Title: Association between sudden work recall and psychological health issues: a cross-sectional analysis of the 6th Korean Working Conditions Survey

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Ethics statement

This study was approved by the Institutional Review Board (IRB) review of Soonchunhyang University Cheonan Hospital (IRB No. 2025-06-030)

Disclosure

All authors have no potential conflicts of interest.

Author Contributions (Use CRediT terms)

Conceptualization: Kim DW. Data curation: Kim DW. Formal analysis: Kim DW. Supervision: Lee JH and Lee KJ. Writing - original draft: Kim DW. Writing - review and editing: Kim DW, Lee JH, and Lee KJ.

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Abstract

Background: The impact of global integration has led to an increase in non-standard work patterns, threatening workers' health. Psychological health problems, such as anxiety and fatigue, negatively affect workers' health and safety. Sudden work recall, a situation where workers are asked to return to work under unpredictable circumstances, is associated with uncertainty. Research on the relationship between sudden work recall and anxiety and fatigue is limited, and this study aims to investigate this relationship among Korean workers.

Methods: The study used data from the 6th Korean Working Conditions Survey. To analyze the pure effects of sudden work recall, the final sample was limited to 15,702 non-shift workers with a 'good' subjective health status. The presence of sudden work recall was categorized into three frequency groups: "several times a month," "rarely," and "never." Anxiety and fatigue were each categorized into "yes" or "no" responses. Multiple logistic regression analysis was performed.

Results: After adjusting for demographic and occupational characteristics, the odds ratio (OR) for anxiety in the 'several times a month' group was 4.066 (95% confidence interval [CI]: 2.787–5.931), indicating a significantly higher risk. Conversely, the OR for the 'rarely' group was 1.363 (95% CI: 0.921–2.017), which was not statistically significant. A similar pattern was observed for fatigue: the 'several times a month' group had a significantly higher risk (OR: 1.875, 95% CI: 1.490–2.359), but the 'rarely' group (OR: 0.955, 95% CI: 0.750–1.215) did not.

Conclusions: The relationship between sudden work recall and psychological health may not be a simple linear one. The results suggest that only a high frequency of sudden work recall is associated with an increased risk of anxiety and fatigue. Therefore, it is necessary to establish appropriate measures and to conduct additional research in this area.

Keywords: fatigue; anxiety; sudden work recall; occupational stress; Korean Working Conditions Survey

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BACKGROUND

Global integration has led to increased pressure for labor flexibility, and the resulting non-standard work patterns threaten the health of workers[1]. Health problems lead to costs associated with absenteeism and presenteeism, causing a loss in worker productivity[2]. Additionally, chronic health issues among workers increase medical costs, making worker health a matter of social significance[3]. Among various health issues, psychological health problems, in particular, cause stress, negatively affect motivation, and affect the quality of life, including depression and self-esteem[4]. For instance, a study involving 201 office workers showed that high job stress leads to anxiety, depression, fatigue, and a higher intention to quit[5].

Among the psychological health issues, anxiety and fatigue have been significantly addressed in worker health. The prevalence of anxiety and fatigue increases as the commuting time between work and home gets longer[6], and fatigue tends to increase with longer working hours[7]. Higher levels of anxiety are associated with an increased prevalence of depression[8], decreased job satisfaction,[9] and, in construction workers, more injuries and pain[10]. Moreover, fatigue negatively affects the health and safety of workers[11] and directly reduces performance in professions such as nursing[12]. Anxiety extends beyond direct treatment costs, leading to indirect costs due to workers' social dysfunction[13,14]. Fatigue also results in significant economic costs in the form of informal care and employment losses[15]. Therefore, this area warrants essential research.

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Sudden work recall is a specific situation in which employees are requested to return to work in unpredictable circumstances. This can occur across various industries, from agriculture, manufacturing, and construction to real estate, arts, sports, and leisure-related industries. It is especially prevalent in professions such as emergency responders and public institutions that require 24-hour operations[16].

