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COVID-19 Pandemic's Effects on Occupational Health and Perceived Work Ability of a Large Group of Italian Banking Employees

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Abstract

Background: *The COVID-19 pandemic compelled changes to the structure and organization of many occupational sectors that may impact workers' well-being and work-related symptoms.* **Objective:** *To evaluate the effects of work-related modifications associated with the COVID-19 pandemic on occupational health outcomes and work ability (WA) among a large group of Italian banking employees.* **Methods:** *2,859 employees visited during health surveillance in 2021 were divided into two job groups: front-office (FO) and back-office (BO) workers. Data on conditions associated with office work, psychological distress, WA, and fitness-to-work judgment were analyzed and compared with available pre-COVID (2018–2019) studies.* **Results:** *After lockdown, a 28% increase in asthenopia was found in BO, while a 22% and 9% increase in musculoskeletal symptoms was found in BO and FO, respectively. Moreover, a 28% rise in stress-related symptoms and a 17% increase in psychotropic drug consumption were found in both groups. After lockdown, the prevalence of WAI scores moderate/poor decreased by 17% in each group, but no evidence of significantly improved WA emerged for either group. Fitness-to-work judgment without limitations prevalence remained unchanged.* **Conclusion:** *The study showed a reduced prevalence of analyzed outcomes compared to that found in the literature at pre-COVID and post-lockdown evaluation. A slight worsening in all outcomes examined post-lockdown was also highlighted in our study. It can be speculated that these results are linked to the measures the Institute took to support employees during the COVID-19 pandemic. Indeed, a comprehensive integration between occupational safety and health promotion practices is recommended to ensure the highest level of safeguarding for workers' well-being.*

1. Introduction

During the COVID-19 pandemic in Italy, business continuity was ensured by forcing changes to the structure and organization of various occupational sectors. This was done in compliance with regulations protecting public health [1, 2] to contrast the virus's spread.

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Throughout the "4.0" tertiary sector, which includes the banking industry, the widespread adoption of "smart" working (SW)—which was encouraged from the start of the nationwide lockdown to May 2020 and continued in many organizations until the end of the pandemic emergency—has had a substantial impact on workers' exposure to traditional work-related risk factors, potentially affecting work-related symptoms and employees' psychological well-being [3].

Data from Sondtel (Economic survey on industrial and service companies) [4] indicates that during the pandemic, particularly during the first and second waves (spring 2020 and winter 2020-2021), the relevance of SW in Italy significantly increased (the percentage of companies applying agile work increased from 28.7% in 2019 to 82.3% in 2020).

SW appeared to have beneficial effects such as improved job performance and focus at work; however, it was also linked to adverse effects such as increased social isolation of home workers, decreased free time for personal activities, and an overlap of work and family life [5].

Indeed, the COVID-19 pandemic has resulted in many workers being required to work from home, often in cramped and restricted spaces, using tablets, laptops, and smartphones. As a result of these changes, new risk factors are gradually emerging alongside the two major occupational risk factors historically linked to the office work setting: oculovisual overload (associated with prolonged use of a video terminal or other digital devices) and posture risk (concerning using a workstation that is not ergonomic or spending a lot of time stationary). The growing usage of SW during COVID-19 highlighted that operators in the tertiary sector must maintain a constant connection with "information and communication technologies" (ICT), which have evolved into essential instruments for job performance. Prolonged use of tablets, smartphones, and other electronic devices—often after regular business hours—might pose psychosocial risks due to issues with learning new software, data overload, hyperreactivity, and a blurring of the lines between personal and professional life (cognitive ergonomics). Furthermore, the development of ICT has the potential to affect workers' health significantly if it is not controlled or appropriately regulated, leading to excessive and compulsive use and an increased risk of digital addiction [8].

Additionally, the ongoing engagement with clients and the corresponding handling of disputes (which may involve physical or verbal abuse) in the banking industry may contribute to a high prevalence of psychological symptoms among Italian bank workers [9, 10], particularly for those who carried on providing in-person services to clients throughout the COVID-19 pandemic [11].

Psychological distress in tertiary workers can also contribute to a decline in perceived work ability (WA), which is the extent to which an employee believes he is physically and mentally capable of handling the demands of his job and workplace [12, 13]. A systematic review found that high mental work demands, a lack of decision-making autonomy, and an unsuitable work environment are among the factors most likely associated with poor WA in older age [14]. A poor WA raises the possibility that employees may intend to leave work early due to illness, stress, or depression, as well as the number of absences caused by these conditions [13].

