

EXPOSURE TO PESTICIDES (AGROTOXICS) OF VECTOR CONTROL WORKERS (VCW) IN THE STATE OF RIO DE JANEIRO, BRAZIL

Ana Paula Neves^{1*}, Priscila Vidal¹, Marcus Vinicius Santos¹, Leandro Carvalho¹, Liliâne Barbosa¹, Antônio Carlos Cardoso¹, Luiz Cláudio Meirelles¹, Márcia Sarpa², Kátia Poça², Luciana Gomes¹, Isabelle Costa-Amaral¹, Liliâne Teixeira¹, Eline Gonçalves¹, Ariane Larentis¹, Ana Cristina Rosa¹

¹Laboratório de Toxicologia, Centro de Estudos da Saúde do Trabalhador e Ecologia Humana (CESTEJ), Escola Nacional de Saúde Pública Sérgio Arouca (ENSP) Fundação Oswaldo Cruz (FIOCRUZ), Rio de Janeiro, RJ, Brasil

²Nacional Cancer Institute José Alencar Gomes da Silva (INCA), Rio de Janeiro, Brasil.
e-mail para contato: anapaulaneves@hotmail.com

1. INTRODUCTION

Brazilian vector control is characterized by intensive use of agrototoxics, including organochlorines, which were used until the 1990s. Bringing a historical line, carbamates, coumarins, organophosphates, pyrethroids, pyridyloxypropyl ether, benzoylureas, neonicotinoids, spinosyns and BTI have already been used. Some substances have already been banned in other countries, but are still used in Brazil and are associated with various harmful effects on health, such as neurotoxicity, endocrine disruption and carcinogenicity. Added to this fact is the lack of PPE for vector control workers, who have been exposed acutely and chronically for decades.

2. OBJECTIVE

The objective of this study is to identify chemical exposure by agrototoxics in the work process of vector control workers (VCW) from Rio de Janeiro, Brazil

3. METHODOLOGY

This study is a cross-sectional study, part of the 'Multicenter integrative project: Study of the impact on health of agents fighting endemic diseases/guards of endemic diseases due to exposure to pesticides in the state of Rio de Janeiro'.

The data collection was carried out remotely through a questionnaire in the Google Forms application, answered by the workers themselves between the years 2020 and 2022, later building a treated database to carry out the statistical analysis. The questionnaire included questions about sociodemographic and economic aspects, frequency of exposure, agrototoxics used, history of symptoms and illnesses, among others.

A total of 620 questionnaires were analyzed. Statistical analyzes were performed using the statistical program Statistical Package for Social Science (SPSS) for Windows version 26.0 (SPSS Inc.)

