



Research Article

© 2024 Carazas-Bruno et al.
This is an open access article licensed under the Creative Commons
Attribution-NonCommercial 4.0 International License
(<https://creativecommons.org/licenses/by-nc/4.0/>)

Received: 16 December 2023 / Accepted: 20 March 2024 / Published: 5 May 2024

Assessment of Psychosocial Risks in Workers in the Health Sector: Evidence in the Peruvian Population

Ingrid Pamela Carazas-Bruno¹

Sandro Rogelio Martínez-Aronés¹

Dany Yudet Millones-Liza^{1,2*}

Miluska Villar-Guevara³

¹Unidad de Ciencias Empresariales, Escuela de Posgrado,
Universidad Peruana Unión,
Lima, Perú

²Escuela Profesional de Administración,
Facultad de Ciencias Empresariales,
Universidad Peruana Unión,
Lima, Perú

³Escuela Profesional de Administración,
Facultad de Ciencias Empresariales,
Universidad Peruana Unión,
Juliaca, Perú

* Corresponding Author

DOI: <https://doi.org/10.36941/ajis-2024-0088>

Abstract

Health service providers are exposed to serious risks of physical and mental illnesses, thus creating an environment prone to psychosocial risks due to the nature of their work and its implications; it is necessary that they enjoy well-being to guarantee the safety and quality of care they provide to patients; this study aims to describe the prevalence of psychosocial risks in health workers, as well as to identify if sociodemographic factors are associated with this risk; for this purpose, a descriptive, association, quantitative and non-experimental study was applied to an initial sample of 2158 workers. The results show that age, gender, work modality and level of education are associated with psychosocial risks; in this sense, it is recommended to implement policies led by the human resources department in order to create a culture that values and prioritizes the mental and emotional well-being of employees.

Keywords: Psychosocial risks, health at work, stress, prevalence, ISTAS

1. Introduction

Psychosocial risks are among one of the most challenging problems in terms of safety and health at work, generating in some way a strong impact on the well-being of individuals, groups, companies, and organizations (Giménez-Espert et al., 2020; Paternina et al., 2022). These are considered a danger

to mental, physical and social health caused by working conditions, institutional factors and their relationships (Antunes et al., 2023); generating high costs for public health (Renier et al., 2022). Psychosocial risks are also recognized as exposure to the health of workers, the same one that produces negative stress and, in the long term, a series of clinical symptoms such as skin, musculoskeletal, and cardiovascular diseases (Hummel et al., 2023; Walli-Attai et al., 2022), respiratory (Han et al., 2019; MacGinty et al., 2019), immune (Galván-Ramírez et al., 2023; Lucas et al., 2023), gastrointestinal (Spegel et al., 2011; Ziemska et al., 2013), chronicities (Pereira et al., 2022; Song & Son, 2008), mental (Sousa-Uva et al., 2021; Uriarte et al., 2022), among other they are a determining factor that needs to be monitored by companies so that they can ensure the emotional well-being of employees.

The assessment given to the care of the collaborator had its beginnings in Spain, where the labor risk prevention law was promulgated, which stipulates the obligation of companies to prevent certain diseases in their workers. This is how the importance of taking care of the collaborator was a practice that has been spreading in various countries, after its birth in Spain through the European Agency for Safety and Health at Work, reaching Chile, Ecuador, Mexico, Venezuela, United States and later to Peru in 2018, through Law 29783 that contemplates psychosocial risks as part of the policies to promote the culture of prevention of occupational accidents.

One of the advantages of identifying occupational hazards is the prevention of physical illnesses that damage work performance over time; in this sense, occupational health consists of the well-being of the worker that includes the physical, mental, and social aspects (Pushkarev & Matskeplishvili, 2021; Vance et al., 2021); in contrast, psychosocial risks are occupational demands that result in negative reactions that alter emotional stability (Martínez, 2020). In this way, it is affirmed that it is necessary to take actions that control psychosocial risks, which are aimed at ensuring the well-being of the worker and are based on the creation of a quality and more stable labor market (Dahler-Larsen et al., 2020). Now, when referring to the labor market and stable, a protagonist intervenes here, who allows the company in which he works to be economically stability due to the work he does, his contribution is significant for what deserves that the administration take care of these workers at all levels, from senior management to the operational part (Benavides et al., 2018); in this way, the prevention of psychosocial risks could be an indicator to obtain both internal and external positive results, also giving the company the opportunity to generate a high competitive advantage (Guadix et al., 2015).

Health professionals in Peru are people committed to providing well-being, be it mental, physical, or social to all patients to improve their health; however, studies carried out in Peruvian contexts (Aliaga-Zamora et al., 2022; Del Carpio-Toia et al., 2022; Diaz-Nolazco et al., 2019; Rodriguez-Rojas et al., 2021; Spyridou et al., 2016) associate psychosocial risks with low productivity, performance and job satisfaction. This leads to reflect on the arrival of good care practices for workers, a situation that depends on changes in the country's public, economic and technological policies; the well-being of workers is at serious risk, directly affecting their performance (Aliaga-Zamora et al., 2022; Del Carpio-Toia et al., 2022; Rodriguez-Rojas et al., 2021). Within this political change, the state reduces its income by not carrying out activities that lead to the prevention of psychosocial risks, this affirmation is based on the background that shows that the promotion of the integral health of workers contributes significantly to offering a service decent and quality (Aliaga-Zamora et al., 2022; Del Carpio-Toia et al., 2022; Diaz-Nolazco et al., 2019; Rodriguez-Rojas et al., 2021; Spyridou et al., 2016).

In this sense, everything exposed in the previous paragraphs denotes the importance of maintaining good health, reducing the psychosocial risks to promote good work performance, promoting staff development and favoring their mental and physical well-being (Kotova et al., 2021; Renier et al., 2022); in this way, it is important that companies and public institutions can establish mechanisms for monitoring and controlling preventive activities applicable to both the business environment and the public sector. For this purpose, it is necessary to identify the population with the highest prevalence of psychosocial risks in order to be able to give priority of care; under this

context, this study aims to (a) identify the prevalence of psychosocial risks (psychological demands, active work and skill development, social support in the company and quality of leadership, compensations and double presence) in Peruvian health providers, and (b) carry out a diagnosis of sociodemographic factors (age, gender, marital status, level of education and work modality) that are associated with these risks.