Occupational physicians and other professionals involved in worker safety and health protection must oversee all these aspects, which are especially important in the "4.0" tertiary sector. This study aims to evaluate the effects of organizational restrictions and working changes related to the COVID-19 pandemic on occupational health (including asthenopia-like symptoms, musculoskeletal problems, stress-related symptoms, and psychotropic drug consumption) and WA among a large group of Italian banking employees divided into two job sub-groups: front-office (FO) and back-office workers (BO).

2. Methods

The study was conducted in a prime financial institution with over 95,000 employees, with branches throughout northern and southern Italy. Out of them, around one-third were subject to routine medical examinations by occupational physicians for exposure to occupational risks, as indicated by law. The study sample consisted of 2,859 workers

who were examined during a health surveillance program in 2021 (roughly one year after the national COVID-19 lockdown) and had a clinical examination documented in the electronic medical database two years before the COVID pandemic (2018-2019). The study was conducted as a repeated cross-sectional study, also known as repeated measures or longitudinal study [15], comparing the prevalence of the outcomes of interest between the post-lockdown period and pre-COVID biennium (2018-2019). The mean interval between the two medical exams was 32,8 months.

The study cohort included 2,859 workers (mean age 50 years±4.24 SD; 1,391 males, 1,468 females). As shown in Table 1, about 64% of the workers performed BO activities; specifically, men were more prevalent than females (54.0% vs. 46.0%), while most FO workers (60.9%) were women. Compared to BO workers, FO workers had a higher average age (51.1 vs. 49.4 years). About 45% of the subjects in the BO group had college degrees (vs 25.6% of FO). Respectively, 8.1% of BO and 19.2% of FO reported having had a COVID-19 infection at the 2021 health surveillance examination.

The study cohort was classified into two main groups according to the primary activities conducted by the workers during lockdown: employees with FO activities (1,030 workers) who continued to work in person to guarantee the availability of "essential" services by government directives [1], and employees with remote BO activities (1,829 workers), such as online branches and administrative staff, who worked exclusively from home during the emergency phase and continued to work primarily remotely in the months that followed the pandemic.

The study analyzed data from the health surveillance program managed by the Occupational Physicians, looking into the prevalence of (i) conditions associated with office work, such as asthenopic symptoms and musculoskeletal disorders; (ii) signs of psychological distress, such as stress-related symptoms (e.g., asthenia, headaches, anxiety, depression, sleep disturbances, epigastralgia, and stomach pain) and consumption of psychotropic drugs (e.g., antidepressants, anti-anxiety medications and mood stabilizers); (iii) perceived WA; (iv) fitness to work judgment as result of health surveillance examination performed by Occupational Physicians.

Table 1. Characteristics of the employees in BO and FO groups.

	Back-office (N=1,829)	**Front-office (N=1,030)**
Gender		
F	841 (46.0%)	627 (60.9%)
M	988 (54.0%)	403 (39.1%)
Age		
18-30	63 (3.4%)	4 (0.4%)
31-40	212 (11.6%)	72 (7.0%)
41-50	514 (28.1%)	317 (30.8%)
51-60	1003 (54.8%)	615 (59.7%)
>60	37 (2.0%)	22 (2.1%)
Scholarly level		
Middle School	33 (1.8%)	27 (2.6%)
High School	882 (48.2%)	731 (71.0%)
Professional School	21 (1.1%)	4 (0.4%)
Bachelor Degree	48 (2.6%)	10 (1.0%)
Master's Degree	835 (45.7%)	253 (24.6%)
Others	10 (0.5%)	5 (0.5%)
COVID status in 2021		
Infected	149 (8.1%)	187 (18.2%)
Not infected	1680 (91.9%)	843 (81.8%)

Twelve Occupational Physicians were involved in health surveillance. Furthermore, periodic meetings to discuss the most complex cases and the presence of two occupational medical coordinators allowed for homogeneity in the criteria used by occupational physicians for recording symptoms and managing cases.

The Occupational Physicians used a targeted questionnaire [6] to gather data on the prevalence and the degree of asthenopia during medical examination. The questionnaire assesses the frequency of asthenopia symptoms while using video terminals. A score of 0 denotes the lack of abnormalities, a score of 1 to 3 indicates the presence of not significant asthenopia, and a score of more than 4 indicates the presence of asthenopia (mild degree between 4 and 6, moderate degree from 7 to 9, and severe if higher than 9). The Occupational Physicians also conducted targeted anamnesis to gather data on musculoskeletal disorders and stress-related symptoms. To study stress-related symptoms, Occupational Medical Coordinators listed several conditions that are most frequently reported by employees in Literature, including mental asthenia, headaches, anxiety, depression, sleep disturbances, epigastralgia, and stomach pain [9]. These symptoms were investigated during the health surveillance examinations.