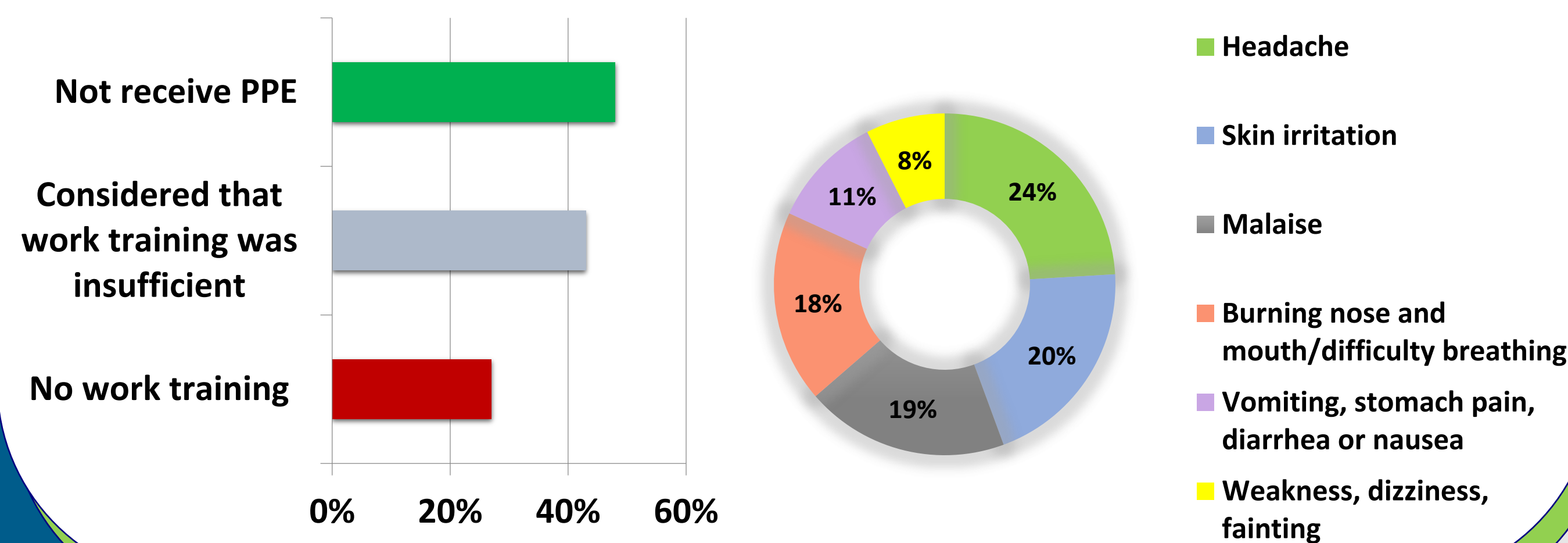
4. RESULTS

Most of VCW are male (68%), living in the metropolitan area of the city of Rio de Janeiro (76%), with high school education (51%) and family income above 5 minimum wages (above R\$5,226.00) (32%). The median age is 54 years (SD=9.6 years), with a minimum age of 19 years and a maximum of 74 years. Around 78% are civil servants linked to the Ministry of Health. The median length of service as a VCW is 32 years (SD=9.8 years).



Around 67% reported that the skin came into contact with agrototoxics during work activity. 71% reported acute intoxication symptoms after contact with agrototoxics.

Figure 1 – Main symptoms reported after intoxication.