To have a broader vision regarding psychosocial risks, some models that characterize it are detailed below.

2. Psychosocial Risk Models

2.1 Demand-Control Model (*Job Demand-Control Model*):

This model designed by Robert Karasek is one of the most studied and with a widely used and recognized theoretical force within the psychosocial contexts of work and other associated factors. On the other hand, this is one of the models that has the greatest scientific evidence to explain its behavior, supporting four psychological pieces of evidence: (1) jobs with a lot of stress, (2) active jobs, (3) jobs low-voltage workstations and (4) passive workstations (Gil-Monte et al., 2016).

2.2 Effort-Reward Imbalance Model:

This model was proposed by Johannes Siegrist, and is at the same time a recent proposal that has aroused the interest of various academics and personalities in the labor field. The model focuses on an emphasis on paid work, on stress that disrupts life itself, and also studies all types of job rewards. It is thought that the strength of this model rests on a perfect combination of biological, psychological and social factors, thus awakening numerous investigations and empirical evidence of these and their associations (physical and mental health, psychiatric disorders, sleep disorders, fatigue and unbalance, among others) (Babamiri et al., 2022; Kuchenbaur & Peter, 2023).

2.3 Organizational Support Model

This model is based on the principle of supportive relationships, and it is believed that it originated from Elton Mayo's proposal with his Theory of Human Relations, where he discovered that the organization is actually a social system that tries to get involved, develop and make a space in the world, finding its important in the work circle. Jules Roethlisberger, for his part, bequeathed to the world a crucial element for the optimization of productivity in the company, discovering that this is due to social factors such as: morale, integration within a work group and effective administration. In addition, this model places great emphasis on leadership, since it is convinced that a healthy environment benefits workers when they grow and achieve their goals (Rasouli et al., 2020).

2.4 Burnout Model

Model dating from the mid-1970s, created in response to an attempt to find out the degree of stress felt by workers. This continues to be a model studied throughout the world, considering psychosocial risks as a problem of a transcultural nature (Marsollier, 2019). This model proposes to study the exhaustion and stress that is generated in work environments, which despite having been born in health environments, suggests being studied in any work context. This has normally been evidenced in circles where there is a fast pace, the workload is intense, non-flexible hours with long working hours and other factors (Singh & Singh, 2018). Therefore, there is sufficient scientific evidence to support that work stress or exhaustion can cause serious health problems and irreparable injuries (Nguyen et al., 2018).

Although various investigations (Aliaga-Zamora et al., 2022; Del Carpio-Toia et al., 2022; Diaz-

Nolazco et al., 2019; Han et al., 2019; MacGinty et al., 2019; Pereira et al., 2022; Rodriguez-Rojas et al., 2021) have been able to identify psychosocial risks in different organizational sectors, it becomes relevant to control these risks in the field of health, since it is precisely those workers who seek to ensure the well-being of other people, however, how to control the psychosocial risks of other people? areas without having an evaluation first?, this question opens the way to carry out a study with the objective of evaluating the psychosocial risks in workers in the health sector, in addition to identifying if sociodemographic data are linked to these risks, this with the purpose of proposing preventive and intervention strategies that are resolved in a better working life (Benavides et al., 2018; Dahler-Larsen et al., 2020; Del Carpio-Toia et al., 2022; Galván-Ramírez et al., 2023; Giménez-Espert et al., 2020; Lucas et al., 2023; Pereira et al., 2022; Sousa-Uva et al., 2021; Uriarte Vega et al., 2022; Vance et al., 2021). And in turn, health promotion becomes a determining element for optimal work in government entities and companies in the sector, in this sense, a protective wall is created between all these health agents to effectively cover well-being of people. Therefore, this study is a necessary scientific contribution because it evidences the behavior of such an important topic that has been generating a lot of expectation and prominence lately; considering that ensuring the well-being of people and collaborators is one of the most diligent tasks of the government, public entities, companies and organizations.

Given the background found and taking into account the importance of understanding the psychosocial risks to which Peruvian workers in the health sector are exposed, the research objective is to evaluate the prevalence of psychosocial risks of these workers in their 05 dimensions: demands psychological, active work and skills development, social support in the company and leadership quality, compensation and double presence, this in order to understand the underlying factors that contribute to risk levels, with the results it is also intended to leave evidence that allows make appropriate decisions to promote the well-being of workers that contributes to the construction of a more resilient health system. Likewise, the second objective is to identify if any of the sociodemographic factors are associated with psychosocial risks.

3. Methods

The objective of this study was to describe the prevalence of psychosocial risks and determine if sociodemographic factors are associated with them. In order to achieve this objective, authorization was obtained from the ethics committee of the Universidad Peruana Unión, after approval, the it also requested the authorization of the human resources area of DIRIS Central Lima - Peru, who authorized the application of the selected instrument. Regarding the instrument, the short version of ISTAS 21 was applied, which is made up of 20 items and 05 dimensions: psychological demands, active work and skills development, social support in the company and leadership quality, compensation and double presence. Regarding the method, a quantitative, association, non-experimental and cross-sectional study was applied (Bernal, 2006); non-experimental because at no time was any type of manipulation of the study variable performed, this is how data was obtained from a situation based on reality without any intervention (Toro & Parra, 2006); and cross-sectional due to its temporality, that is, a single point of time was taken as a reference, without the existence of a long-term follow-up (Arnaus et al., 1990).

Taking into account that this research aims to examine the link between sociodemographic variables such as age, gender, marital status, level of education and work modality. And the dimensions of psychosocial risks such as psychological demands, active work and skill development, social support in the company and quality of leadership, compensations y double presence. An association study was applied under the observational methodology; that is, data were collected from a representative sample, and through statistical analysis, significant associations were identified. It should be noted that prior to compilation, authorization was requested from the Ethics Committee of the Universidad Peruana Unión; after that and with prior informed consent of the participants, they completed the surveys. These were completed voluntarily and anonymously, thus protecting the confidentiality of the participants.