The Work Ability Index (WAI) questionnaire assessed perceived work ability [16]. The WAI is composed of seven items that correspond to one or more questions: (i) current ability to work with the best in life (work ability score), (ii) ability to work with job requirements, (iii) number of current illnesses diagnosed by a physician, (iv) estimated work loss because of illness, (v) absence from work in the previous year, (vi) self-prognosis of work ability in 2 years, and (vii). mental resources. The index is calculated by the sum of the points on each item, ranging from 7 to 49 points. Work ability is then classified as poor (7 to 27 points), moderate (28 to 36 points), good (37 to 43 points), or excellent (44 to 49 points).

The data was gathered through health surveillance medical examinations, anonymously extracted from the medical records, and then analyzed in compliance with the most recent privacy protection laws.

2.1. Statistical Analysis

The analysis was performed on 2,859 records, including information about employee demographics, job characteristics, and the study outcomes. All the variables were recorded on a categorical scale and reported using counts and percentages. Longitudinal regression models [17] were used to evaluate changes in outcome prevalences between pre-COVID and post-lockdown periods for BO and FO. To this end, logistic regression models were fitted, with time (pre-COVID or post-lockdown) and occupational category (BO or FO) as covariates and log links. The models were fitted using the Generalized Estimating Equations (GEE) method to account for the longitudinal design [18].

The hypothesis of parallelism was first assessed; in case the null hypothesis was not rejected, tests on time and group effects were performed [17]. It is worth noting that since the time variable can assume only two distinct values, the hypothesis of parallelism is equivalent to the hypothesis of having the same change in the prevalence of outcome within BO and FO groups.

Results were reported using estimated prevalence ratios (post-lockdown vs. pre-COVID) with respective 95% Confidence Intervals. Estimates of prevalence ratios adjusted for gender, age, scholarly, time between pre-COVID and post-lockdown evaluation, and infection status in 2021 were reported to account for potential confounding effects.

Finally, the *"mosaic matrix"* technique [19] was used to evaluate the association between the pre-COVID outcomes—except for the WAI score, which was recorded only in a subset of the cohort. All the analyses were performed using the software R release 4.2.3 [20] with the package geepack [21] added.

3. Results

Figure 1 displays the prevalences of the analyzed occupational outcomes for BO and FO workers during the pre-COVID and post-lockdown periods.

Tables 2 and 3 show the results of longitudinal analysis focused on comparing the prevalences between the above periods.

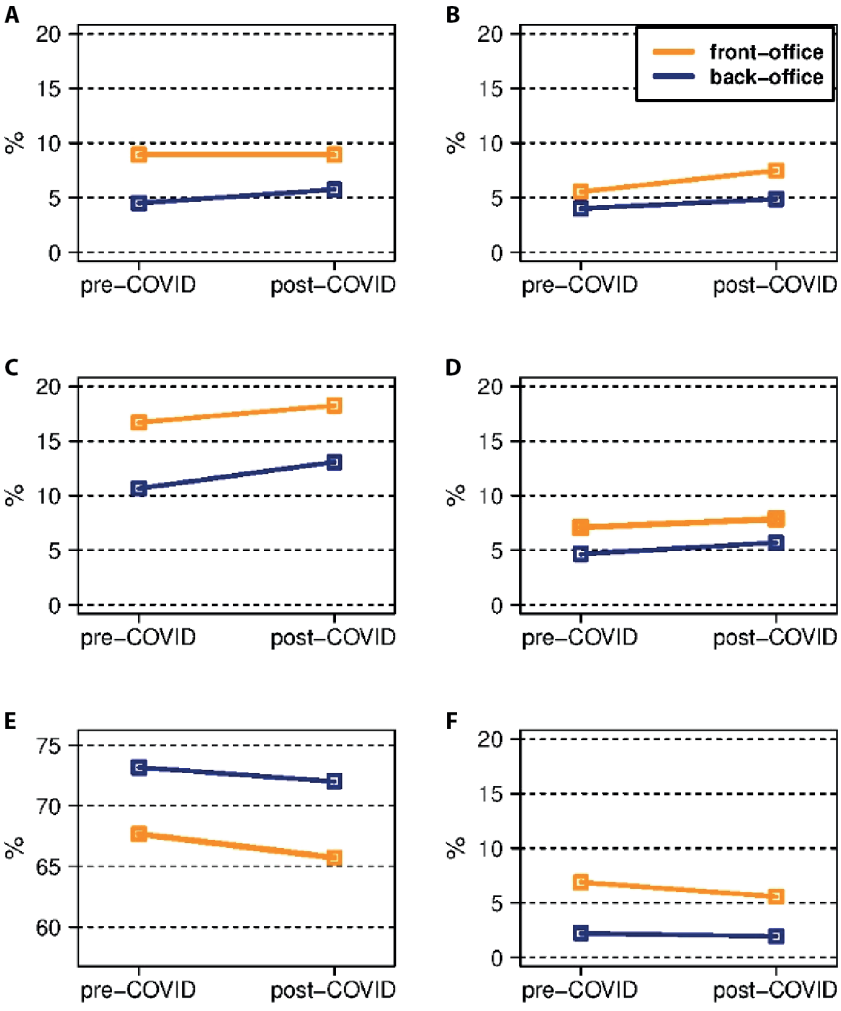

Figure 1. Prevalence of occupational outcomes at pre-COVID and post-lockdown evaluations for front and back office workers.

