

Symptom of Sick Building Syndrom at Employees Who Work by Online During Pandemic Covid 19

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ABSTRACT. A phenomenon related to health problems and the comfort of working or being in a closed room. Sick Building Syndrome (SBS) is a symptoms such as flu, headache, throat irritation, weakness, cough, sneezing, runny nose, and difficulty concentrating. Many things trigger Sick Building Syndrome (SBS), for example, poor air circulation, chemical pollutants (cigarette smoke), and electromagnetic radiation that comes from mobile phones, computers, laptops, wi-fi, and etc). The more electronic devices used in a room, the greater the electromagnetic radiation that is generated. In South Tangerang City, it was found that out of 100 employees, there was 52 employees (52.0%) had complaints of sick building syndrome (SBS). The objective of this study was to analyze the factors associated with the symptoms of Sick Building Syndrome (SBS) in employees who currently work from home in South Tangerang City. This study used an analytical method with a cross-sectional approach. The number of sample was 133 employees who work from home and work online using gadgets. The results showed that there was a correlation between working period (p-value = 0.040), smoking behaviour (p-value = 0.030), and psychosocial conditions (p-value = 0.030) with symptoms of Sick Building Syndrome (SBS). Based on the results of this study, employees have to always maintain a healthy body, by controlling the time between work and rest, and relaxing or stretching muscles when the symptoms of Sick Building Syndrome (SBS) begin to be felt.

Keywords: *Symptom, Sick Building Syndrome, Online During Pandemic Covid 19.*

1. INTRODUCTION

Indoor air quality is a problem that needs attention because 4% of global health problems are caused by indoor air pollution [1]. Even the EPA (Environmental Protection Agency of America) states that one of the 5 most urgent environmental problems for public health is room air quality [2]. WHO (2009) estimates that around 400-500 million people, especially in developing countries, currently face the problem of indoor air pollution and it is estimated that each year, from about 3 million deaths due to air pollution, 2.8 million of them are due to indoor air pollution. and 0.2 million others due to outdoor air pollution. This is because 80% -90% of most people carry out activities in the room that may be contaminated by pollutants. For this reason, experts conclude that people are more prone to suffer health problems due to indoor air pollution than outdoor air pollution. These health problems can reduce work productivity as well as financial losses of up to US \$ 10 billion [3].

Indonesia is currently entering an era of industrialization with infrastructure development growing rapidly, especially the need for office development is increasing. The density of the

population in Indonesia has made office designs that utilize small land available. On the other hand, it can interfere with indoor air quality [4]. According to the Head of the National Population Agency (Baknas) worldwide, an estimated 2.7 million people died from air pollution, 2.2 million of them due to indoor pollution or indoor air pollution. In fact, 70 to 80 percent of the majority of human time is spent indoors. Health and comfort problems that arise are related to the time spent in a building, but symptoms are not specific and the cause cannot be identified [5]. Many materials are known to cause poor indoor air quality. low air quality, causing health problems. One of the health problems related to air quality is sick building syndrome (SBS). Sick building syndrome (SBS) is a condition which states that industrial buildings, offices, commerce, and houses have the impact of disease and is a collection of symptoms experienced by workers in office buildings related to the length of time in the building and air quality [6][7].

2. LITERATURE REVIEW

Sick building syndrome (SBS) is a collection of complaints felt by employees who work in rooms with poor air quality, employees who have symptoms

of SBS can be identified by signs that occur in one or more employees in the same room and signs -Signs occur only when indoors and disappear when outdoors [8][9]. The factors for the occurrence of SBS are influenced by the physical environment and individual characteristics. Psychosocial conditions and a history of illness can also trigger symptoms of SBS. The history of the disease that causes the most symptoms of SBS is allergy [10][11][12]. In addition, one of the individual characteristics that can affect the onset of SBS symptoms is gender [13].

The results of Asri Puspita Rani's research on Sick Building Syndrome in 2011 at the Office of Industry and Trade in Central Java, showed that out of 55 respondents, 72.2% experienced SBS, 63.6% experienced moderate stress, 20% experienced mild stress and as much as 16.4% experienced severe stress. In addition, 56.4% had moderate computer use intensity [14]. Meanwhile, according to the results of research by Fauzi (2015) regarding the relationship between physical, biological and individual characteristics with the incidence of Sick Building Syndrome (SBS) in employees at the Pandanaran Building, Semarang City in 2015, it was stated that there was a relationship between lighting and a p-value of 0.040 (p-value <0.05) and length of work with a p-value of 0.017 (p value <0.05) with the incidence of Sick Building Syndrome (SBS) among employees at Pandanaran Building, Semarang City [15].

Based on related research conducted by Dwiputri on Sick Building Syndrome (SBS) in 2016 which was carried out at one company, which is in South Tangerang City, it found that 52 respondents experienced sick building syndrome (SBS) complaints (52, 0%) and those who did not experience sick building syndrome (SBS) were 48 respondents (48.0%) [16].