4. Sample and Procedure

The population was made up of all the workers of the health establishments of the public sector, called DIRIS (Directorate of Integrated Health Networks) - Lima Centro, which is made up of 19 districts. For the sample, a non-probabilistic sampling was carried out at the convenience of the researcher, using the following inclusion criteria: Peruvian workers in the health sector, in the modality of named contract and CAS (Administrative Services Contract), in the face-to-face work modality and remote, with a labor relationship of more than 6 months and all those who accepted the informed consent to participate in this study; the exclusion criteria were: international workers, university interns. The questionnaire was available for 03 months, after that period of time, the questionnaire was closed, downloaded from Google Form, coded into an Excel spreadsheet and later the information was transferred to SPSS V29 and Jamovi in order to carry out the treatment statistical.

5. Results

The study population was made up of 2,158 health sector workers, distributed according to the following detail:

Table 1. General information of the study participants

	Frecuency	Percent
Gender		
Men	581	26.9
Women	1577	73.1
Age		
20-30	198	9.2
31-40	672	31.1
41-50	574	26.6
51-60	412	19.1
61-74	302	14
Civil status		
Married	783	36.3
Cohabitant	348	16.1
Divorced	110	5.1
Single	871	40.4
Widower	46	2.1
Degree of instruction		
Secondary	91	4.2
Technical	688	31.9
University	1298	60.1
Others	81	3.8
Work modality		
CAS	790	36.7
Permanent	1093	50.6
Serums	26	1.2
Third	236	10.9
Others	13	0.6
Function		
Administrative	45	2.09
Admission	127	5.89
Support staff	382	17.70
Outpatient clinic	245	11.35

	Frequency	Percent
Nursing	366	16.96
Laboratory	122	5.65
Medicine	235	10.89
Nutrition	54	2.50
Psychology	119	5.51
Nursing technician	154	7.14
Others	309	14.32
Total	2158	100

In order to determine the validity and reliability of the instrument in the study population, it was decided to verify the evidence of internal structure validity through Confirmatory Factor Analysis (CFA). Given the ordinal nature of the items, the Diagonal Weighted Least Squares (DWLS) method designed for the analysis of ordinal items was used. Additionally, the following fit indices were considered: RMSEA < 0.08; SRMR < 0.08; CFI, TLI, NNFI, GFI, AGFI > 0.9 (Schumacker & Lomax, 2016). The initial model did not fit well, so modification indices were examined, revealing covariance between items 1 and 2 of the competence factor. Therefore, the model was re-specified (Figure 1), and satisfactory results were obtained ($\chi^2=2319$; $df = 159$; RMSEA = 0.079, SRMR = 0.079; CFI = 0.932; TLI = 0.919; GFI = 0.974; AGFI = 0.956). For the reliability analysis, ordinal alpha was used for each of the dimensions: psychological demands ($\alpha_{ordinal} = 0.613$), active work and skill development ($\alpha_{ordinal} = 0.621$), social support in the company and quality of leadership ($\alpha_{ordinal} = 0.731$), compensation ($\alpha_{ordinal} = 0.504$), and double presence ($\alpha_{ordinal} = 0.612$). All these results were considered appropriate for the nature of the present study (Aiken, 2003).

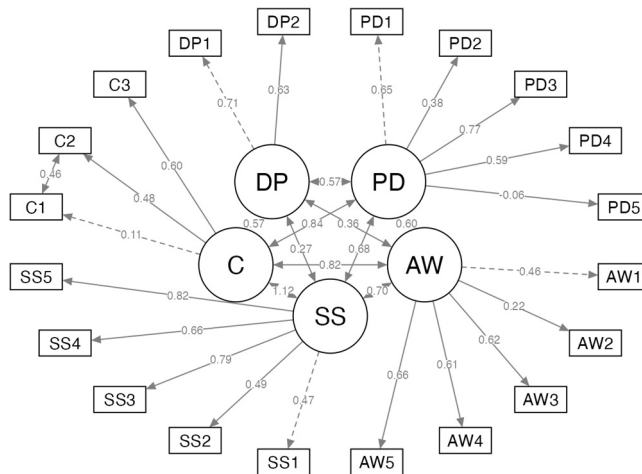


Figure 1. Confirmatory Factor Analysis of ISTAS 21. PD = psychological demands, AW = active work and skill development, SS = social support in the company and quality of leadership, C = compensation, DP = double presence.

After applying the questionnaire to the study population, a score was obtained for each worker according to the dimensions contained in the ISTAS 21 instrument. By totaling this score, the risk level was located for each dimension. Table 1 shows the percentage of workers at each level of risk

(high, medium and low) also indicating the prevalence for each dimension, as well as graph 1 shows that for all dimensions the number of workers who are at risk high does not exceed 50%; therefore, there is no cause for major concern. It is worth mentioning that in the dimension of active work and skills development, the number of workers who are at low risk exceeds 50%.

Table 1. Percentage of prevalence of workers at each level of risk

	Psychological demands	Active work and skill development	Social support in the company and quality of Leadership	Compensations	Double presence
Low risk %	30.54	54.49	21.87	27.02	24.75
Medium risk %	36.10	30.72	35.73	42.59	38.74
High risk %	33.36	14.78	42.40	30.40	36.52