Regarding ocular-visual system disorders, non-negligible asthenopia (score>3) was reported by 4.5% of BO workers and 8.9% of FO workers during the pre-COVID period. During post-lockdown, the prevalence increased by 28% in the BO group (according to a prevalence ratio equal to 1.28), while it remained unchanged in the FO group (prevalence ratio: 1.00). Evidence was found of a non-null difference between the above prevalence ratios (p=0.0046; Table 3), suggesting a more significant increase of asthenopia in the BO group.

Musculoskeletal disorders were reported by 10.7% of BO workers and 16.7% of FO workers during pre-COVID-19 evaluation. An increase in these symptoms during the post-lockdown period was observed in both BO and FO workers (23% and 9%, respectively). Lumbar (40% of FOs and 48% of BOs) and cervical spine (40% of FOs and 33% of BOs) were the affected segments. The two groups exhibited a difference in prevalence ratios (1.23 and 1.09 for BOs and FOs, respectively), with a more significant increase in musculoskeletal symptoms in BOs post-lockdown (p=0.0305, Table 3).

The figure shows the prevalences of the outcomes considered in this work, represented by colored squares. The segments connect the prevalences, thus

Table 2. Estimated prevalence ratios for assessing outcomes changes for pre-COVID and post-COVID period in back-office and front-office employees.

OUTCOME	Occupational group	Time	Prevalence		Unadjusted prevalence ratio	Adjusted[+] prevalence ratio
			Observed	Estimate, 95% CI.	Estimate, 95% CI.	Estimate, 95% CI.
Asthenopy	back-office	pre-COVID	4.5%	4.5% (3.6%, 5.5%)	1.28 (1.12, 1.47)	1.28 (1.12, 1.46)
	front-office	post-COVID	5.7%	5.7% (4.8%, 6.9%)	1.00 (0.90, 1.11)	1.00 (0.90, 1.11)
		pre-COVID	8.9%	8.9% (7.3%, 10.9%)		
		post-COVID	8.9%	8.9% (7.3%, 10.9%)		
Musculoskeletal symptoms	back-office	pre-COVID	10.7%	10.7% (9.3%, 12.2%)	1.23 (1.14, 1.32)	1.22 (1.14, 1.32)
	front-office	post-COVID	13.1%	13.1% (11.6%, 14.7%)	1.09 (1.02, 1.17)	1.09 (1.02, 1.17)
		pre-COVID	16.7%	16.7% (14.6%, 19.1%)		
		post-COVID	18.3%	18.3% (16.0%, 20.8%)		
Stress-related symptoms	back-office	pre-COVID	4.0%	3.8% (3.1%, 4.8%)	1.28 (1.15, 1.41)	1.28 (1.15, 1.41)
	front-office	post-COVID	4.9%	4.9% (4.0%, 6.0%)	1.28 (1.15, 1.41)	1.28 (1.15, 1.41)
		pre-COVID	5.5%	5.8% (4.6%, 7.3%)		
		post-COVID	7.5%	7.4% (6.0%, 9.2%)		
Psychotropic drugs consumption	back-office	pre-COVID	4.6%	4.8% (4.0%, 5.8%)	1.17 (1.08, 1.27)	1.17 (1.08, 1.27)
	front-office	post-COVID	5.7%	5.6% (4.7%, 6.8%)	1.17 (1.08, 1.27)	1.17 (1.08, 1.27)
		pre-COVID	7.1%	6.8% (5.5%, 8.5%)		
		post-COVID	7.9%	8.0% (6.5%, 9.8%)		
Fitness to work without limitation	back-office	pre-COVID	73.2%	73.3% (71.3%, 75.3%)	0.98 (0.96, 1.00)	0.96 (0.95, 0.98)
	front-office	post-COVID	72.0%	71.9% (69.9%, 73.9%)	0.98 (0.96, 1.00)	0.96 (0.95, 0.98)
		pre-COVID	67.7%	67.4% (64.8%, 70.1%)		
		post-COVID	65.7%	66.1% (63.5%, 68.7%)		
WAI poor-moderate	back-office	pre-COVID	2.2%	2.3% (1.5%, 3.3%)	0.83 (0.67, 1.03)	0.83 (0.67, 1.03)
	front-office	post-COVID	1.9%	1.9% (1.2%, 2.8%)	0.83 (0.67, 1.03)	0.83 (0.67, 1.03)
		pre-COVID	6.9%	6.8% (5.1%, 9.1%)		
		post-COVID	5.6%	5.7% (4.2%, 7.7%)		

Prevalence ratios were defined as post-lockdown prevalence versus pre-COVID prevalence.