The core characteristic of sudden work recall is uncertainty. People experience uncertainty when they anticipate that future outcomes will differ from their expectations[17], and when surprise is

unavoidable[18]. Previous research has shown that work schedule unpredictability manifests in specific forms, such as unanticipated changes to work schedules, which supports the concept of uncertainty in sudden work recall[19]. This uncertainty can be explained through the Job Demand-Control-Support model of job stress. Sudden work recall is likely to increase an employee's job demands and decrease their control over their work schedule, which can lead to a state of high strain[18]. This high-strain state is considered a major cause of psychological problems and health deterioration[20]. The stress from uncertainty affects the brain regions involved in decision-making processes, leading to an overall decline in decision-making performance[21]. Uncertainty triggers high activity in the amygdala and dorsomedial prefrontal cortex of the brain, which increases the likelihood of risky choices[22]. During periods of uncertainty, the brain demands additional energy from the body. If this uncertainty persists without resolution, it can continuously trigger a brain energy crisis, leading to an allostatic load—a state of chronic stress that affects bodily functions. This can result in functional brain disorders, such as memory impairment[18].

In the 6th Work Environment Survey, psychological health issues were investigated in terms of depression, anxiety, and fatigue. Among these, research has indicated a correlation between sudden work recall and depression[16]. However, the relationship between sudden work recall and other significant psychological health issues, such as anxiety and fatigue, has not been extensively studied. Additionally, most studies conducted domestically focus on specific work pattern such as shift work, and research dealing with the frequency of sudden work recall associated with uncertainty is rare[23].

Therefore, this study aimed to comprehensively analyze the effect of sudden work recall on anxiety and fatigue among domestic workers. We used the results of the 6th Working Conditions Survey (KWCS) conducted through structured questionnaires distributed to workers nationwide from 2020 to 2021. This analysis sought to understand the broader effects of sudden work recalls in the South Korean workforce.

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METHODS

Data sources and study population

This study used data from the 6th KWCS conducted between 2020 and 2021. Every three years, the Korea Occupational Safety and Health Agency administers the KWCS to formulate strategies aimed at enhancing working conditions. And survey items are based on a recent version of the European Working Conditions Survey[24]. In the 6th KWCS, on-site surveys were halted owing to the influence of COVID-19, leading to the adoption of alternative approaches, such as non-face-to-face online surveys.

A total of 50,538 workers aged ≥15 years participated in the 6th KWCS. We excluded 17,475 self-employed and unpaid family workers because the main purpose of the study was to target wage workers. Additionally, 18 workers under the age of 18 were excluded based on the study's age criteria. We also excluded 8,780 workers who answered "don't know/no response" or "refused" to the main variables and covariates. Finally, to analyze the pure effects of "sudden work recall," an additional 2,384 shift workers and 6,179 workers with "Fair" or "Bad" subjective health status were excluded. This process resulted in a final sample of 15,702 participants.

(Figure 1. Flowchart of participant selection)

Measurement

sudden work recall was assessed using the following question in the 6th Working Environment Survey questionnaire: “Over the past year (or since starting your main job if less than 1 year), how often have you been asked by your company (including business or agricultural or fishing activities) or organization to suddenly and quickly return to work?” Those who answered “don't know/no response,” or “refusal” to the questions were excluded from the study. Those who answered “every day,” “several times a week,” “several times a month,” or “rarely” were considered to have had a sudden work recall, whereas those who answered “never,” or “not applicable” were considered not to have had a sudden

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work recall. The frequency of sudden work recall was divided into three bands, with those who answered “every day,” “several times a week,” and “several times a month” categorized under “several times a month;” those who answered “rarely” under “rarely;” and those who answered “never” and “not applicable” under “never”[16].

Anxiety and fatigue were defined based on responses to the question, "In the past 1 year (or since starting your main job if less than 1 year), have you experienced the following health issues?" specifically in the categories of 'anxiety' or 'fatigue,' respectively. Participants who responded 'yes' were considered to have anxiety or fatigue, whereas those who responded 'no' were defined as not having anxiety or fatigue.

Personal demographic characteristics of the participants included sex, age, education, and monthly income. Sex was categorized as male or female, and age was categorized as <30, 30–39, 40–49, 50–59, and ≥60. Education was categorized as middle school or lower, high school graduate, and college graduate or higher. Monthly income was assessed and grouped (in units of 10,000 KRW) as follows: < 200, 200–299, 300–399, and ≥ 400[25].