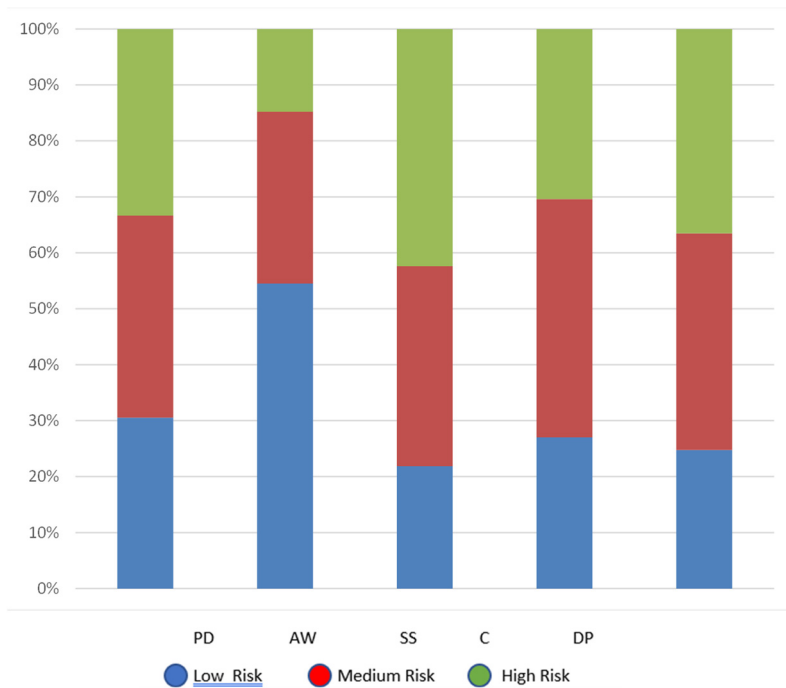


Figure 1. Prevalence of workers at each level of risk

Table 2 shows the levels of psychosocial risks distributed by gender, showing that of the 581 men, the risk level with the highest prevalence is at a medium level, with this same risk level behavior for women, followed through the low level and finally the high level.

Table 2. Level of psychosocial risks by gender

		Gender		Total
		Man	Women	
Psychosocial Risks	Low	165	459	624
	Half	256	786	1042

	High	160	332	492
Total		581	1577	2158

After identifying the level of risks by gender, we also proceeded to identify their association. Using Pearson's Chi-square test, it was found that there is an association between gender and psychosocial risks. In this case the indicators are less than 0.05. This means that risk levels between men and women may vary, as supported by table 3.

Table 3. Association of gender with psychosocial risks

	Value	df	Asymptotic significance (bilateral)
Pearson chi-square	10,845 ^a	2	.004
Likelihood ratio	10,598	2	.005
Linear-by-linear association	4,276	1	.039
N of valid cases	2158		

a. 0 cells (.0%) have expected a count less than 5. The minimum expected count is 132.46.

On the other hand, table 4 shows the detailed results of the distribution of psychosocial risks according to the categories of marital status, where it is denoted that the prevalence levels follow the order of medium, low, and finally high.

Table 4. Level of psychosocial risks by marital status

Psychosocial risks	Civil status					Total
	Single	Married	Divorced	Cohabitant	Widower	
Low	251	220	26	108	19	624
Half	397	392	61	173	19	1042
High	223	171	23	67	8	492
Total	871	783	110	348	46	2158

When analyzing the possible association between marital status and psychosocial risks, it was identified that these are not associated, since it has a significance of less than 0.05; therefore, it is evident that there is no association, as shown in table 5.

Table 5. Association of marital status with psychosocial risks

	Value	df	Asymptotic significance (bilateral)
Pearson chi-square	13,843 ^a	8	.086
Likelihood ratio	13,657	8	.091
Linear-by-linear association	5,115	1	.024
N of valid cases	2158		

a. 0 cells (.0%) have expected a count less than 5. The minimum expected count is 10.49.

Furthermore, taking into account that information was obtained regarding the level of education, the levels of psychosocial risks were measured using that criterion, thus identifying a prevalence of levels of psychosocial risks in the following order: for those who have a technical and higher level of education medium prevalence level, followed by low level and finally high level; for those with a secondary education level and others, the level of risk prevalence is, in the first instance, medium level, followed by high level and finally low level, as shown in table 6.

Table 6. Level of psychosocial risks according to level of education

		Secondary	Universtiy	Technical	Other	Total
Psychosocial Risks	Low	20	376	212	16	624
	Half	39	638	322	43	1042
	High	32	284	154	22	492
Total		91	1298	688	81	2158

In the same way, the analysis of the association between the level of education and psychosocial risks was carried out, there is evidence that demonstrates that there is an association between both, since a p value of less than 0.05 has been obtained, as shown in the table 7.

Table 7. Association of psychosocial risks with level of education

	Value	df	Asymptotic significance (bilateral)
Pearson chi-square	13,495 ^a	6	.036
Likelihood ratio	13,015	6	.043
Linear-by-linear association	.312	1	.577
N of valid cases	2158		

a. 0 cells (.0%) have expected a count less than 5. The minimum expected count is 18.47.

Thus, the psychosocial risks were also measured according to the work modality, finding the average prevalence levels, followed by the low level and finally the high level, this in the case of CAS, named and Serums; However, for workers in the third modality the prevalence ranges from a medium level, followed by a high level and finally a low level, as shown in table 8.

Table 8. Level of psychosocial risks by work modality

		CAS	Permanent	Serums	Third	Others	Total
Psychosocial risks	Low	205	352	9	56	2	624
	Half	390	522	13	108	9	1042
	High	195	219	4	72	2	492
Total		790	1093	26	236	13	2158

However, the association between the work modality and psychosocial risks was also analyzed, finding that these can vary depending on the modality in which each of the collaborators works, since a significance of less than 0.05 was found, as shown in table 9.

Table 9. Association of psychosocial risks with work modality

	Value	df	Asymptotic significance (bilateral)
Pearson chi-square	23,549 ^a	8	.003
Likelihood ratio	23,301	8	.003
Linear-by-linear association	.488	1	.485
N of valid cases	2158		

a. 2 cells (13.3%) have expected a count less than 5. The minimum expected count is 2.96.

Finally, the possible relationship between psychosocial risks and age was also analyzed, finding an important significance of 0.006; this means that age alters the levels of psychosocial risks in health sector workers, as evidenced in table 10.

Table 10. Correlation of psychosocial risks with age

		Psychosocial risks	Age
Psychosocial Risks	Pearson correlation	1	-.059 **
	Sig. (bilateral)		.006
	N	2158	2158
Age	Pearson correlation	-.059 **	1
	Sig. (bilateral)	.006	
	N	2158	2158

** . The correlation is significant at the 0.01 level (two-sided).

6. Discussions

This study aimed to identify the prevalence of psychosocial risks in health providers, as well as to identify if some of the sociodemographic factors are linked to them. To this end, and considering that workers constantly face intense work pressure, it is essential to effectively address the experiences and situations to which they are exposed, even more so knowing that these can have a significant impact on their emotions, giving rise to psychosocial risks that they affect both their personal well-being and their performance at work, with organizations being the main protagonists that generate psychosocial risks (De Wijn & Van, 2022; Wu et al., 2022); this is how this study becomes relevant, since making a diagnosis regarding the prevalence of psychosocial risks is a concern in all organizations; in this regard, Talavera-Velasco et al. (2018) establishes that the constant concern of leaders to obtain high quality standards is causing overwhelming working conditions that, independently of affecting the attitude of the worker, they face adverse situations at work that affect their well-being, which has a negative impact their job performance (Di Tecco et al., 2020; Madrid et al., 2020).

