



Changes in Sleep Quality of Vector Control Workers across 2020-2022 in Rio de Janeiro, Brazil.



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Introduction

In Brazil, vector control workers (VCW) responsible for vector "control" are subjected to chronic and cumulative exposure due to intensive use of pesticides (neurotoxic and/or carcinogenic), including those banned or restricted in other countries. Among the health effects resulting from exposure to pesticides, cancer, neurodegenerative diseases, and sleep restriction stand out, which in turn lead to the development of symptoms that affect psychomotor performance, memory consolidation, creativity, and decision-making. For this reason, this study aimed to analyze sleep quality across population exposed to agrototoxic substances at work for two periods of time.

Objective

This study aims to evaluate sleep quality, between two periods of time, in endemic workers in state of Rio de Janeiro/Brazil, a population exposed to pesticides at work.

Results

The average score of sleep quality was 6.1 points in the PSQI score during the pandemic period and 8 points in the PSQI score after returning to face-to-face.

51% of the population was classified as having poor sleep quality during the pandemic period (PSQI > 5), which worsened after the period of return to face-to-face contact, affecting 56% of workers.

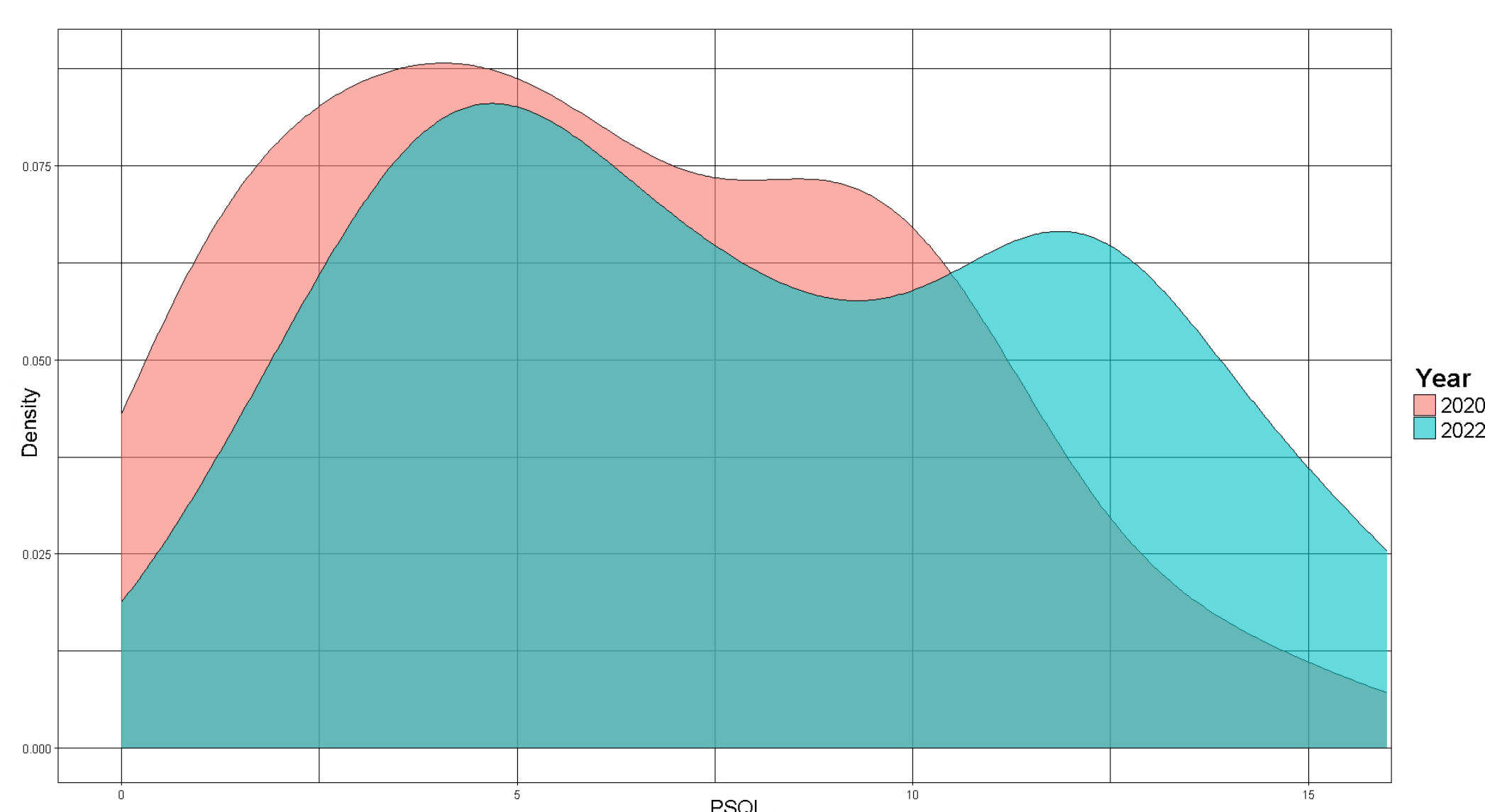


Figure 2. Population Sleep quality (PSQI) in 2020 and 2022.

Differences were observed mainly in sleep efficiency (mean = 93% during the pandemic and 89% after the period) and, consequently, greater use (from 17% to 22%) and frequency of sleeping medications 92.1%).