Occupational characteristics included questions about occupation, weekly working hours, type of employment, and workplace size. Occupation was assessed by the question “Which of the following occupational classifications best describes what you do (your job)?” Managers, professionals, and office workers were classified as white collar; technicians, paraprofessionals, skilled workers in agriculture, forestry, and fisheries, craftsmen and related skilled workers, operators and assemblers of devices and machinery, simple laborers, and military personnel as blue collar; and service and sales workers as pink collar. Weekly working hours were categorized as <40 hours, 40–52 hours, and >52 hours based on the Labor Standards Act’s prescribed working hours of 40 hours and the maximum working hours of 52 hours including 12 hours of overtime; Type of employment was categorized as full-time or part-time based on the question “Which of the following is your status at work?”; Size of workplace was categorized as small (1–9), medium (10–249), or large (≥250)[26].

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131 **Statistical analysis**

132 First, frequency analysis was conducted to determine the frequency of sudden work recall,
133 demographic characteristics, occupation, weekly working hours, type of employment and workplace
134 size. Second, chi-squared tests were conducted to determine the association among sudden work recall,
135 anxiety, and fatigue. Third, odds ratios (ORs) and 95% confidence intervals (CIs) were calculated
136 using multiple logistic regression to determine the association among the frequency of sudden work
137 recall, anxiety, and fatigue. Model I was adjusted for demographic characteristics (age, sex, education
138 and income level). In addition to demographic characteristics, Model II was adjusted for occupational
139 characteristics that are considered to influence anxiety and fatigue, including occupation, weekly
140 working hours, type of employment, and workplace size. All statistical analyses were performed using
141 SPSS 27.0 (IBM Corp., Armonk, NY, USA).

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RESULTS

(Table 1. General characteristics of the study population)

Table 1 shows the general characteristics of 15,702 participants. Considering demographic characteristics, women (51.2%) outnumbered men (48.8%), the majority were in their 40s (26.1%), and the largest number had a college degree or higher (61.6%). In terms of occupational characteristics, considering workplace size, the largest number was in the medium group (43.8%). A total of 19.3% had experienced sudden work recall and 80.7% had not. The prevalence of anxiety was 3.0%, and the prevalence of fatigue was 18.0%.

(Table 2-3. Proportion of anxiety and fatigue with respect to demographic variables, occupational characteristics, sudden work recall, and frequency of sudden work recall, N [%].)

Table 2-3 shows the proportion of anxiety and fatigue with respect to demographic variables, occupational characteristics, sudden work recall, and the frequency of sudden work recall. The prevalence of anxiety was highest among those with a monthly income of 300-399 million KRW (3.5%) and was high in larger workplaces (4.0%). For fatigue, the prevalence increased with age and was highest among those aged 60 or older (20.7%). The prevalence was also higher among those with a lower education level (middle school or less, 20.8%) and among workers working more than 52 hours per week (27.3%).

Considering sudden work recall status, a significantly higher percentage of the group that experienced it (6.9%) reported anxiety than the group that did not (2.1%). Similarly, a significantly higher proportion of those who experienced sudden work recall (26.3%) reported fatigue than those who did not (16.0%).

(Table 4-5. Multiple logistic regression analysis of anxiety and fatigue according to the frequency of sudden work recall)

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Table 4-5 show the results of the multiple logistic regression analysis for the odds ratio (OR) of anxiety and fatigue. In the final adjusted model (Model II), the OR for the 'several times a month' recalled group was 4.066 (95% CI: 2.787–5.931), indicating a significantly higher risk of anxiety. Conversely, the OR for the 'rarely' recalled group was 1.363 (95% CI: 0.921–2.017), which was not statistically significant. For fatigue, the OR for the group recalled 'several times a month' was 1.875 (95% CI: 1.490–2.359), indicating a significantly higher risk of fatigue. Conversely, the OR for the group recalled 'rarely' was 0.955 (95% CI: 0.750–1.215), which was also not statistically significant.

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DISCUSSION

This study used the 6th Korean Working Conditions Survey (KWCS) data, conducted from 2020 to 2021, to investigate the relationship between sudden work recall, anxiety, and fatigue among non-shift workers with a 'good' subjective health status. The study aimed to minimize the influence of pre-existing health issues on the results by analyzing a population of healthy workers.

The results showed that workers who experienced sudden work recall had a significantly higher risk of anxiety and fatigue than those who did not. However, in terms of frequency, the risk of anxiety was found to be significantly higher only in the group that experienced sudden work recall 'several times a month,' while the 'rarely' recalled group showed no significant association. A similar pattern was observed for fatigue: the group recalled 'several times a month' had a significantly higher risk, but the 'rarely' group did not. These findings suggest that the relationship between sudden work recall and these two symptoms may not be a simple linear one.

