

Presenteeism among Governmental Office Workers-Using VDT and Associated Risk Factors

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Abstract

Background: Presenteeism is the presence of workers in the workplace without full working capacity due to health factors, but several studies also link it to organizational influence. The government staffing system in Indonesia has two types of work status (permanent and non-permanent) and policy changes related to increasing the use of Visual Display Terminal (VDT), will certainly affect worker presenteeism. This study was conducted to assess the risk factors presenteeism in workers using VDT in the Indonesian government office.

Methods: This study was a cross-sectional observational study using a questionnaire method using the Stanford Presenteeism Scale (SPS-6) to assess presenteeism and its association with organizational and health risk factors in a multivariate manner. Computer Vision Syndrome (CVS) at one of associated factor, was assessed using Indonesian version of CVS Questionnaire (CVSQ). Analysis of this study used SPSS version 26.

Results: Of the 201 research subjects, 44.28% of presenteeism was found. but complaints of computer vision syndrome (Positive CVSQ score) were found in almost all of the study subjects (84.5%). Risk factors for employment status and position have a strong relationship with presenteeism ($p < 0.001$). Temporary worker status has a 7.08x risk ($aOR=7.08$ 95% CI = 3.1-15.8) of experiencing presenteeism. Whereas for workers with a presenteeism risk position of 3.45x ($aOR=3.45$ 95% CI = 1.3-8.5).

Conclusion: Most government workers who use VDT continue to work even though they have health problems in the form of complaints of computer vision syndrome. Non permanent status ($aOR=7.08$ 95% CI = 3.1-15.8) and low position ($aOR=3.45$ 95% CI = 1.3-8.5) are determinant factors for presenteeism.

Keywords: presenteeism, computer vision syndrome, visual display terminal

Abstrak

Latar belakang: Presenteeism adalah kehadiran pekerja di tempat kerja tanpa kapasitas bekerja penuh karena faktor kesehatan, tetapi beberapa penelitian juga menghubungkannya dengan pengaruh organisasi. Sistem kepegawaian pemerintah di Indonesia memiliki dua jenis status kerja (tetap dan tidak tetap) dan perubahan kebijakan terkait peningkatan penggunaan Visual Display Terminal (VDT), tentu akan mempengaruhi kehadiran pekerja. Penelitian ini dilakukan untuk menilai faktor risiko presenteeism pada pekerja yang menggunakan VDT di kantor pemerintah Indonesia.

Metode: Penelitian ini menggunakan metode kuesioner menggunakan Stanford Presenteeism Scale (SPS-6) dan Computer Vision Syndrom Questionnaire (CVSQ) versi bahasa Indonesia secara potong lintang. Faktor risiko perancu lainnya seperti jabatan, status pekerja, masa kerja, gangguan kesehatan lain juga diteliti dan dihubungkan dengan presenteeism secara multivariat. Analisis penelitian ini menggunakan SPSS versi 26.

Hasil: Dari 201 subjek penelitian, 44,28% mengalami presenteeism, tetapi keluhan computer vision syndrome (skor CVSQ positif) ditemukan di hampir semua subjek penelitian (84,5%). Faktor risiko status pekerjaan dan jabatan memiliki hubungan yang kuat dengan presenteeism ($p < 0.001$). Status pekerja tidak tetap memiliki risiko 7,08 kali ($aOR=7,08$, 95% CI = 3,1-15,8) mengalami presenteeisme. Sedangkan untuk jabatan juga berpengaruh terhadap presenteeisme 3,45 kali ($aOR=3,45$, 95% CI = 1,3-8,5).

Kesimpulan: Sebagian besar pegawai pemerintah yang menggunakan VDT tetap bekerja meskipun memiliki masalah kesehatan berupa computer vision syndrome. Status tidak permanen ($aOR=7,08$, 95% CI = 3,1-15,8) dan jabatan rendah ($aOR=3,45$; 95% CI = 1,3-8,5) merupakan faktor penentu presenteeism.

Kata kunci: presenteeism; computer vision syndrome; visual display terminal

Background

Presenteeism is defined as the presence of a worker in the workplace without full working capacity due to poor health.¹ However, recently, presenteeism has been associated with non-health-related issues such as organizational influence. Canfield, (1955)² defines presenteeism as the act of workers coming to work when sick, because of fears that employees will lose their jobs or income, resulting in decreased performance at work.