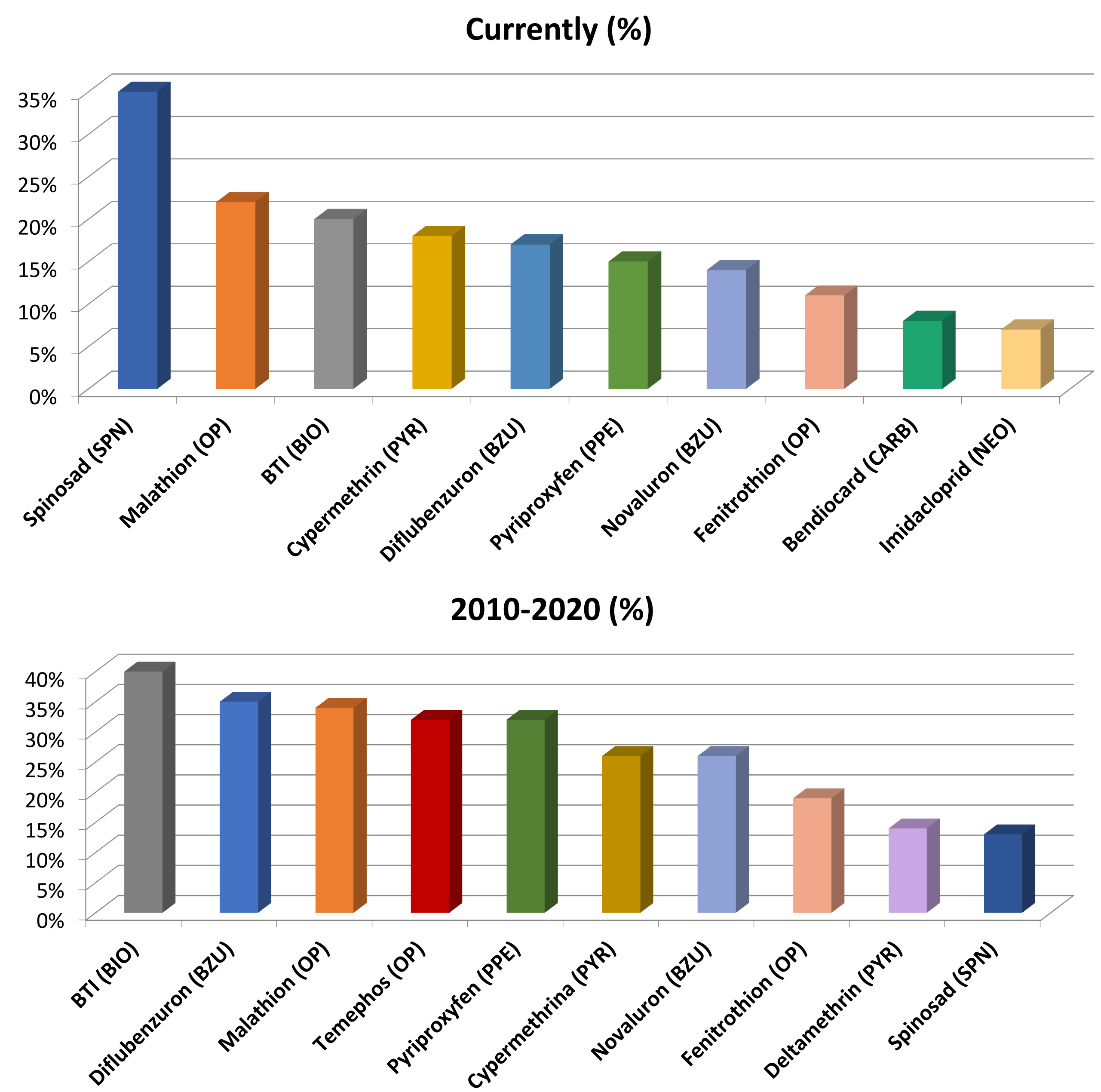
BIBLIOGRAPHIC REFERENCES

LARENTIS, A. et al. Adoecimento e mortes de Agentes de Combate às Endemias no Estado do Rio de Janeiro expostos a agrotóxicos: crítica ao processo de trabalho e construção coletiva de estratégias de enfrentamento. In: PINA, J. A.; COSTA, A. B. DA (EDS.). Saber operário, construção de conhecimento e a luta dos trabalhadores pela saúde. São Paulo: Hucitec Editora, 2021.
VIDAL, P. Estudo dos transtornos mentais comuns em um grupo de agentes de combate às endemias do estado do Rio de Janeiro. Dissertação- ENSP. Fundação Oswaldo Cruz., 2021.

It was observed that 71% works as a 'field agent' and 64% currently work in activities involving agrototoxics application and 72% reported contact with agrototoxics in the past, 34% from 1 to 10 years; 20% from 11 to 20 years; 24% for 21 to 30 years old; and 9% for over 30 years.

The most used PPE were gloves (44%), boots (32%), masks (27%) and overalls (19%).

Figure 2 – Agrototoxics most cited as used currently and between 2010-2020.



SPN-spinosyn; BIO-biological; BZU- benzoylurea; NEO—neonicotinoid; PYR- pyrethroid; OP- organophosphate; CARB-carbamate; PPE- pyridyloxypropyl ether.

About 75% self-reported having diagnosed diseases.

Table 1 – Most self-reported diseases and average age of VCW

Disease	N	%	Age (median)	Minimum	Maximum
Cardiovascular and hypertension	281	45	56	20	74
Respiratory diseases	120	19	55	20	74
Diabetes	111	18	57	45	72
Depression	89	14	55	20	74
Liver/Kidney diseases	86	14	55	30	74
Hormonal	76	12	55	22	74
Essential tremor	59	10	57	28	74
Immunological	42	7	54	20	74
Cancer	14	2	55	30	69
Musculoskeletal	7	1	54	53	62
Anxiety	4	1	41	33	49

5. CONCLUSION

VCW have been exposed acutely and chronically for decades to various agrototoxics that can cause health hazards including neurological damages and cancer. Changes in the work process and chemical-dependent vector control are required, increasing use of alternative methods and investment in environmental sanitation.