[+]*Adjusted for: gender, age, scholarity, infection state and time between pre-COVID and post lockdown evaluation.*

Table 3. Comparison of prevalence ratios of outcomes between groups (parallelism hypothesis) and outcome prevalences between times and between groups.

Outcome	Null hypothesis	χ^2	df	p
Asthenopy	Equal variation of prevalence between groups	8.05	1	0.0046
Musculoskeletal symptoms	Equal variation of prevalence between groups	4.68	1	0.0305
Stress-related symptoms	Equal variation of prevalence between groups	0.94	1	0.3312
	No difference in prevalence between periods	22.28	1	<0.0001
	No difference in prevalence between groups	7.58	1	0.0059
Psychotropic drugs consumption	Equal variation of prevalence between groups	1.36	1	0.2428
	No difference in prevalence between periods	13.70	1	0.0002
	No difference in prevalence between groups	6.10	1	0.0135
Fitness to work without limitation	Equal variation of prevalence between groups	0.30	1	0.5867
	No difference in prevalence between periods	3.36	1	0.0668
	No difference in prevalence between groups	13.06	1	0.0003
WAI poor-moderate	Equal variation of prevalence between groups	0.10	1	0.7500
	No difference in prevalence between periods	2.97	1	0.0850
	No difference in prevalence between groups	21.48	1	<0.0001

df = degrees of freedom

highlighting the differences between pre-COVID and post-lockdown periods. Outcomes: A) asthenopia; B) stress symptoms; C) musculoskeletal symptoms; D) consumption of psychotropic drugs; E) fitness to work; F) WAI low/moderate. Orange: front office; blue: back office.

Four point zero percent of BO workers and 5.5% of FO workers reported experiencing stress-related symptoms. During post-lockdown evaluation, the prevalence of these symptoms increased by 28% for both FO and BO workers (p<0.0001, Table 3). Additionally, there was evidence of a non-null difference in the prevalence of stress-related disorders between the two job groups in each period, with a greater prevalence of these symptoms in FOs both during the pre-COVID and post-lockdown period (p=0.0059).

Psychotropic drug consumption was reported by 4.6% of BO and 7.1% of FO, with an increase of 17% in both groups during post-lockdown evaluation. The comparison between the pre-COVID and post-lockdown periods showed evidence of a non-null difference in both groups (p=0.0002). Both in the pre-COVID and post-lockdown periods, the consumption of these drugs was more significant in the FO group compared to the BO group (p=0.0135).

Fitness to work judgment without limitations was expressed by Occupational Physicians for 73.2% of BOs and 67.7% of FOs during pre-COVID examinations, with no change in prevalence in both groups. Longitudinal analysis showed a greater prevalence of fitness to work judgment without limitations in BOs compared to FOs (p=0.0003) in both periods.

WAI questionnaire results were available for more than half of the workers (57.7% of the total) involved in the study (1650 employees out of 2859; 820 M – 830 F, mean age 50.3±2.8 SD, min-max range 20-64 years). This workers' cohort did not exhibit any notable dissimilarities in characteristics with the total study's cohort.

At the pre-COVID evaluation, most of the cohort (57%) scored "excellent," and more than a third of them (39%) scored "good". Four point four percent of employees received an insufficient rating (scoring "moderate" in 3.2% of cases and "poor" in 11 cases). A moderate/poor WAI score was registered by 2.2% of BO workers and 6.9% of FO workers. During post-lockdown evaluation, both groups showed improvements in the perceived WAI, and the prevalence of moderate/poor scores decreased by 17% in each group (according to a prevalence ratio of 0.83), even though this last finding was not evident (p=0.0850). Longitudinal analysis showed,

both in pre-COVID and post-lockdown evaluation, a greater prevalence of moderate/poor scores in FOs when compared to BOs (p<0.0001).

For each outcome, the adjusted estimates of prevalence ratios in Table 2 were very close to the unadjusted ones, suggesting a negligible impact of the confounding variables on the latter ones.

Finally, Figure 2 shows the results of the "mosaic matrix" technique, used to evaluate the relationships between the analyzed outcomes during the pre-COVID examination. A slight association was highlighted between fitness to work judgment and the other outcomes. Among those, the strongest association was found with asthenopia (Cramer V=0.17).