Several studies on presenteeism in Scandinavian countries and the UK have tried to focus on why employees work when their health status gives them a reason to stay home. It was found that, the main cause of presenteeism behavior is due to the subjective insecurity of workers as a result of downsizing the organization and the fear of losing a job.³

The government staffing system in Indonesia has two types of work status, namely permanent (“*pegawai negeri sipil*” or PNS) and Non-permanent (“*pegawai pemerintahan non pegawai negeri*” or PPNPN). Non-permanent employees will of course be afraid of losing their jobs, on the other hand permanent employees will have reasons to stay at home if they feel sick. Other organizational factors associated with presenteeism outside of the permanent status of workers are job demands,¹ position pressure, and workload.⁴

The use of computers around the world has increased over time because work can be done easily and quickly.⁵ Many people spend 10 hours or more per day looking at these displays, often without adequate rest.⁶ On the other hand, in the context of quality improvement services to the community, the government changed the pattern of public services from an offline system to an online system. This will certainly increase the use of the *Visual Display Terminal* (VDT) which can contribute to the emergence of eye disorders that can affect worker productivity.⁷

The Occupational Safety and Health Administration from the United States Government or the Occupational Safety and Health Administration (OSHA) defines Computer Vision Syndrome (CVS), as complex eye and vision problems experienced during and related to computer use. CVS is a recurring eye strain disorder that appears to be growing rapidly, with some studies estimating that 90 percent of the 70 million US workers who use computers for more than 3 hours per day experience CVS of some form or another.⁸ CVS can reduce a worker’s job performance by as much as 40

percent. These include reduced accuracy in work and decreased work volume.⁹

Policy changes related to increased use of *Visual Display Terminal* (VDT), will certainly affect the presenteeism of workers. Therefore, a study needs to be conducted to assess the risk factors for presenteeism in workers who use VDT in the Indonesian government.

Method

This is a cross-sectional observational study using a questionnaire method using the Stanford Presenteeism Scale (SPS-6) to assess presenteeism. Computer Vision Syndrome (CVS) at one of associated factor, was assessed using Indonesian version of CVS Questionnaire (CVSQ). Other confounding factors such as position, employment status, complaints of computer vision syndrome, length of service, and medical factors such as unhealthy habits, chronic diseases, psychological disorders, and other health problems were also investigated and associated with presenteeism in a multivariate manner.

The subject was considered as having “categorical unhealthy habit” if he or she possesses one or more unhealthy habit. The subject was considered as having “categorical chronic diseases” if he or she possesses one or more chronic diseases. The subject was considered as having “categorical psychological disorders” if he or she possesses one or more psychological disorders. The subject was considered as having “categorical other health problems” if he or she possesses one or more other health problems. The research subjects were workers in government offices x the online public service department who had worked on a computer or laptop for more than 3 hours a day with a minimum working period of 1 month and provided written consent.

Data collection was carried out through the interview method using the Googleform electronic media. The research data was analyzed using SPSS version 26 by conducting univariate data analysis to describe the characteristics of respondents, bivariate and multivariate.

Result

A total of 201 research subjects, male (60.2%) and an average age of 36.7 (± 6.8) were included in this study. The majority of workers are married (85.6%) with the

education level of the majority being Bachelor Degree (70.1%). The average duration of work was 9.5 ± 5.9 with long working hours 7 ± 1.6 hours for using computer. The prevalence of presenteeism is 44.28% and computer vision syndrome complaints (Positive CVSQ score) were found 84.5%. There were 96 workers (56.4%) with complaints of CVS and no presenteeism.

Table 1 describes the characteristic of the subjects. with 44.28% presenteeism, 84.5% subjects with CVS complaints, 69.7% the worker status are permanent. According to a questionnaire filled out by workers, the majority of workers are satisfied with their jobs (93%) although 60.2% workers claim to work >40 hours a week.

From the medical characteristics of workers, the prevalence of obesity weight is 56.3%. With 45.3% workers use glasses and only one person uses contact lenses. LBP complaints became the most chronic disease complained by 40.8% subjects. Related to other health problems, gastritis / ulcer is the most complained about 23.4% subjects with Cumulatively 44.8% subjects have other health problems.

