---|---|---|---|
| median | 3 | 25 | 8 |
| modus | 3 | 23 | 8 |
| minimum | 1 | 22 | 6 |
| maximum | 108 | 37 | 12 |

**Table 3** Distribution of Physical Activity and Burnout

| **Levels of Physical Activity** | **n** | **%** |
|---|---|---|
| Low | 22 | 48. |
| Moderate | 11 | 24.4 |
| High | 12 | 26.7 |
| **Emotional Exhaustion** | | |
| Low level burnout | 39 | 86.7 |
| Moderate level burnout | 6 | 13.3 |
| **Depersonalization** | | |
| Low level burnout | 25 | 55.69 |
| Moderate level burnout | 12 | 26.7 |
| High level burnout | 8 | 17.8 |
| **Low Personal Accomplishment** | | |
| Low level burnout | 19 | 42.2 |
| Moderate level burnout | 14 | 31.2 |
| High level burnout | 12 | 26.7 |
| Total | 45 | 100 |

In Table 4 below, for three dimensions, both male and female doctors mostly experienced low-level burnout. The higher of burnout rate, the greater incidence ratio based on gender.

**Table 4** Distribution Levels of Burnout based on Gender

| **Levels of Burnout** | **Female** | | **Male** | | **Total** |
|---|---|---|---|---|---|
| | **n** | **%** | **n** | **%** | |
| **Emotional Exhaustion** | | | | | |
| Low | 31 | 68.9 | 8 | 17.8 | 39 |
| Moderate | 5 | 11.1 | 1 | 2.2 | 6 |
| **Depersonalization** | | | | | |
| Low | 18 | 40 | 7 | 15.6 | 25 |
| Moderate | 12 | 26.7 | 0 | 0 | 12 |

| | | | | | |
|---|---|---|---|---|---|
| High | 6 | 13.3 | 2 | 4.4 | 8 |
| **Personal Accomplishment** | | | | | |
| Low | 16 | 35.6 | 3 | 6.7 | 19 |
| Moderate | 10 | 22.2 | 4 | 8.9 | 14 |
| High | 10 | 22.2 | 2 | 4.4 | 12 |
| Total | 36 | 80 | 9 | 20 | 45 |

Kendall's Tau b analysis showed the p-value 0.025 (<0.05), which indicated that was a significant relationship between the level of physical activity and the risk of burnout in the emotional exhaustion dimension. The correlation value was weak and the direction is positive with r 0.274. Described in Table 5 below.

**Table 5** Analysis of Relationship between Physical Activity and Burnout Dimension: Emotional Exhaustion**.**

| | **Levels of Burnout based on Emotional Exhaustion** | | | | ***p-value*** | *r* |
|---|---|---|---|---|---|---|
| **Physical Activity** | **Low** | | **Moderate** | | | |
| | n | % | n | % | | |
| Low | 22 | 48.9 | 0 | 0.0 | 0.025 | 0.274 |
| Moderate | 7 | 15.6 | 4 | 8.9 | | |
| High | 10 | 22.2 | 2 | 4.4 | | |
| Total | 39 | 86.7 | 6 | 13.3 | | |

In the depersonalization dimension, p = 0.926 indicated that no significant relationship between physical activity and burnout. The analysis results is shown in Table 6.

**Table 6** Analysis of Relationship between Physical Activity and Burnout Dimension: Depersonalization

| | **Levels of Burnout based on Depersonalization** | | | | | | *p-value* |
|---|---|---|---|---|---|---|---|
| **Physical Activity** | **Low** | | **Moderate** | | **High** | | |
| | n | % | n | % | N | % | |
| Low | 12 | 26.7 | 8 | 17.8 | 2 | 4.4 | 0.926 |
| Moderate | 5 | 11.1 | 3 | 6.7 | 3 | 6.7 | |
| High | 8 | 17.8 | 1 | 2.2 | 3 | 6.7 | |

Based on the dimensions of decreased personal accomplishment, the level of physical activity has a significant relationship with burnout. According to Table 7, the value of p = 0.008 with r = 0.320.

**Table 7** Analysis of Relationship between Physical Activity and Burnout Dimension: Decreased Personal Accomplishment

| | **Levels of Burnout based on Decreased Personal Accomplishment** | | | | | | |
|---|---|---|---|---|---|---|---|
| **Physical Activity** | **Low** | | **Moderate** | | **High** | | |
| | **n** | **%** | **n** | **%** | **n** | **%** | |
| Low | 12 | 26.7 | 7 | 15.6 | 3 | 6.7 | **p-value: 0.008** |
| Moderate | 5 | 11.1 | 3 | 6.7 | 3 | 6.7 | **r: 0.320** |
| High | 2 | 4.4 | 4 | 8.9 | 6 | 13.3 | |
| Total | 19 | 42.2 | 14 | 31.1 | 12 | 26.7 | |

## 4. Discussion

The results of this study indicated that nearly 50% of the sample have low-level physical activity habits. The low and moderate level was dominated by doctors who worked 8 hours/day, while the highest level was mostly on duration of 12 hours/day. This is consistent with previous research that the longer of work duration hours daily, the heavier the physical activity is carried out [7].

Doctors with female gender proved to be 1.6 times more likely to experience burnout than male [4]. This statement is consistent with this study, especially on two dimensions. Correlation of high level burnout with decreased accomplishment and moderate level with emotional exhaustion even reached 5 times more in female. This result exceeds the initial distribution ratio of female and male (4: 1).