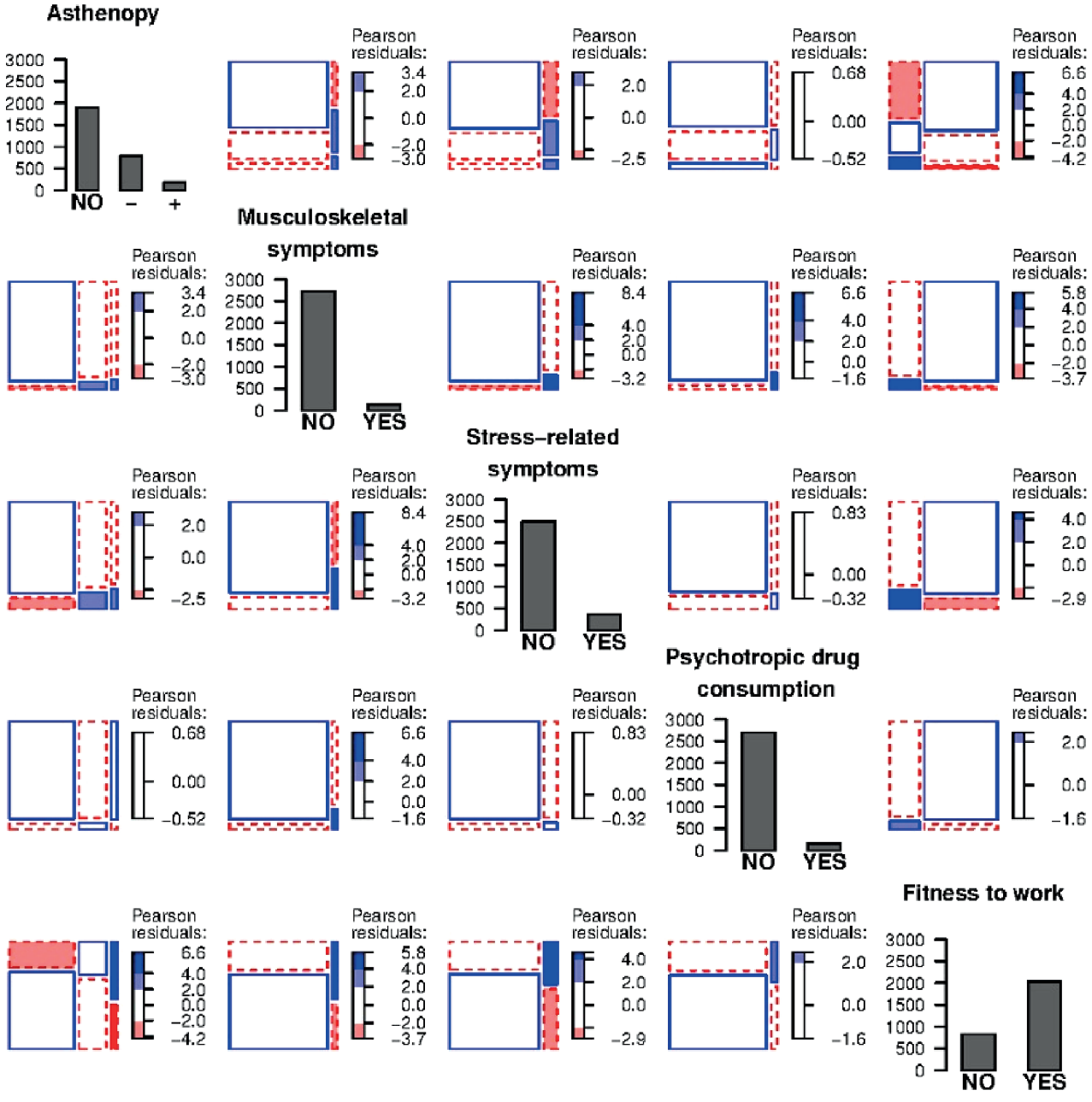

Figure 2. Associations between the examined occupational outcomes at the pre-COVID time in the study population.

In this case, the proportion of subjects with non-negligible asthenopia was higher among employees evaluated as "not fully fit to work" (fitness to work judgment with limitation) than employees with fitness to work judgment without constraints. Additionally, there was a slight positive association (Cramer V=0.17) between musculoskeletal and stress-related symptoms: workers who experience stress-related symptoms may also have musculoskeletal symptoms, and vice-versa. Lastly, we found a slight positive correlation between the use of psychotropic drugs and the occurrence of stress symptoms (V=0.13) but not with musculoskeletal symptoms (V=0.02). As a result, individuals using psychotropic medications may experience symptoms of stress and vice-versa.