This can be interpreted in several ways. First, the findings may be explained by the specific characteristics of the exposure. The 'several times a month' group included workers who experienced very frequent recalls, such as 'every day' or 'several times a week,' clearly distinguishing it from the 'rarely' group. Second, the results suggest that a threshold effect may exist for both anxiety and fatigue, where a significant health risk only appears after a certain frequency of sudden work recall. This indicates a non-linear dose-response relationship, where the accumulation of stress from uncertainty only translates into a significant health risk after a certain point[27].

Compared with previous studies, this research offers several important insights. A number of papers describe the relationship between stressors and health outcomes as a complex, multidimensional interaction[28,29]. In this context, this study made a significant finding for both anxiety and fatigue. The fact that the increased risk of sudden work recall was significant only in the 'several times a month' group and not in the 'rarely' group suggests a new contribution to the possibility of a threshold effect or a non-linear dose-response relationship.

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Previous studies have shown that on-call work is associated with sleep disturbances and stress[30], and is linked to physical health problems, psychological health problems, and injuries[31]. It is also known that job insecurity has a negative impact on mental health[32]. This study is significant in that it expands the scope of the discussion by showing that the concept of sudden work recall, through the common denominator of uncertainty, can affect health through a similar mechanism as previous studies.

The results of this study are consistent with the predictions of the job stress model, which suggests that sudden work recall can increase employees' job demands and decrease their job control, leading to a state of high strain[33]. This high-strain state is known to be a major cause of psychological problems and health deterioration[34,35]. Specifically, our analysis found a significant increase in the risk of anxiety and fatigue in the group with the highest frequency of sudden work recall ('several times a month'). These findings provide concrete evidence to support the theoretical framework presented in this study.

This study has several strengths. The use of large-scale national data from the 6th Korean Working Conditions Survey (KWCS) enhances the reliability of the findings and their generalizability to the South Korean workforce. The originality of this study's theoretical approach is a key strength. While previous research has predominantly focused on mental health issues related to specific work type, such as shift work[36,37], this study introduces and directly links the concept of sudden work recall with the theoretical framework of uncertainty to propose a new area of research. By analyzing a population exclusively with a 'good' subjective health status, the study minimized the confounding effects of pre-existing health issues, allowing for a focused examination of the pure impact of sudden work recall.

However, this study also has several limitations. First, as a cross-sectional study, it is difficult to clearly identify the causal relationship between sudden work recall and anxiety and fatigue, and the possibility of reverse causation cannot be excluded. The specific temporal context of sudden work recall (whether inside or outside of work hours) also lacks clarity. Nevertheless, this study holds clinical and policy importance by confirming a significant association, indicating that sudden work recall is a potential risk factor for anxiety and fatigue, using large-scale national data[38].

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Second, the presence and severity of anxiety and fatigue relied on self-reported questionnaire data, meaning that subjective bias or recall bias may be involved. However, such self-reported data reflect the discomfort actually felt by individual workers and, as a universally used method in large-scale epidemiological surveys, it has sufficient value as basic data for screening health problems and for policy formulation[39].

Future research should conduct longitudinal studies to complement the cross-sectional limitations of this study and clarify causal relationships. In-depth investigations are also needed into the specific circumstances of sudden work recall and to explore mediating variables. Furthermore, it will be beneficial to seek ways to improve working hours and compensation systems to aid in policy formulation.

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CONCLUSIONS

This study used the 6th Korean Working Conditions Survey (KWCS) data to investigate the relationship between sudden work recall, anxiety, and fatigue among non-shift workers with a 'good' subjective health status. The analysis revealed a significant association between sudden work recall and both anxiety and fatigue.

The risk of anxiety was found to be significantly higher in the group that experienced sudden work recall 'several times a month,' while the 'rarely' recalled group showed no significant association. A similar pattern was observed for fatigue: the 'several times a month' group had a significantly higher risk, but the 'rarely' group did not. These findings suggest that the relationship between sudden work recall and these two symptoms may not be a simple linear one.