There are 65.2% subjects have unhealthy habits. Psychological disorders are the variable with the least prevalence in workers, because cumulatively only 30 workers experience psychological disorders with mood disorders complained by 22 workers (10.9%). The rest of the anxiety, depression, and mental fatigue complained <5% of workers

Table 1. Variable characteristic

Variable		Frequency	% (n=201)
Presenteeism	Presenteeism (Low SPS score 6-17)	89	44.28%
	No Presenteeism (High SPS score 18-30)	112	55.72%
CVS	Positive (CVSQ \geq 6)	170	84.58%
	Negative (CVSQ <6)	31	15.42%
Worker status	PNS (Permanent)	140	69.7%
	PPNPN (Non-permanent)	61	30.3%
Work satisfaction	Satisfied	180	93.0%
	Not Satisfied	21	7.0%
Long working hours	\leq 40 hours/week	80	39.8%
	>40 j hours/week	121	60.2%
Nutritional status	Normal	87	43.3%
	Overweight>25kg/m ²	106	53.2%
	Underweight<18.5kg/m ²	8	40%
Position	Coordinator (top)	13	6.5%
	Sub-Coordinator (middle)	39	19.4%
	Functional / staff (low)	149	69.2%
Refraction aids	Glasses	91	45.3%
	Contact lens	1	0.5%
Unhealthy habits	Never exercise	75	37.3%
	Never breakfast	34	16.9%
	Smoking	53	26.4%
	Alcohol	3	1.5%
	Unhealthy habits	131	65.2%
Categorical Unhealthy habits	No	70	34.8%
Chronic disease	Hypertension	18	9.0%
	Cardiovascular disease	34	16.9%
	Osteoarthritis	31	15.4%
	Low back pain	82	40.8%

Variable		Frequency	% (n=201)
Categorical chronic Disease	Chronic disease	101	50.2%
	No	100	49.8%
Other health Disorders	Physical fatigue	31	15.4%
	Fever	11	5.5%
	Headache / migrain	29	14.4%
	Upper respiratory tract Infection	15	7.5%
	Diarrhea	8	4.0%
	Gastritis	47	23.4%
Categorical Cumulative of other Health disorders	Cumulative of other health Disorders	90	44.8%
	No	111	55.2%
Psychological disorder	Mood disorder	22	10.9%
	Worry	8	4.0%
	Depresion	3	1.5%
	Mentaly fatigue	9	4.5%
Categorical Cumulative of Psychological disorder	Psychological disorder	30	14.9%
	No	171	85.1 %

In the multivariate analysis described in table 2 and table 3, it was found that worker status was the variable that had the most influence on presenteeism ($p < 0.001$). From the calculation of the adjusted odds ratio, PPNPN worker status has a 7.08x (3.1-15.8x) risk of experiencing presenteeism compared to PNS worker status. Furthermore, the position variable also influences presenteeism ($p = 0.009$) with a risk of 3.45 times (1.3-8.5) in functional/staff positions.

Age of workers has an influence on the multivariate level ($p = 0.008$) which was initially a determinant at the bivariate level ($p = 0.19$). This shows that the strength of the influence of age is still below the status of workers and positions. Even so, it can be concluded that a younger age has a risk of becoming presenteeism of 1.08x (1.02-1.14).

The variables of psychological disorder and length of work have no relationship at the multivariate level. And for other variables not included in the study, including computer vision syndrome complaints, there is no relationship at the bivariate level. In addition, the Nagelkerke R^2 result was 0.276, which means that 27.6% is influenced by the variables above for presenteeism to occur, the rest by other variables not examined.

Discussion

As many as 44.28% of government workers as public servant in this study experienced presenteeism. This is lesser than presenteeism among police (65.9%), as stated in another study by Carmia(2020). This might happened due to different in work process and prioritizing discipline both in duty and in giving sanctions, disciplinary actions are imposed directly in the form of reprimands or physical where the purpose is to foster the police itself.

Worker status was found to be significantly related to presenteeism ($p < 0.001$, aOR=7.08 3.1-15.8). This might happened due to job insecurity among non permanent status workers, because frequent absences may impair their performance indexes. In PNS, presenteeism is less than PPNPN, it can also be due to the current Civil Servant organizational system in Indonesia, which is illustrated in the Employee Work Target system or SKP. SKP is made with the aim of ensuring the objectivity of civil servant development carried out based on the work performance system, and SKP is a reference for assessment of civil servant workers who will affect the assessment of these workers. So that performance is not only judged based on attendance alone.