3. RESEARCH METHOD

This research is an analytical research. In analytic research, researchers try to explore how and why this phenomenon occurs, the phenomenon referred to in this study is the relationship between tenure, smoking behavior, and psychosocial conditions with symptoms of Sick Building Syndrome (SBS) in employees. The approach in this study uses a cross sectional approach. The population in this study were all private employees in South Tangerang City. Sampling was carried out by non-probability sampling method, with purposive sampling selected to be part of the population and based on predetermined criteria according to the research design. The sample in this study amounted to 133 respondents

4. RESULT AND DISCUSSION

The result and discussion of this research is :

4.1 Univariate Analysis Tenure

TABLE 1. Frequency Distribution of Private Employees' Tenure in South Tangerang City

No.	Tenure	N	%
1	Tenure >10 years	17	12.8
2	Tenure 6-10 years	44	33.1
3	Tenure <6 years	72	54.1
	Total	133	100

Source: Primary Data, 2020

Based on the results in table 1, the tenure showed that most of the employees had a tenure < 6 years, namely 72 employees, by 54.1 %.

Smoking Behavior

TABLE 2. Smoking Behavior Frequency Distribution of Private Employees in South Tangerang City

No.	Smoking Behavior	N	%
1	Smoking	101	75.9
2	Not smoking	32	24.1
Total		133	100

Source: Primary Data, 2020

Based on the results of smoking behavior research, table 2 showed that most of the employees were smoking, namely 101 employees (75.9%).

4.2 Psychosocial Conditions

TABLE 3. Psychosocial Conditions Frequency Distribution of Private Employees in South Tangerang City

No.	Psychosocial Conditions	N	%
1	Bad	87	65.4
2	Good	46	34.6
Total		133	100

Source: Primary Data, 2020

Based on the results of psychosocial conditions research, table 3 showed that most of the employees had bad psychosocial conditions, namely 87 employees (65,4%).

4.3 Symptoms of Sick Building Syndrome (SBS)

TABLE 4. Symptoms of Sick Building Syndrome (SBS) Distribution of Private Employees in South Tangerang

No.	Symptoms of Sick Building Syndrome (SBS)	N	%
1	Yes	80	60.2
2	No	53	39.8
Total		133	100

Source: Primary Data, 2020

Based on the results of Symptoms of Sick Building Syndrome (SBS) research, table 4 showed that most of the employees experienced Symptoms of Sick Building Syndrome (SBS) , namely sebanyak 80 employees (60,2%).

4.4 Bivariate Analysis

4.4.1 Correlation between Tenure with Symptoms of Sick Building Syndrome (SBS)

TABLE 5. Analysis of the Correlation between Tenure with Symptoms of Sick Building Syndrome (SBS) of Private Employees in South Tangerang City

Tenure	Symptoms of Sick Building Syndrome (SBS)				Total		P-value
	Yes		No		N	%	
	N	%	N	%			
>10 years	15	88.2	2	11.8	17	100	
6-10 years	25	56.8	19	43.2	44	100	0.040
<6 years	40	55.6	32	44.4	72	100	

Tenure is the length of time a worker works in (years) in a company environment, calculated from the time of work until the research takes place. Sick Building Syndrome (SBS) is a symptom of health problems, generally related to the airways. This set of symptoms is encountered by people who work in buildings or in homes with poorly planned ventilation. Sick Building Syndrome (SBS) is a general disease category that is related to several physical aspects of a building and is always related to the ventilation system [17].

Based on the Bivariate analysis results, it showed that among 17 employees who had a service period of > 10 years, almost all employees experienced symptoms of Sick Building Syndrome (SBS) as many as 15 employees (88.2%). Among 44 employees who had a service period of 6-10

years, it showed that most of the employees experienced Sick Building Syndrome (SBS) as many as 25 employees (56.8%). Among 72 employees, it showed that most of the employees with a service period < 6 years, experienced Sick Building Syndrome (SBS) as many as 40 employees (55,6%)

Based on the results of the chi-square statistical test, it showed that p-value = 0.040 (p-value <0.05). It means that there was a correlation between the tenure and symptoms of Sick Building Syndrome (SBS) in private employees, in South Tangerang City. The results of this study are in line with research conducted by Zaelani entitled "Factors Affecting the Incidence of Sick Building Syndrome in Employees at the Distribution Department Region 1 Graha Sarana PT. Petrokimia

Gresik 2015 ". The study showed a p-value = 0.050, which means that there was a correlation between tenure and symptoms of Sick Building Syndrome (SBS) [18].

Employees who work in a place will have a greater risk of being exposed to work environment factors such as physical, chemical, or biological factors. It can cause health problems or occupational diseases,

especially symptoms of Sick Building Syndrome (SBS) in which in turn can result in decreased work productivity of the employee.