In conclusion, there is a negative association between sudden work recall and workers' health, based on reduced job control and uncertainty in work schedules. Psychological health problems like anxiety and fatigue can impair worker performance and incur social costs. It will be important to research ways to reduce the frequency of sudden work recall, discuss predictable work schedules, and establish rest and compensation systems to create a safe working environment.

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353 **Figure Legends**

354 **Fig. 1.** Flowchart of participant selection.

355 KWCS: Korean Working Conditions Survey.

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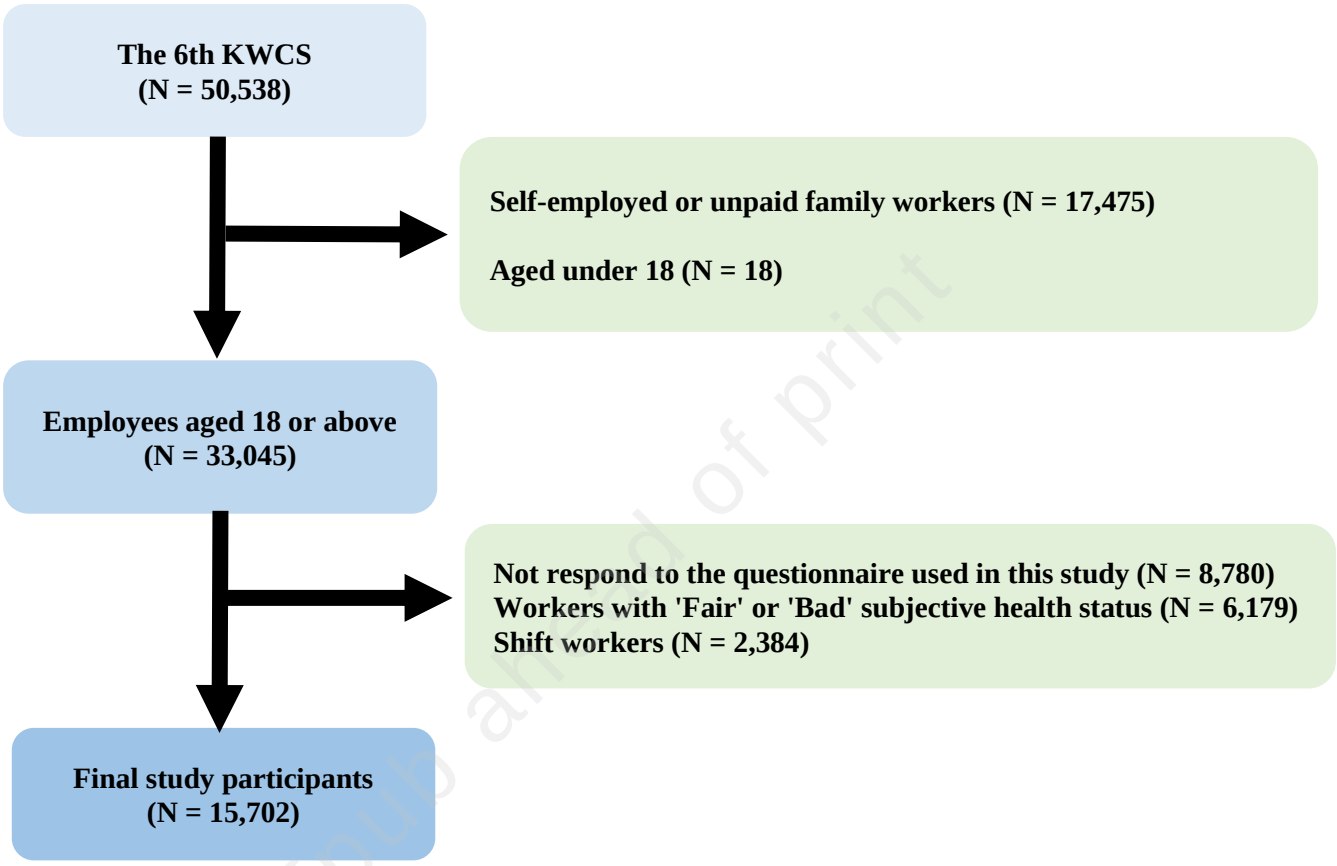

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357 **Tables**

358 **Table 1.** General characteristics of the study population, N (%).