Table 2. Table of determinant factors (category) on presenteeism

Variable	<i>Presenteeism (Low SPS6)</i>	<i>No Presenteeism (High SPS6)</i>	Total	P Bivariate	cOR	P Multivariate	aOR (95%)CI
Position	Functional / staff (low)	78 (52.3%)	71 (47.6%)	149 (100%)		4.09 (1.9-8.5)	3.45 (1.3-8.6)
	Coordinate (top)*/ Subcoordinate* (middle)	11 (21.1%)	41 (78.8%)	52 (100%)	<0.001	Ref	Ref
Worker status	PPNPN (Non-permanent)	45 (73.7%)	16 (26.2%)	61 (100%)	<0.001	6.12 (3.1-12)	7.08 (3.1-15.8)
	PNS (Permanent)	44 (31.4%)	96 (68.5%)	140 (100%)		Ref	Ref
Work satisfaction	Not Satisfied	13 (62%)	8 (38%)	21 (100%)	0.08	2.22 (0.8-5.6)	2.0 (0.5-4.6)
	Satisfied	76 (42.2%)	104 (57.7%)	180 (100%)		Ref	Ref
Psychological disorder	Yes	17 (56.6%)	13 (43.3%)	30 (100%)	0.13	1.7 (0.8-3.9)	2.07 (0.8-4.8)
	No	72 (42.1%)	99 (57.8%)	171 (100%)		Ref	Ref

Note : * = Analysis Combined
R²= 0.276

Table 3. Table of determinant factors (numerically) on presenteeism

Numeric variable	<i>Presenteeism (High SPS6)</i> Mean (±Standart Deviation)	<i>No Presenteeism (Low SPS6)</i> Mean (±Standart Deviation)	Total	P Bivariat	P Multivariat	aOR (95% CI)
Age (years)	36.1 (±7.12)	37.1 (±6.62)	-	0.19	0.008	1.08 (1.02-1.14)
	Median (min-max)	Median (min-max)				
Length of work (years)	8 (1-26)	9 (1-29)	-	0.08	0.990	0.9 (0.909-1.092)

A comparative study was conducted to worker status compared to all other related (determinant variabel). Tabel 4 show comparative determinant variabel on worker status descriptively

Table 4. Comparative study on worker status

Variable	PNS (Permanent) (n=140) % on Worker Status	PPNPN (Non- permanent) (n=61) % on Worker Status	Total (n=201)
Position	Functional / staff (low)	88 (62,8%)	61 (100%) 149 (74,1%)
	Coordinate (top)*/ Subcoordinate* (middle)	52 (37,1%)	0 (0%) 52 (25,9%)
Work satisfaction	Not satisfied	12 (8,6%)	9 (14,8%) 21 (10,4%)
	Satisfied	128 (91,4%)	52 (85,2%) 180 (89,6%)
Psychological disorder	Yes	21 (15%)	9 (14,8%) 30 (100%)
	No	119 (85,0%)	52 (85,2%) 171 (100%)
Age (years)	38,6 (±6,5)	32,2 (±5,3)	
Length of work (years)	11,2 (±6,5)	5,8 (±6,5)	

Position was also found to be significantly related to presenteeism ($p < 0.001$). The risk of presenteeism is 3.45x (95% CI = 1.3-8.5) in functional workers / staff. Study from Lohausa et al, (2019)³ conveyed organizational factors that influence presenteeism such as salary, job demands, work pressure, commitment to the organization, and easy replacement of workers (non-permanent status) and between high and low positions.

Functional positions / staff at or status of Indonesian civil servants are positions that are lower than the position of Coordinator / sub-coordinator. Functional / staff positions will have low salaries, possibly high work pressure, commitment to the organization that may be low, and of course easily replaced by other employees.¹⁶ All of these are risk factors for presenteeism. Although job demands are heavier for workers with high positions, other risk factors support presenteeism for workers with low positions.³

The average age of the group of workers who experienced presenteeism was younger (36.1 years (±7.12)) than those who did not experience presenteeism (37.1 years (±6.62)). From the results of the multivariate test, significant results were obtained for age with a p value < 0.05 , with an adjusted odds ratio of 1.08x (95% CI = 1.02-1.14) for younger ages. This is consistent

with the results of a cross-sectional study at a company in China which states that younger workers (age 20-35 years) have a higher prevalence of presenteeism than older workers (age 36-59 years).¹¹ According to the authors of the study, this may be because older workers have more experience compared to younger workers.¹¹

As the variable that had the most influence on presenteeism, a comparative study was conducted to worker status compared to all other related (determinant variabel). As shown in table, position are possibly the major factor of presenteeism among non-permanent worker due to 100% of PPNPN worker are low position compare to permanent workers with low position. Other variable proportion that are larger on PPNPN are work distastisfaction, followed by younger mean of age and shorter length of work. As this study concluded, a younger age has a risk of becoming presenteeism.¹¹

Conclusion

Low positions and non permanent are the determinant factors to be presenteeism. So they must be monitored and coached for them to increase the work engagement and more productive by decreased the presenteeism.

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