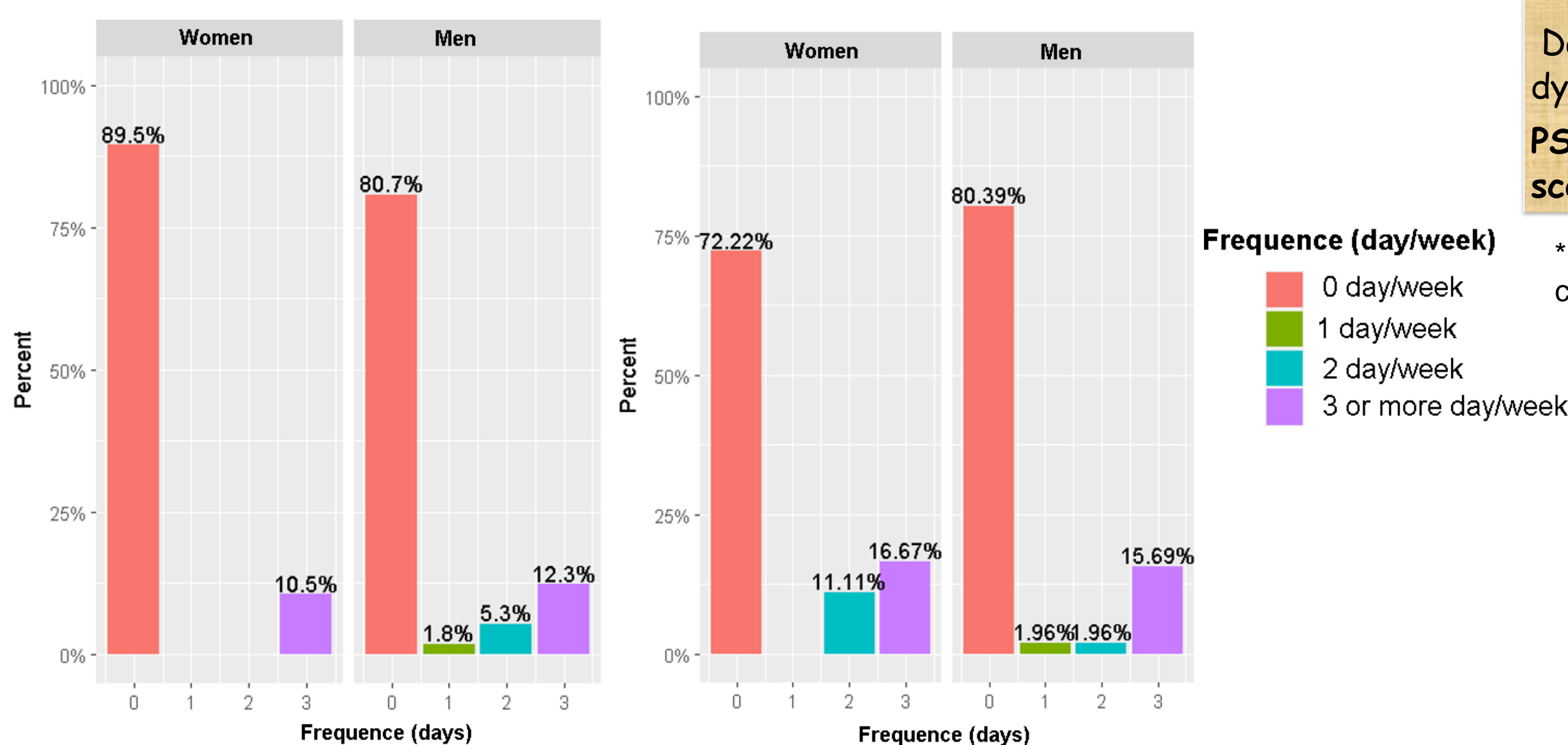


Figure 3. Use and frequency of medications 2020 and 2022.

Materials and Methods

This study is part of a multicenter research with "Vector Control Worker" from Rio de Janeiro, Brazil. The total questionnaire consists of 107 questions and divided into 6 components (Table 1). We evaluate the component "sleep quality". To evaluate sleep quality in 77 VCW exposed to multiple pesticides. Sleep quality was assessed by Pittsburgh Sleep Quality Index (PSQI), and scores were compared over two time periods 2020 and 2022. The PSQI evaluates seven sleep components: subjective quality of sleep, sleep latency, sleep duration, sleep efficiency, sleep disorders, medication use, and daytime dysfunction. The score can range from 0 to 3 for each component, with a maximum total score of 21 points. The higher the score, the worse the sleep quality, and scores above 5 points indicate poor sleep quality.