Characteristics	Total (N = 15,702)
Gender	
Male	**7666 (48.8)**
Female	**8036 (51.2)**
Age	
< 30	**2363 (15.0)**
30–39	**3944 (25.1)**
40–49	**4102 (26.1)**
50–59	**3486 (22.2)**
≥ 60	**1807 (11.5)**
Education	
≤ Middle school	**967 (6.2)**
High school	**5066 (32.3)**
≥ College	**9669 (61.6)**
Monthly income (10,000 KRW)	
< 200	**4144 (26.4)**
200-299	**5578 (35.5)**
300-399	**3465 (22.1)**
≥ 400	**2515 (16.0)**
Occupation	
White collar	**8119 (51.7)**
Pink collar	**3524 (22.4)**
Blue collar	**4059 (25.9)**
Weekly working hours	
< 40 hours	**2659 (16.9)**
40–52 hours	**11884 (75.7)**
>52 hours	**1159 (7.4)**
Size of workplace	
Small (1–9 workers)	**6156 (39.2)**
Medium (10–249 workers)	**6877 (43.8)**
Large (≥ 250 workers)	**2669 (17.0)**
Type of employment	
Regular	**13012 (82.9)**
Temporary	**2690 (17.1)**
Anxiety	
Yes	**468 (3.0)**
No	**15234 (97.0)**
Fatigue	
Yes	**2826 (18.0)**
No	**12876 (82.0)**
Sudden work recall	
No	**12667 (80.7)**
Yes	**3035 (19.3)**
Frequency of sudden work recall	
None	**12667 (80.7)**

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Rarely	**2629 (16.7)**
Several times a month	**406 (2.6)**

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Table 2. Proportion of anxiety with respect to demographic variables, occupational characteristics, sudden work recall, and frequency of sudden work recall, N [%].

Variables	Anxiety		*P*-value [a]
	No	Yes	
Gender			**0.815**
Male	**7440 (97.1)**	**226 (2.9)**	
Female	**7794 (97.0)**	**242 (3.0)**	
Age			**0.307**
< 30	**2307 (97.6)**	**56 (2.4)**	
30–39	**3818 (96.8)**	**126 (3.2)**	
40–49	**3969 (96.8)**	**133 (3.2)**	
50–59	**3386 (97.1)**	**100 (2.9)**	
≥ 60	**1754 (97.1)**	**53 (2.9)**	
Education			**0.359**
≤ Middle school	**941 (97.3)**	**26 (2.7)**	
High school	**4927 (97.3)**	**139 (2.7)**	
≥ College	**9366 (96.9)**	**303 (3.1)**	
Monthly income (10,000 KRW)			**<0.001**
< 200	**4052 (97.8)**	**92 (2.2)**	
200-299	**5408 (97.0)**	**170 (3.0)**	
300-399	**3344 (96.5)**	**121 (3.5)**	
≥ 400	**2430 (96.6)**	**85 (3.4)**	
Occupation			**0.217**
White collar	**7861 (96.8)**	**258 (3.2)**	
Pink collar	**3433 (97.4)**	**91 (2.6)**	
Blue collar	**3940 (97.1)**	**119 (2.9)**	
Weekly working hours			**0.138**
< 40 hours	**2595 (97.6)**	**64 (2.4)**	
40–52 hours	**11519 (96.9)**	**365 (3.1)**	
>52 hours	**1120 (96.6)**	**39 (3.4)**	
Size of workplace			**0.001**
Small (1–9 workers)	**6001 (97.5)**	**155 (2.5)**	
Medium (10–249 workers)	**6672 (97.0)**	**205 (3.0)**	
Large (≥ 250 workers)	**2561 (96.0)**	**108 (4.0)**	
Type of employment			**0.603**
Regular	**12620 (97.0)**	**392 (3.0)**	
Temporary	**2614 (97.2)**	**76 (2.8)**	
Sudden work recall			**<0.001**
No	**12395 (97.9)**	**272 (2.1)**	
Yes	**2839 (93.1)**	**196 (6.9)**	
Frequency of sudden work recall			**<0.001**
None	**12395 (97.9)**	**272 (2.1)**	
Rarely	**2466 (93.8)**	**163 (6.2)**	
Several times a month	**373 (91.9)**	**33 (8.1)**	

[a]Calculated using the chi-square test.

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382 **Table 3.** Proportion of fatigue with respect to demographic variables, occupational characteristics,
383 sudden work recall, and frequency of sudden work recall, N [%].