Under the context already explained, this study supports that gender and work modality are associated with psychosocial risks; in this regard, some antecedents (Fernández-Suárez et al., 2023; Rosario & Amézquita, 2014) have been found that working women have a greater tendency to have a greater workload, added to this domestic task and the inequality that prevents them from being able to have autonomy at work and develop their own lives ideas; furthermore, according to records reported by Ortega (2019), psychosocial risk can also vary depending on working conditions; consequently, the gender and work modality disparity has a significant impact on the psychosocial risks of workers. In this way, this study has identified these risks so that the institution in charge can implement the necessary interventions to protect the mental health and quality of life of health workers, these interventions being an ideal alternative to maintain a good balance between work and personal life (Daniels et al., 2021; Nielsen & Simonsen, 2013).

Furthermore, sufficient evidence has been found to affirm that psychosocial risks can vary in prevalence depending on academic preparation and age; to support these results, research has been found that indicates that many of the diseases emerge with the passing of an individual's years and that adults are more susceptible to the accumulation of responsibilities, high demands due to their work history and being exposed to thus presenting psychosocial risks; in this way, it is important to identify the age group that incurs a high level of risks in order to provide the relevant treatment and actions (Shoka & Mkwizu, 2020); in this way, it is necessary to efficiently manage the workload, employment conditions and responsibilities in order to avoid exposing workers to increased risks, since the cost that this represents is high (Truchon et al., 2022).

Finally, this study shows the reality of the prevalence of psychosocial risks of health workers, also identifying the sociodemographic factors that are associated with it; in this way, it is important that health managers can take action on the matter and mitigate these risks in a timely manner. Under this framework, Fattori et al. (2022) indicate that there is a need to investigate health personnel because their working conditions are challenging and they are exposed to high-pressure

situations, intense work hours, and high emotional burden due to exposure to serious illnesses, human suffering, or difficult decisions that have a significant and detrimental impact on individual and organizational health, and this special interest is because organizations depend largely on the mental prosperity of workers, so every leader must ensure that working conditions are conducive to the mental, emotional and social well-being of workers and that enjoying optimal conditions at work allows them to have greater productivity, thus avoiding psychological vulnerabilities and instability of workers that could lead to bad behavior, job dissatisfaction, emotional exhaustion and other negative feelings, the same ones that have emerged with greater emphasis after the arrival of the pandemic (Dalgaard et al., 2023a; Kasireddy et al., 2023; Xue et al., 2022). Even more so knowing that there are precedents that establish that working conditions, professional category and the place where health professionals work can be vulnerable to psychosocial risks (Cañadas et al., 2019).

Finally, this study shows the reality of the prevalence of psychosocial risks of workers in the health area, thus identifying the indicators that should be treated in a timely manner; under this framework. Fattori et al. (2022) indicate that there is a need to investigate health personnel because their working conditions are challenging and they are exposed to high-pressure situations, intense workdays, and a high emotional burden due to exposure to serious illnesses, human suffering, or difficult decisions that have a significant impact detrimental to individual and organizational health, and this special interest is due to the fact that organizations are highly dependent on the mental prosperity of workers, so every leader must ensure that working conditions are conducive to the mental, emotional and social well-being of the workers and it is that enjoying optimal conditions at work allows them to have greater productivity, thus avoiding, psychological vulnerabilities and instability of workers that could lead to misbehavior, job dissatisfaction, emotional exhaustion and other negative feelings (Dalgaard et al., 2023; Xue et al., 2022).

7. Conclusions

This research aims to identify the psychosocial risks faced by workers in the health sector, who are precisely those who play a fundamental role in preserving the well-being of the inhabitants, who for this responsibility sometimes neglect their health due to high labor demand and on workload, from the results it is concluded:

Regarding the psychological demands, it was found that the level of risk with the highest incidence is the one located in the medium risk, represented by 36.10% of the study population. Following this, the results indicate that the level of risk is high with 33.36%; this means that the study population, despite facing various stressful situations and difficulties in their work environments, can cope with their complex tasks and psychological overload.

Likewise, it was identified that more than half of the study population (54.49%) has a low risk regarding active work and skill development, this indicator being referred to the autonomy of the worker and their active participation at work, when taking decisions, use your experience and have a greater chance of accessing professional growth opportunities; contrary to this, a high risk level was identified with a lower percentage (14.78%), this means that there is still a lower percentage that faces certain limitations regarding the opportunities for autonomy and professional growth.

In addition, the analysis carried out shows that there is a high psychosocial risk in social support in the company and leadership quality; that is, 42.20% of the participants do not perceive an adequate leadership style in work environments, there is also a serious problem of communication and social support that could contribute to a level of stress that affects job satisfaction. On the other hand, the findings show that there is a medium risk level of 42.59% with respect to compensation, followed by a high level with 30.40% and finally a low level with 27.02%; under these results, it is evident that workers consider that they do not receive sufficient compensation or recognition to compensate for the effort and dedication in the roles they play.

Additionally, when evaluating the dimension of double presence, it has been found that the level of risk with the highest prevalence is the medium level, represented by 38.74%; therefore, this

denotes that worker face great labor demands and simultaneously assume responsibilities in their personal lives, reaching the extreme of losing balance in these two functions. Finally, it was identified that psychosocial risks are associated with gender (chi-square = 0.04), educational level (chi-square = 0.036), work modality (chi-square 0.003) and there is also a relationship between age and psychosocial risks (p-value = 0.006).

8. Implications and Future Research

It is surprising to find that the personnel dedicated to caring for the health of others have fallen into psychosocial risk problems when it is assumed that they are the ones who have greater resilience due to the experience they have in handling difficult situations, so these results present a practical implication through the implementation of support and self-care programs for health personnel, also creating spaces to access mental health services. Theoretically, the models of psychosocial risks are supported and scientific evidence is also demonstrated that exposes the negative effects of these risks, so that correct management could contribute significantly and positively to an effective health care system.