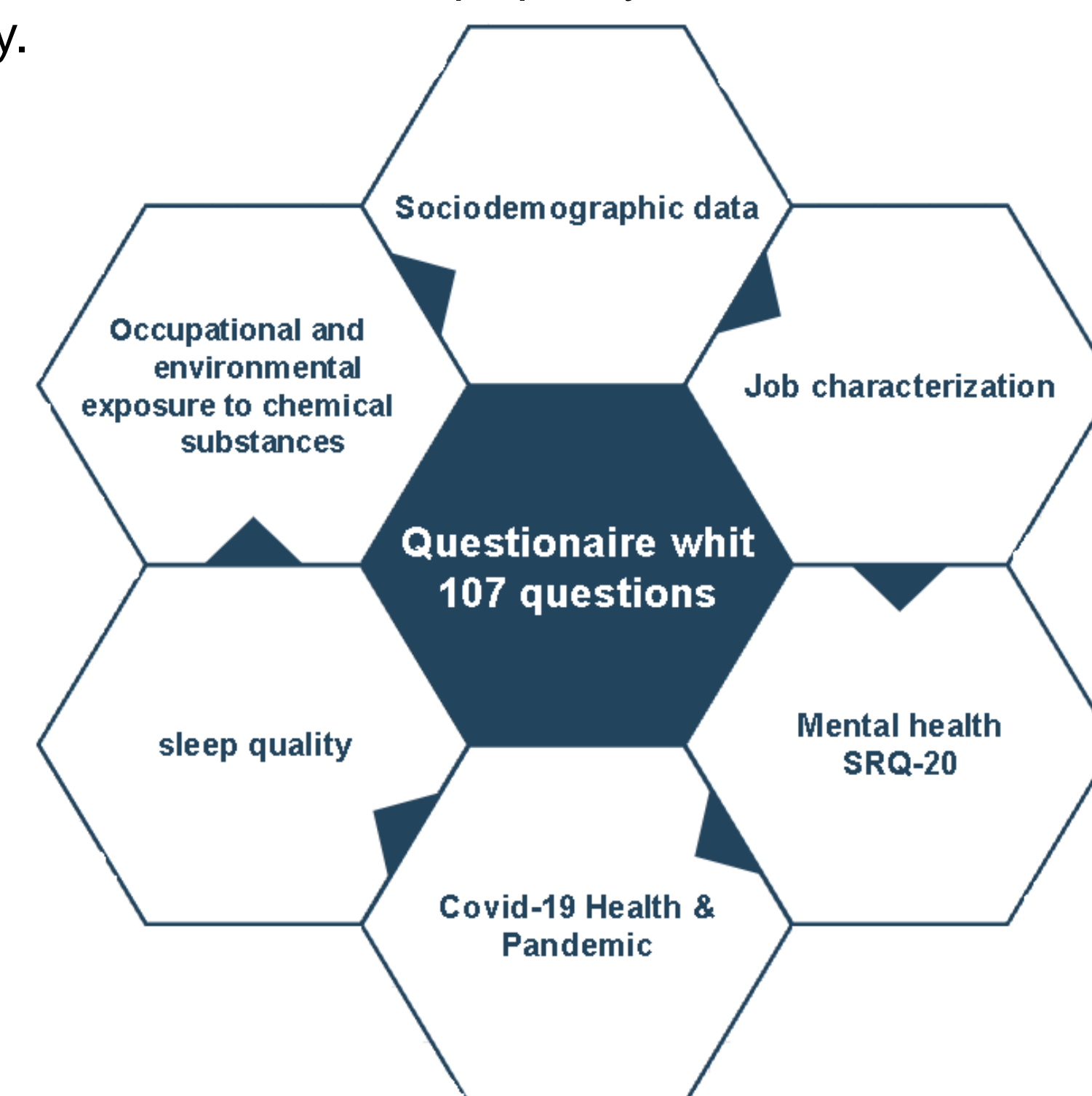


Figure 1. Six dimensions of questionnaire.

Table 1. Pittsburgh Sleep Quality Index (PSQI) component and global scores.

Variable*	Total	2020		Total	2022	
		Women n = 19	Men n = 58		Women n = 19	Men n = 58
Sleep quality	1.49	1.79	1.4	1.52	1.6	1.5
Sleep latency	1.38	1.5	1.35	1.32	1.38	1.3
Sleep duration	1.26	1.15	1.29	1.23	1.44	1.16
Sleep efficiency	0.53 (93%)	0.68	0.48	0.80 (89%)	1.11	0.70
Use of sleep medication	0.44	0.31	0.48	0.57	0.72	0.51
Daytime dysfunction	0.97	1.21	0.89	1.08	1.16	1.05
PSQI global score	6.1	6.5	6	8	9.2	7.5

*Good sleep quality (PSQI ≤5) and poor sleep quality (PSQI >5). Each Component from 0 to 3 and the closer to 3, the worse the sleep quality

Conclusion

The sleep quality of VCW is intertwined with their work process, since after the pandemic, there was a worsening in sleep quality. The work has exposed VCW for decades to agrototoxics used in public health campaigns leading to health problems in this population. It is necessary to monitor the health of these workers periodically and changes in the work process and in the chemical-dependent control model are required to preserve workers health. The unions SintaúdeRJ, Sindsprev/RJ, and Sintrasef collaborated with this work. In the work process and in the chemical-dependent vectorial "combat" are necessary, as a measure to protect the health of these workers and sleep problems that result from cumulative exposure to pesticides.

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For others results of the project, visit: <https://www.cesteh.ensp.fiocruz.br/projeto-guardas-de-endemias-ace>