Variables	Fatigue		*P*-value [a]
	No	Yes	
Gender			**0.250**
Male	**6314 (82.4)**	**1352 (17.6)**	
Female	**6562 (81.7)**	**1474 (18.3)**	
Age			**<0.001**
< 30	**2076 (87.9)**	**287 (12.1)**	
30–39	**3294 (83.5)**	**650 (16.5)**	
40–49	**3320 (80.9)**	**782 (19.1)**	
50–59	**2754 (79.0)**	**732 (21.0)**	
≥ 60	**1432 (79.3)**	**375 (20.7)**	
Education			**<0.001**
≤ Middle school	**766 (79.2)**	**201 (20.8)**	
High school	**4035 (79.7)**	**1031 (20.3)**	
≥ College	**8075 (83.5)**	**1594 (16.5)**	
Monthly income (10,000 KRW)			**0.362**
< 200	**3427 (82.7)**	**717 (17.3)**	
200-299	**4584 (82.2)**	**994 (17.8)**	
300-399	**2817 (81.3)**	**648 (18.7)**	
≥ 400	**2048 (81.4)**	**467 (18.6)**	
Occupation			**<0.001**
White collar	**6828 (84.1)**	**1291 (15.9)**	
Pink collar	**2873 (81.5)**	**651 (18.5)**	
Blue collar	**3175 (78.2)**	**884 (21.8)**	
Weekly working hours			**<0.001**
< 40 hours	**2243 (84.4)**	**416 (15.6)**	
40–52 hours	**9790 (82.4)**	**2094 (17.6)**	
>52 hours	**843 (72.7)**	**316 (27.3)**	
Size of workplace			**0.839**
Small (1–9 workers)	**5062 (82.2)**	**1094 (17.8)**	
Medium (10–249 workers)	**5629 (81.8)**	**1248 (18.2)**	
Large (≥ 250 workers)	**2185 (81.9)**	**484 (18.1)**	
Type of employment			**<0.001**
Regular	**10737 (82.5)**	**2275 (17.5)**	
Temporary	**2139 (79.5)**	**551 (20.5)**	
Sudden work recall			**<0.001**
No	**10638 (84.0)**	**2029 (16.0)**	
Yes	**2238 (73.7)**	**797 (26.3)**	
Frequency of sudden work recall			**<0.001**
None	**10638 (84.0)**	**2029 (16.0)**	
Rarely	**1938 (73.7)**	**691 (26.3)**	
Several times a month	**300 (73.9)**	**106 (26.1)**	

402 [a]Calculated using the chi-square test.

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403 **Table 4.** Multiple logistic regression analysis of anxiety according to the frequency of sudden work

404 recall.

	Anxiety	OR	95% CI
Crude			
	None	**Reference**	
	Rarely	**1.338**	**0.907–1.976**
	Several times a month	**4.032**	**2.769–5.870**
Model I [a]			
	None	**Reference**	
	Rarely	**1.346**	**0.911–1.990**
	Several times a month	**4.025**	**2.762–5.865**
Model II [b]			
	None	**Reference**	
	Rarely	**1.363**	**0.921–2.017**
	Several times a month	**4.066**	**2.787–5.931**

405

406 OR: odds ratio, CI: confidence interval.

407 [a] Adjusted by demographic characteristics (gender, age, education, monthly income)

408 [b] Adjusted by demographic characteristics and occupational characteristics (occupation, weekly

409 working hours, workplace size, type of employment)

410

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411 **Table 5.** Multiple logistic regression analysis of fatigue following sudden work recall

	Fatigue	OR	95% CI
Crude			
	None	**Reference**	
	Rarely	**0.991**	**0.781–1.257**
	Several times a month	**1.853**	**1.477–2.323**
Model I [a]			
	None	**Reference**	
	Rarely	**0.989**	**0.778–1.256**
	Several times a month	**1.922**	**1.530–2.414**
Model II [b]			
	None	**Reference**	
	Rarely	**0.955**	**0.750–1.215**
	Several times a month	**1.875**	**1.490–2.359**

412

413 OR: odds ratio, CI: confidence interval.

414 [a] Adjusted by demographic characteristics (gender, age, education, monthly income)

415 [b] Adjusted by demographic characteristics and occupational characteristics (occupation, weekly

416 working hours, workplace size, type of employment)

417

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