Female doctors are tend to experience burnout, one of the possible reasons was multiple role conflicts [11]. Multiple role conflicts occur because work role pressures and family role pressures [11]. They had to balance time for working hours and family demands in the form of their role as a mother such as cooking, caring for children, so that demands for responsibilities and roles are limited [12]. For depersonalization dimension, female doctors experience three times more high-level burnout than male. Less comparison than the initial distribution means that male are tend to experience depersonalization than female. This supports the claim that male often have the highest score on cynicism (depersonalization), while female score slightly higher on emotional exhaustion [13].

For emotional exhaustion dimension, the highest score on the second statement based on MBI Indonesian, "Working all day with many people requires a lot of energy" [10]. This proved that the respondents thought they needed more energy to work with many people. Furthermore, it could be described for normal or non-pandemic conditions, the number of people, especially the amount of patients in the ER, eventually led to higher score of burnout, so burnout that occurs is also higher than at this time, which most of results was low. On the depersonalization dimension, the highest average score was on the statement "There is an impression that my patients or clients hold me responsible for their problems" [10]. This led to each individual's personality, including how to cope stress and locus of control in determine of whether it is a problem or not. Burnout was higher in those with external locus of control than internal ones [13]. On the personal accomplishment dimension, the lowest score was found in the statement "I managed to achieve meaningful achievement in this work" [10]. In this case, it described the low of esteem from each other's internal self. In several studies, it was stated that the three dimensions of burnout have been associated with lower self-esteem [13].

According to the analysis on emotional exhaustion dimensions, the level of physical activity has a significant relationship with the burnout case ($r = 0.274$). On the dimension of decreased personal accomplishment, the results also showed that physical activity had a significant relationship with burnout ($r = 0.320$, $p = 0.008$). Both have a weak correlation with positive direction, which means that if physical activity is low, the risk of burnout is low, and vice versa. These results were consistent with previous research that the more activities, the higher risk of workers experiencing burnout [7]. The existence of a significant relationship between physical activity and emotional exhaustion could prove the statement of Maslach et al., that burnout is associated with reports that indicate personal distress, such as physical fatigue, insomnia, marital or family problems, and others [6]. In addition, the results of this study could provide basic information on burnout therapy such as physically directed interventions and associated with a significant reduction in fatigue, then organizationally associated with higher treatment [4].

For depersonalization dimension, physical activity has no significant relationship with burnout, where the p-value is> 0.05. The insignificant relationship presumably due to differences in personality among each individual of respondents. One of the personal risk factor for burnout is the perfectionist and competitive personality type [14]. While the protective factor is the extraversion personality [14]. However, personality assessments were not included in this study. This refer to possibility of a linkage between one risk factor and others that is needed to cause a person tend to experience burnout.

The differences in the results from depersonalization with the other two dimensions were considered in the final results. Most of the literature showed that emotional exhaustion as a major component of burnout, and the other component being depersonalization, whereas the decreased personal accomplishment as a complication [6,10]. Overall, it could be proved that physical activity has a weak correlation with burnout. This led to a tendency that the level of physical activity did not have enough role compared to other factors in causing burnout.

This statement is the basis for why low-level burnout is higher than high level, especially at this time of pandemic with more stressors for emergency room doctors, such as changes in schedules, use of hazmat throughout the day, pressure and panic in dealing with COVID-19 patients as well as limited access in recreation. The prevalence of burnout that occurred in general practitioners in Hospital Emergency Room in Palembang was 61.5% low level and 14.77% high level. The contribution of protective factors to each individual was also the reason behind the low level of burnout rate.

High support from family and friends, marital status, and empathy for patients are protective factors for burnout [14]. In previous studies it was stated that empathy and social support are mild protective factors [15]. Job stress and several work-related factors are risk factors that are strong and significant for the occurrence of burnout [14]. Stress coping mechanisms can assist individuals in dealing with stressful or burnout situations. The use of effective coping strategies that appropriate to the problems can minimize the occurrence of stress or burnout in the workplace [16].

For other risk factors, there is an opportunity for workload differences according to hospital level and the number of patients could be one of the considerations for low-level burnout. Togia's research (2005) concluded that high workloads and repetitive routine tasks could cause burnout [17]. Burnout syndrome has a significant relationship with nurses' workload (p-value = 0.005), and high workload specifically affects one of burnout syndrome dimensions such as physical and emotional exhaustion [18]. Previous research has consistently found the disadvantages of job characteristics, such as high workload, long shifts, low control self-esteem, low staffing levels, low schedule flexibility, low various task, negative relationship among health workers, time pressure, work and psychological demands, poor support and leadership, role conflict , negative team relations, and job insecurity [19,20].

In this study, the hospital level was not specifically analyzed. However, in general, during the COVID-19 pandemic, a drastic change in the number of patients was certainly occured. This could be a factor of how heavy the workload faced by emergency room doctors according to each hospital where they work. There would be less workload in the new normal environment due to shorter work schedule, duration, and rotation. This could lead to the time allocation for other activities excluded work much longer that family support could be higher and be one of protection against the tendency of burnout.

## 5. Conclusion

The prevalence of burnout among general practitioners in the Emergency Room Hospital in Palembang City was 61.5% low level and 14.7% high level. The most of physical activity was low level. Female doctors mostly have low physical activity habits, while male tend to have high levels. The level of physical activity has a significant relationship with the risk of burnout in the emotional exhaustion and decreased self accomplishment dimensions of general practitioners of Hospital Emergency Room in Palembang. The correlation was weak with r sequently 0.274 and 0.320, the direction was positive. In the others, the level of physical activity did not have a significant relationship with the depersonalization dimension of burnout.

## Compliance with ethical standards

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*Disclosure of Conflict of interest*

There is no conflict of interest.

*Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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