Diagonal panels: bar plots showing the total counts of employees within each modality of the outcomes. Asthenopy was labeled as NO (absent), - (negligible), and + (light or moderate or severe); Fitness to work was labeled as NO (not fitting or fitting with limitations) and YES (fitness without limitations. Non-diagonal panels: mosaic plots showing the association between each outcome. A rectangle is drawn for each combination of outcome modalities within each mosaic plot. Color shading reflects the values of the Pearson residuals from the chi-square statistic; therefore, colored rectangles denote specific combinations of modalities with a higher or a lower frequency (blue and red color) compared to the expected frequencies under the assumption of independence. In conclusion, the greater the number of colored rectangles found within the graph and the intensity of the color, the greater the association between the variables considered.

4. Discussion

Our study aimed to assess the potential effects of the COVID-19 pandemic on work-related symptoms and perceived work ability (WA) of a large workforce in the banking industry. This working reality is important because, in the context of the COVID-19 emergency, the Italian government classified it as one of the "essential services" [1, 2]. As a result, these activities were kept on even during the lockdown, being instead subject to significant organizational changes. These measures were implemented to ensure that the activity could be carried out in person safely and to reduce the risk of spreading infection.

Specifically, the study examined the prevalence of occupational outcomes traditionally linked to video terminal activity, such as asthenopia and musculoskeletal disorders, in the selected population after the COVID-19 lockdown (post-lockdown). Additionally, we investigated the occurrence of stress-related symptoms and the use of psychotropic drugs in the study population. Lastly, an evaluation of the WAI questionnaire results, which the workers filled in during the occupational medicine examination, was carried out. Data from the post-lockdown period were compared to pre-COVID data from the same cohort to determine whether there had been any notable changes.

Regarding ocular-visual system disorders, our study highlighted asthenopia (mild, moderate, or severe) in 4.5% of BO and 8.9% FO, with a 28% rise in these symptoms in BOs during post-lockdown evaluation. Despite rising during the COVID-19 pandemic, the prevalence of these disorders was still lower than the primary published data on the topic. In a population of 191 video terminal operators, Taino et al. found a prevalence of non-negligible asthenopia greater than 30% [22]. Das et al. found that, out of 319 office workers, 89,4% had asthenopic symptoms, with more than 8 out of 10 subjects reporting the co-presence of at least one visual and musculoskeletal symptom. Prolonged working hours and an incorrect distance between the operator's position and the screen were major contributors to asthenopic symptoms [23].

Regarding the traditional ergonomic risk associated with office work, a cross-sectional study conducted on video terminal operators between 2017 and 2020 found that 37.9% of the population had musculoskeletal disorders, with cervical/lumbar spine and shoulders being the most commonly affected [24]. In our study, musculoskeletal disorders were reported by 10.7% of BO workers and 16.7% of FO workers. Even though a 22% and 9% increase in these symptoms' prevalence was found in the BO and FO groups during the post-lockdown period, their prevalence remains lower than that found in

Literature. The fact that musculoskeletal disorders had a more significant increase in the BO working population compared to the FO group could be attributed to the possibility that, in some cases, BOs did not use ergonomic workstations at home. Our study showed that the cervical and lumbar spines were the main areas of involvement, as reported in the literature [24].

Stress-related symptoms were experienced by less than 6% of our workers' cohort, with a 28% increase after the lockdown. This growth trend is consistent with data from the literature. According to a survey of 670 workers from various industries, including manual labor, healthcare, education, and other areas, stress-related symptoms increased during the COVID-19 pandemic. These symptoms were specifically linked to increased workload and, for over half of the participants, to a fear of getting infected at work [25]. Additionally, an Italian National Institute of Health survey [26] among over 55,000 interviews conducted between 2018 and 2020 revealed a rise in the prevalence of depressive symptoms among Italian adults (19-69 years old) during the two-month lockdown of March–April 2020 (7.1% vs. 6.1% in 2018-19), which was followed by a decrease (4.4%) in the two months following the end of pandemic restrictions (May-June 2020). Several factors may have contributed to the onset of these symptoms, including fear of infection in situations where the continuation of in-person work activity was necessary [11], as well as organizational changes related to the implementation of remote work activity with numerous subsequent forceful requests for workplace adaptations, with a significant impact on people's quality of life and general well-being. In all of the pandemic's phases, Orfei et al. showed how the overwhelming requests for employees to adjust to an unprecedented work-from-home mode and family routine had been a significant source of stress [27].

Regarding the use of psychotropic drugs, the Eurispes (Italian Institute of Research) survey conducted in 2021 found that the percentage of Italians consuming these drugs was 19%, a 20% increase from the pre-lockdown period [28]. The data collected in our study showed that, in the post-lockdown period, both job groups consumed fewer psychotropic drugs than the general population (5.6% for BO workers and 8% for FO workers), despite a slight increase when compared to the pre-COVID period.