4.4.2 Correlation between Smoking Behavior with Symptoms of Sick Building Syndrome (SBS)

TABLE 6. Analysis of Smoking Behavior with Symptoms of Sick Building Syndrome (SBS) of Private Employees in South Tangerang City

Smoking Behavior	Symptoms of Sick Building Syndrome (SBS)				Total		P-value
	Yes		No		N	%	
	N	%	N	%			
Smoking	55	54.5	46	45.5	101	100	0.030
Not smoking	25	78.1	7	21.9	32	100	

Smoking behavior is one of the factors that influence the occurrence of Symptoms of Sick Building Syndrome (SBS) . Based on the results of research on smoking behavior, it showed that among 101 smoking employees, most of them experienced symptoms of Sick Building Syndrome (SBS) as many as 55 employees (54.5%). Among 32 employees who were not smoking, it showed that almost all of them experienced symptoms of Sick Building Syndrome (SBS) as many as 25 employees (78.1%).

Based on the results of the chi-square statistical test, it showed that p-value = 0.030 (p-value <0.05). It means that there was a correlation between the smoking behavior and symptoms of Sick Building Syndrome (SBS) in private employees, in South Tangerang City. The results of this study are in line with the research conducted by Sulistyanto, entitled "Individual Factors and Quality of Physical Environment in Buildings with Sick Building Syndrome (SBS) Incidence in Employees of PT. Jember Regency Telkom in 2017 ". The study showed that the p-value = 0.026,

which means that there was a correlation between smoking behavior and symptoms of Sick Building Syndrome (SBS) [19].

This is in accordance with the statement (Cahyadi) that as indoor pollutants, cigarette smoke is a pollutant which usually has the greatest quantity compared to other pollutants. This is due to the large amount of smoking activity in the room which is often carried out by those who have a smoking habit. Cigarette smoke released by a smoker generally consists of pollutants in the form of carbon monoxide and particulates. For passive smokers (those who do not smoke but feel the consequences of cigarette smoke) this is also a constant danger. In a certain amount, cigarette smoke is very disturbing to health, such as: sore eyes, coughing symptoms occur, breathing is disturbed, and so on [20].

4.4.3 Correlation between Psychosocial Conditions with Symptoms of Sick Building Syndrome (SBS)

TABLE 7. Analysis of the Correlation between Psychosocial Conditions and Symptoms of Sick Building Syndrome (SBS)

Psychosocial Conditions	Symptoms of Sick Building Syndrome (SBS)				Total		P-value
	Yes		No		N	%	
	N	%	N	%			
Bad	46	52.9	41	47.1	87	100	0.030
Good	34	73.9	12	26.1	46	100	

According to Wiwien, 2012 individual factors, namely individual vulnerability, will affect the onset of symptoms [21]. Work stress and psychosocial factors also influence the onset of symptoms of Sick Building Syndrome (SBS).

Stress is a combination of workload in the office and social environment and this factor can provide physiological and psychological phenomena. The quantity of work can hinder the comfort of working

and contribute to mucosal irritation and general or other complaints.

Based on the results of research on psychosocial conditions conducted on employees, it showed that among 87 employees who had poor psychosocial conditions, most of them experienced symptoms of *Sick Building Syndrome* (SBS) as many as 46 employees (52,9%). Among 46 employees who had well psychosocial conditions, most of the employees experienced symptoms of *Sick Building Syndrome* (SBS) as many as 34 employees (73.9 %).

Based on the results of the chi-square statistical test, it showed that $p\text{-value} = 0.030$ ($p\text{-value} < 0.05$). It means that there was a correlation between the psychosocial conditions and symptoms of Sick Building Syndrome (SBS) in private employees, in South Tangerang City.

The results of this study are in line with research conducted by Zaelani entitled "Factors Affecting the Incidence of Sick Building Syndrome in Employees at the Distribution Department Region 1 Graha Sarana PT. Petrokimia Gresik 2015 ". This study showed ($p\text{-value} = 0.018$) which means that there was a correlation between psychosocial conditions and symptoms of Sick Building Syndrome (SBS) in employees [18].

Anis in Zaelani stated that SBS complaints are also influenced by factors outside the environment, such as personal, work and psychological problems that are considered to affect a person's sensitivity to SBS. In addition, it is also supported by research by Laila (2011) which stated that typical health problems from SBS are more caused by stress than the condition of the building. The existence of office automation and computer technology can increase work efficiency, but with this condition workers are required to maximize their work performance [5]. The employees must improve their abilities and be able to cope with heavier workloads.

5. CONCLUSION

There was a correlation between working period ($p\text{-value} = 0.040$), smoking behaviour ($p\text{-value} = 0.030$), and psychosocial conditions ($p\text{-value} = 0.030$) with symptoms of Sick Building Syndrome (SBS). Based on the results of this study, employees have to always maintain a healthy body, by controlling the time between work and rest, and relaxing or stretching muscles when the symptoms of Sick Building Syndrome (SBS) begin to be felt. Further directions for this study include examining other independent variables such as use of air conditioning, length of rest, length of sitting while working, and other factors

ACKNOWLEDGMENT

This research was supported by LPDP, Mrs. Ns.Riris Andriati, S.Kep., M.Kep and Mr. Dr. H. M. Hasan, SKM., M.Kes. And then, thank you so much to those who helped in this research.

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