In this way, it is recommended that health entities can take these results as a point of reference and design certain human resource management strategies through policies that encourage a work environment according to the perspectives of employees in terms of age, work modality, education level and gender, thus intervening accordingly assertive way that improves the labor well-being of these characters dedicated to caring for the health of the population. In that sense, adopting strategic policies could generate important changes, some of these strategies could be: awareness and education programs, work flexibility, psychological support, positive organizational culture, healthy work environment, open communication, balance workload, benefits and rewards, evaluation and continuous improvement, promotion of a healthy lifestyle and spiritual accompaniment. It is expected that the combination of these strategies can contribute significantly to creating a work environment that promotes the mental and emotional well-being of employees.

Among the limitations, it is worth noting that, although this study presents statistically significant results, it is necessary to take into account that the associations found do not imply direct causality, so it is proposed to carry out future studies that identify the causality of the prevalence of psychosocial risks identified in this research.

9. Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

10. Author Contributions

DYM-L, and IPC-B: study design, data interpretation, and manuscript writing. MV-G, SRM-A wrote first draft of manuscript. IPC-B, SRM-A and DYM-L: subject enrollment and follow-up, execution of study, and data analyses. DYM-L and MV-G: statistical analyses. All authors contributed to the article and approved the submitted version

References

- Aliaga-Zamora, G., Delgado-Céspedes, V., Romero-Cueva, Y., Cholán-Valdez, O., & Rondon-Jara, E. (2022). Psychosocial Risk Components and Job Satisfaction in Nurses from a Hospital in Cojamarca, Peru. *Revista Cubana de Enfermería*, 38(3), e4794. <https://orcid.org/0000-0003-1292-5011>
- Antunes, E. D., Bridi, L. R. T., Santos, M., & Fischer, F. M. (2023). Part-time or full-time teleworking? A systematic review of the psychosocial risk factors of telework from home. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1065593>

- Arnaus, J., Anguera, M., & Gómez, J. (1990). *Metodología de la investigación en ciencias del comportamiento*.
- Babamiri, M., Heydari, B., Mortezaipour, A., & Tamadon, T. M. (2022). Investigation of Demand–Control–Support Model and Effort–Reward Imbalance Model as Predictor of Counterproductive Work Behaviors. *Safety and Health at Work*, 13(4), 469–474. <https://doi.org/10.1016/j.shaw.2022.08.005>
- Benavides, F. G., Delclós, J., & Serra, C. (2018). Welfare State and public health: the role of occupational health. *Gaceta Sanitaria*, 32(4), 377–380. <https://doi.org/10.1016/j.gaceta.2017.07.007>
- Bernal, T. C. (2006). *Metodología de la investigación para administración, economía, humanidades y ciencias sociales*.
- Dahler-Larsen, P., Sundby, A., & Boodhoo, A. (2020). Can occupational health and safety management systems address psychosocial risk factors? An empirical study. *Safety Science*, 130(August 2019), 104878. <https://doi.org/10.1016/j.ssci.2020.104878>
- Dalgaard, V. L., Gayed, A., Hansen, A. K. L., Grytnes, R., Nielsen, K., Kirkegaard, T., Uldall, L., Ingerslev, K., Skakon, J., & Jacobsen, C. B. (2023). A study protocol outlining the development and evaluation of a training program for frontline managers on leading well-being and the psychosocial work environment in Danish hospital settings – a cluster randomized waitlist controlled trial. *BMC Public Health*, 23(1), 1–16. <https://doi.org/10.1186/s12889-023-15728-2>
- Daniels, K., Watson, D., Nayani, R., Tregaskis, O., Hogg, M., Etuknwa, A., & Semkina, A. (2021). Implementing practices focused on workplace health and psychological wellbeing: A systematic review. *Social Science and Medicine*, 277(January), 113888. <https://doi.org/10.1016/j.socscimed.2021.113888>
- De Wijn, A., & Van, M. (2022). Reducing Psychosocial Risk Factors and Improving Employee Well-Being in Emergency Departments: A Realist Evaluation. *Frontiers in Psychology*, 12(February). <https://doi.org/10.3389/fpsyg.2021.728390>
- Del Carpio-Toia, A. M., Ramos-Vargas, L. F., Ames-Guerrero, R. J., & Yuli-Posadas, R. Á. (2022). Psychosocial risks in Peruvian health personnel: analysis of psychometric properties of ISTAS 21 questionnaire. *Index de Enfermeria*, 31(2), e13406. <https://orcid.org/0000-0002-3545-3443>
- Di Tecco, C., Nielsen, K., Ghelli, M., Ronchetti, M., Marzocchi, I., Persechino, B., & Iavicoli, S. (2020). Improving working conditions and job satisfaction in healthcare: A study concept design on a participatory organizational level intervention in psychosocial risks management. *International Journal of Environmental Research and Public Health*, 17(10). <https://doi.org/10.3390/ijerph17103677>
- Diaz-Nolazco, M. A., Puestas-Sánchez, P. R., Coronado-Leiner, K., & Díaz-Vélez, C. (2019). Psychosocial risk factors associated with teen educational institutions Chichlayo-Peru. *Revista Del Cuerpo Medico Hospital Nacional Almanzor Aguinaga Asenjo*, 12(2), 139–144. <https://doi.org/10.35434/rcmhnaaa.2019.122.508>
- Fattori, A., Comotti, A., Bordini, L., Dollard, M., & Bonzini, M. (2022). Psychosocial safety climate (PSC) at middle management level in the healthcare sector: A contribution to the Italian validation of psychosocial safety climate-4. *Frontiers in Psychology*, 13(November), 1–13. <https://doi.org/10.3389/fpsyg.2022.1046286>
- Fernández-Suárez, I., López-Goñi, J. J., & Haro, B. (2023). Profiles of women who have suffered occupational accidents in cleaning: perceived health, psychosocial risks, and personality variables. *International Archives of Occupational and Environmental Health*, 96(2), 331–340. <https://doi.org/10.1007/s00420-022-01927-8>
- Galván-Ramírez, M. de la L., Preciado-Serrano, M. de L., & Gallegos-Bonifaz, M. (2023). The Impact of Biosecurity on Biological and Psychosocial Risks for Health Workers of COVID Hospitals in Guadalajara, Jalisco, Mexico. *International Journal of Environmental Research and Public Health*, 20(1). <https://doi.org/10.3390/ijerph20010858>
- Gil-Monte, P. R., López-Vílchez, J., Llorca-Rubio, J. L., & Sánchez Piernas, J. (2016). Prevalence of psychosocial risks in the justice administration staff of the valencian community (Spain). *Liberabit*, 22(1), 1729–4827.
- Giménez-Espert, M. del C., Prado-Gascó, V., & Soto-Rubio, A. (2020). Psychosocial Risks, Work Engagement, and Job Satisfaction of Nurses During COVID-19 Pandemic. *Frontiers in Public Health*, 8. <https://doi.org/10.3389/fpubh.2020.566896>
- Guadix, J., Carrillo-Castrillo, J., Onieva, L., & Lucena, D. (2015). Strategies for psychosocial risk management in manufacturing. *Journal of Business Research*, 68(7), 1475–1480. <https://doi.org/10.1016/j.jbusres.2015.01.037>
- Han, Y. Y., Forno, E., Canino, G., & Celedón, J. C. (2019). Psychosocial risk factors and asthma among adults in Puerto Rico. *Journal of Asthma*, 56(6), 653–661. <https://doi.org/10.1080/02770903.2018.1474366>
- Hummel, B., Harskamp, R. E., Bolijn, R., Moll van Charante, E. P., Galenkamp, H., Mommersteeg, P. M. C., & van Valkengoed, I. G. M. (2023). Psychosocial factors may serve as additional eligibility criteria for cardiovascular risk screening in women and men in a multi-ethnic population: The HELIUS study. *Preventive Medicine*, 172, 107515. <https://doi.org/10.1016/j.ypmed.2023.107515>