Regarding the perceived work ability (WA), the overwhelming majority (>90%) of the cohort under investigation in our study reported good or excellent WAI scores before the COVID-19 pandemic, indicating a high level of occupational well-being among the study cohort. Additionally, there were no notable changes in scores during the post-lockdown period in our study's cohort. Similar data emerged in a study that examined how the COVID-19 pandemic affected the psychosocial characteristics and perceived work ability of 1211 Brazilian workers. Over 75% of employees reported good to excellent work ability at baseline evaluation and during the follow-up conducted in October 2021—more than a year after the COVID pandemic started [29]. Another study highlighted the possibility that work's intrinsic characteristics could significantly impact WA. In the Zgombic et al. study, banking operators (21 men and 75 women) were split into three groups: those with mostly front-office (FO) activities, those with primarily customer-facing activities within the office, and those with mostly back-office (BO) activities. The group of FO workers had lower WAI scores, whereas the operators who did not deal directly with customers had higher WAI scores; this difference between the groups was evident [30]. In agreement with Zgombic et al., our study found an apparent difference in WAI scores between the BO and FO groups both during pre-COVID and post-lockdown evaluation time. Furthermore, we found no notable changes in both groups' WAI scores comparing pre-COVID and post-lockdown evaluation data. In a recent study conducted in Finland, Kyrönlahti assessed the working capacity trend of a cohort of Scandinavian university employees after the COVID-19 pandemic's organizational and structural restrictions. This study also showed that, for the majority (75%) of the population, the perceived working capacity remained stable during follow-up, with an improvement affecting up to 17% of the workers and evidence of a worsening WA in only 8% of those interviewed [31].

Our research revealed a slight worsening in all examined occupational health outcomes after the

post-lockdown period. Furthermore, the prevalence of our study's highlighted outcomes was consistently lower than the published data for the same topics.

It should be noted that all of these results could be related to the COVID-19 pandemic itself, as well as to the new work practices that have recently been growing in the tertiary sector and the measures that Companies have taken to support employees during this period of change. Indeed, during the past few years, the tertiary sector has undergone a "natural" and progressive transformation of the workplace that has impacted both the nature of the job itself and how it is organized, with modifications to the standard workday and workspace. Physical ergonomics (related to workstation characteristics and electronic/video terminal devices use) and cognitive ergonomics (that focuses on how well the use of innovative work tools matches the mental capabilities of workers) are affected by these changes [32]. The COVID pandemic has led to a notable acceleration of these changes, linked to the growing use of SW [33] and the mandatory changes to the workspaces and workstations (e.g., working in open spaces and sharing tools with coworkers guaranteeing the absence of risk of contagious, allocating work hours and places according to the kind of the activity being done and putting up barriers and equipment to lower the risk of infection transmission when engaging in public-facing activities).

Due to the nature and characteristics of the research that we conducted, we cannot investigate the causes that may have influenced the results of our study. However, we can speculate about the hypothesis of the involvement of preventive measures that the Financial Institute took to support all employees during this transitional period accelerated by the pandemic. In particular, these include: (i) the formation of a "task force" consisting of physicians that constantly work on COVID-19-related issues; (ii) the design of a psychological help desk to provide knowledgeable, experienced, and free assistance available 24/7; (iii) the distribution of information about adopting ergonomic postures and managing the workstation ergonomically at home; (iv) the distribution of content on meditation, mindfulness, and emotional well-being via the Institutional intranet; (v) an online application available to promote physical activity, as well as information and assistance regarding healthy lifestyle choices, with a focus on the worker's family-work balance. While the purpose of this study was not to assess the efficacy of these measures, it is possible to hypothesize that these good practices could have some role in reducing the impact of the COVID-19 pandemic on analyzed worker occupational health outcomes. While more research is required in this regard, it is essential to emphasize the necessity of a more comprehensive integration between the Occupational Physician and all other Occupational Safety personnel's activity, not only in the context of preventing occupational risks but also regarding health promotion, to ensure the highest level of safeguarding for workers' well-being.

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Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki and the ethical principles of research conducted with human participants in Italy. Ethical review and approval were waived for this observational study because data were obtained during a mandatory health surveillance program and participants' data were anonymously processed. Observational studies like this do not need to get ethical approval.

Informed Consent Statement: The data were gathered through health surveillance medical examinations, anonymously extracted from the medical records, and then analyzed in compliance with the most recent privacy protection laws.

Author Contribution Statement: MM and PC conceived and designed the analysis; MM and ML collected the data; MM performed da-ta mining; GM performed the analysis; MM and ML wrote the first version of the paper; MM and GM revised the paper; DR, MC, EB, PC contributed to paper revision; PC supervised all phases of research activity planning. All Authors reviewed the results and approved the final version of the manuscript.

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