- Kasireddy, T. R., Yukselen, Z., Muthyala, A., Bansal, K., Dasari, M., Arun Kumar, P., Anugu, V. R., Majmundar, V., Nakhla, M., Sharma, G., Nasir, K., Warraich, H. J., Ganatra, S., & Dani, S. S. (2023). Association of Psychosocial Risk Factors and Outcomes in Heart Failure: Does COVID-19 Affect Outcomes? *Current Problems in Cardiology*, 48(10), 101795. <https://doi.org/10.1016/j.cpcardiol.2023.101795>
- Kotova, M. B., Rozanov, V. B., Aleksandrov, A. A., & Drapkina, O. M. (2021). Association of psychosocial stress with the social environment, lifestyle and risk factors for cardiovascular diseases in middle-aged male muscovites. *Russian Journal of Cardiology*, 26(5), 94–102. <https://doi.org/10.15829/1560-4071-2021-4335>
- Kuchenbaur, M., & Peter, R. (2023). Quality of leadership and self-rated health: the moderating role of 'Effort-Reward Imbalance': a longitudinal perspective. *International Archives of Occupational and Environmental Health*, 96(3), 473–482. <https://doi.org/10.1007/s00420-022-01941-w>
- Lucas, D., Coadic, N., & Jégaden, D. (2023). Assessment of mental health and psychosocial factors in French merchant officer cadets. *International Maritime Health*, 74(1), 62–69. <https://doi.org/10.5603/IMH.2023.0007>
- MacGinty, R., Lesosky, M., Barnett, W., Nduru, P. M., Vanker, A., Stein, D. J., & Zar, H. J. (2019). Maternal psychosocial risk factors and lower respiratory tract infection (LRTI) during infancy in a South African birth cohort. *PLoS ONE*, 14(12). <https://doi.org/10.1371/journal.pone.0226144>
- Madrid, H., Vasquez, C., & Patterson, M. (2020). Measurement of the Psychosocial Work Environment in Spanish: Validation of the Psychosocial Factors Questionnaire 75 (PSF-Q75) to Capture Demands and Resources at Different Levels of Analysis. *Frontiers in Psychology*, 11(December), 1–14. <https://doi.org/10.3389/fpsyg.2020.580196>
- Marsollier, R. G. (2019). An analysis on burnout-engagement model in public employees. *Psicogente*, 22(41), 1–18. <https://doi.org/10.17081/psico.22.41.3311>
- Martínez, L. (2020). Psychosocial risks and occupational stress in times of COVID-19: instruments for their assessment. *Revista de Comunicación y Salud*, 10(2), 301–321. [https://doi.org/10.35669/rcys.2020.10\(2\).301-321](https://doi.org/10.35669/rcys.2020.10(2).301-321)
- Nguyen, H. T. T., Kitaoka, K., Sukigara, M., & Thai, A. L. (2018). Burnout Study of Clinical Nurses in Vietnam: Development of Job Burnout Model Based on Leiter and Maslach's Theory. *Asian Nursing Research*, 12(1), 42–49. <https://doi.org/10.1016/j.anr.2018.01.003>
- Nielsen, K., & Simonsen, J. (2013). Organizational interventions: A research-based framework for the evaluation of both process and effects. *Work&stress*, 27(3). <https://doi.org/https://doi.org/10.1080/02678373.2013.812358>
- Ortega, J. (2019). Una cuestión de entrega: Desigualdades de género y factores psicocíclica en el trabajo de enfermería. *Sociedade e Cultura*, 22(1), 48–65. <https://doi.org/10.5216/sec.v22i1.57893>
- Paternina, I. L. P., Pérez, M. L. M., Villadiego, L. K. H., & Mendoza, M. A. (2022). Perspectives and assessment of psychosocial risk in latin America: A systemic review of the literature. *Gaceta Medica de Caracas*, 130, S674–S683. <https://doi.org/10.47307/GMC.2022.130.s3.20>
- Pereira, A., Brito, E., Souto, I., & Alves, B. (2022). Healthcare Services and Formal Caregiver's Psychosocial Risk Factors: An Observational Study. *International Journal of Environmental Research and Public Health*, 19(9). <https://doi.org/10.3390/ijerph19095009>
- Pushkarev, G. S., & Matskeplishvili, S. T. (2021). Psychosocial risk factors in cardiac practice. *Patologiya Krovoobrashcheniya i Kardiokhirurgiya*, 25(4), 30–40. <https://doi.org/10.21688/1681-3472-2021-4-30-40>
- Rasouli, N., Heidari, A., Naderi, F., & Marashian, F. S. (2020). Investigating the Mediating Role of Perceived Organizational Support in the Relationship Between Sense of Coherence, Professional Ethics, and Job Performance of Nurses. *Journal of Client-Centered Nursing Care*, 31–42. <https://doi.org/10.32598/jccnc.6.1.324.1>
- Renier, F., Storti, B. C., & Sticca, M. (2022). Psychosocial Risk Factors in the Work of Managers: Systematic Review. *Actualidades En Psicología*, 36(133), 101–114. <https://doi.org/10.15517/ap.v35i131.48518>
- Rodríguez-Rojas, R. R., Escobar-Galindo, C. M., Veliz-Terry, P. M., & Jara-Espinoza, R. M. (2021). Psychosocial Risk Factors and Musculoskeletal Discomfort Among Tellers at a Banking Company in Lima, Peru. *Archivos de Prevención de Riesgos Laborales*, 24(2), 30–45. <https://doi.org/10.12961/aprl.2021.24.02.04>
- Rosario, R., & Amézquita, T. (2014). Prevalencia de trastornos músculo-esqueléticos en el personal de esterilización en tres hospitales públicos. *Medicina y Seguridad*.
- Shoka, N., & Mkwizu, K. (2020). Demographic factors and travel motivation among leisure tourists in Tanzania. *International Hospitality Review*, 34(1), 81–103. <https://doi.org/10.1108/ihr-01-2020-0002>
- Singh, V. L., & Singh, M. (2018). A burnout model of job crafting: Multiple mediator effects on job performance. *IIMB Management Review*, 30(4), 305–315. <https://doi.org/10.1016/j.iimb.2018.05.001>
- Song, E. K., & Son, Y. J. (2008). The Analysis of Type D Personality Research as a Psychosocial Risk Factor in Cardiovascular Disease for Elders with a Chronic Disease 서 론 심혈관질환의 심리사회적 위험요인으로서의 D 유형 성격에 관한 논문 분석. *Journal of Korean Academy of Nursing*, 38(1), 19–28. <https://doi.org/10.4040/j.kan.2008.38.1.19>

- Sousa-Uva, M., Sousa-Uva, A., & Serranheira, F. (2021). Prevalence of Covid-19 in health professionals and occupational psychosocial risks. *Revista Brasileira de Medicina Do Trabalho*, 19(1), 73–81. <https://doi.org/10.47626/1679-4435-2021-625>
- Spegel, H., Meyer, N., Mollenkopf, C., & Nowak, D. (2011). Psychosocial aspects and body pain: Results from an employee survey in the frame of the MAF-project “integrated health management in companies: Employee survey about working conditions as management tool.” *Gesundheitswesen*, 73(12), 823–828. <https://doi.org/10.1055/s-0030-1262869>
- Spyridou, A., Schauer, M., & Ruf-Leuschner, M. (2016). Prenatal screening for psychosocial risks in a high risk-population in Peru using the KINDEX interview. *BMC Pregnancy and Childbirth*, 16(1). <https://doi.org/10.1186/s12884-016-0799-x>
- Talavera-Velasco, B., Luceño-Moreno, L., Martín-García, J., & García-Albuerne, Y. (2018). Psychosocial risk factors, burnout and hardy personality as variables associated with mental health in police officers. *Frontiers in Psychology*, 9(SEP). <https://doi.org/10.3389/fpsyg.2018.01478>
- Toro, I., & Parra, D. (2006). *Metodología de la investigación: Método y conocimiento* (1º edición).
- Truchon, M., Gilbert-Ouimet, M., Zahiriharsini, A., Beaulieu, M., Daigle, G., & Langlois, L. (2022). Occupational Health and Well-being Questionnaire (OHWQ): an instrument to assess psychosocial risk and protective factors in the workplace. *Public Health*, 210, 48–57. <https://doi.org/10.1016/j.puhe.2022.06.008>
- Uriarte, L., Ortiz, R., Álvarez, B., & Sánchez, L. M. (2022). Effect of social support on migrant workers’ mental health: A systematic review. *Revista de La Asociación Espanola de Especialistas En Medicina Del Trabajo*, 31(2), 223–239.
- Vance, S. R., Boyer, C. B., Glidden, D. V., & Sevelius, J. (2021). Mental Health and Psychosocial Risk and Protective Factors among Black and Latinx Transgender Youth Compared with Peers. *JAMA Network Open*, 4(3). <https://doi.org/10.1001/jamanetworkopen.2021.3256>
- Walli-Attai, M., Rosengren, A., Rangarajan, S., Breet, Y., Abdul-Razak, S., Al Sharief, W., Alhabib, K. F., Avezum, A., Chifamba, J., Diaz, R., Gupta, R., Hu, B., Iqbal, R., Ismail, R., Kelishadi, R., Khatib, R., Lang, X., Li, S., Lopez-Jaramillo, P., ... Yusuf, S. (2022). Metabolic, behavioural, and psychosocial risk factors and cardiovascular disease in women compared with men in 21 high-income, middle-income, and low-income countries: an analysis of the PURE study. *The Lancet*, 400(10355), 811–821. www.thelancet.com
- Wu, J., Gong, X., & Liu, Y. (2022). Research on the influence mechanism of employees’ innovation behavior in the context of digital transformation. *Frontiers in Psychology*, 13(December), 1–16. <https://doi.org/10.3389/fpsyg.2022.1090961>
- Xue, J., Wang, H., Chen, M., Ding, X., & Zhu, M. (2022). Signifying the Relationship Between Psychological Factors and Turnover Intension: The Mediating Role of Work-Related Stress and Moderating Role of Job Satisfaction. *Frontiers in Psychology*, 13(May), 1–11. <https://doi.org/10.3389/fpsyg.2022.847948>
- Ziemska, B., Klimberg, A., & Marcinkowski, J. T. (2013). Psychosocial factors and health status of employees at the Poznan University of Medical Sciences. *Annals of Agricultural and Environmental Medicine*, 20(3), 539–543.