



**“Effort-reward imbalance, overcommitment and hypertension: a
cross-sectional study among Peruvian labor inspectors”**

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Effort-reward imbalance, overcommitment and hypertension: a cross-sectional study among Peruvian labor inspectors

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Conflicts of interest

None.

2. Resumen

Antecedentes

Los inspectores del trabajo supervisan la promoción y la protección de la salud en el lugar de trabajo. Sin embargo, su ambiente psicosocial de trabajo y su asociación con la hipertensión no se ha analizado. Por ello, nuestro objetivo fue investigar la asociación entre el desequilibrio esfuerzo-recompensa (DER), el sobre compromiso (SC) y la hipertensión en los inspectores de trabajo peruanos.

Métodos

Se utilizó un diseño transversal y se investigaron 171 inspectores del trabajo (tasa de respuesta del 78%). El alto riesgo de estrés relacionado con el trabajo y el alto SC fueron definidos utilizando el tercil superior de la escala de DER y SC respectivamente. La presión arterial se midió una vez de acuerdo con las recomendaciones de la Asociación Americana del Corazón. La hipertensión se definió como ≥ 140 mm Hg / ≥ 90 mm Hg. Los factores sociodemográficos y de comportamiento se recogieron mediante cuestionarios anónimos auto administrados. Se tomaron medidas antropométricas utilizando dispositivos validados. Se analizó la asociación potencial entre DER, SC e hipertensión mediante regresión logística.

Resultados

El DER se asoció con fumadores ($p = 0,07$) y circunferencia de cintura elevada ($p = 0,04$). El SC más alto se asoció con la edad ($0,08$). El 78% de los participantes reportaron estrés laboral (DER > 1). La prevalencia de hipertensión fue del 27%. Después de ajustar los factores potenciales de confusión, ni DER (OR 1,45; 0,62-3,38) ni SC (OR 1,11; 0,49-2,52) se asociaron con hipertensión. Género (mujeres: OR 0,30; 0,14-0,68) y el aumento de la edad (40-49 años: OR 4,19; 1,58-11,12), (50+: OR 3,85; 1,28-11,59) fueron predictores significativos de la hipertensión.

Conclusiones

Las condiciones psicosociales de trabajo evaluadas en los inspectores de trabajo peruanos con el cuestionario de DER no estaban relacionadas con la hipertensión.

Palabras clave:

Desequilibrio esfuerzo-recompensa, sobre-compromiso, estrés laboral, hipertensión, presión arterial, riesgo de enfermedad cardiovascular, inspectores

3. Abstract

Background

Labor inspectors monitor promotion and protection of health at the workplace. Nevertheless, their psychosocial working environment and its association with hypertension has not been analyzed. We therefore aimed to investigate the association between effort-reward imbalance (ERI), overcommitment (OC) and hypertension in Peruvian labor inspectors.

Methods

Employing a cross-sectional design, 171 labor inspectors were investigated (response rate 78%). High risk of work-related stress and high OC were defined using the upper tertile of ERI and OC scale respectively. Blood pressure was measured once according to the recommendations of the American Heart Association. Hypertension was defined as ≥ 140 mm Hg / ≥ 90 mm Hg. Socio- demographic and behavior risk factors were collected via self-administered anonymous questionnaires. Anthropometric measurements were taken using validated devices. The potential association between ERI, OC and hypertension were analyzed using logistic regression.

Results

ERI was associated with smokers ($p=0.07$) and elevated waist circumference ($p=0.04$). Higher OC was associated with age (0.08). 78% of the participants reported work-related stress ($ERI > 1$). The prevalence of hypertension was 27%. After adjusting for potential confounders neither ERI (OR 1.45; 0.62-3.38) nor OC (OR 1.11; 0.49-2.52) were associated with hypertension. Gender (women: OR 0.30; 0.14-0.68) and increasing age (40-49 yrs: OR 4.19; 1.58-11.12); (50+: OR 3.85; 1.28-11.59) were significant predictors of hypertension.

Conclusions

Psychosocial working conditions assessed in Peruvian labor inspectors with ERI questionnaire were not related to hypertension.

Keywords:

Effort-reward imbalance, overcommitment; work-related stress, hypertension, blood pressure, cardiovascular disease risk, Inspectors

4. Introduction

Decent work is also safe work¹ thus, the promotion and protection of health and wellbeing in the workplace has become a great concern regarding the negative effects of work-related stress in workers.² Moreover, in many cases these effects are associated with occupational deaths, injuries and diseases,³ such hypertension,⁴ which is the mayor risk factor for cardiovascular disease further, a major cause of morbidity and mortality worldwide.⁵ In 2016, cardiovascular disease was estimated to cause 22% of total deaths in Peru.⁶

The effort-reward imbalance (ERI) model has obtained evidence that a stressful psychosocial work environment in a long term represents a greater risk to health⁷ and in particular to cardiovascular disease.⁸ Effort and reward are extrinsic factors and also represent work obligations and benefits (e.g. money, esteem, and job promotion) respectably.⁹ Overcommitment (OC) is an intrinsic factor. Overcommitted workers tend to exaggerate their respond to an ERI consequently are at increased risk of emotional distress which can lead to adverse health outcomes in comparison with less overcommitted employees.¹⁰

Around the world 145 countries have a system of labor inspection. Some studies^{11, 12} have found an improvement in occupational health conditions in workers of enterprises that were audited by labor inspectors. In Peru labor inspection is a government activity. The National Superintendence of Labor Inspection is the competent regulatory authority of occupational safety and health (OSH) inspections and enforcement of OSH regulations in the workplace. In contrast their labor inspectors are exposed to a wide variety of psychosocial stressors.¹³ Moreover, their psychosocial work environment¹⁴ and its health influence has not been investigated, particularly in work-related stress. These problems have a number of major adverse socio-economic consequences resulting in extended absences from work with a negative effect on families' income and the productivity of the inspection.¹³

The aim of this study was to investigate the association between effort-reward imbalance (ERI), overcommitment (OC) and hypertension in Peruvian labor inspectors. Previous epidemiological studies of these workers were not found. Consequently, this investigation is beneficial to improving health literacy.¹⁵

5. Material and methods

Study population and settings

A cross-sectional study was conducted from October 2015 to February 2016 in a population of Peruvian labor inspectors of the National Superintendence of Labor Inspection. A random sample of 220 from the list of the whole (394) Peruvian labor inspectors was chosen. They were selected from the labor inspectors working in Lima. Coordination meetings with representatives of the government entity and the Union of labor inspectors took place in order to achieve a high participation in the study. The response rate was 78% (171), 77 women and 94 men.

The study protocol was approved by the Ethics Committee of the National University of San Marcos in Lima, Peru and the University Hospital Munich (LMU), Germany. The research was implemented in accordance with the Declaration of Helsinki. Labor inspectors received an information letter. Subsequently, all participants gave their informed consent before they begin answering a self-administered anonymous questionnaire during their working time at the office in Lima. As an incentive for participation, participants received a USB 2-in-1 mobile card reader. Participants were free to withdraw consent at any time.

Study instruments and variable definition

We applied the survey “Working Conditions and Health in Latin America” second version, coordinated by the Center for International Health of the Ludwig-Maximilians University of Munich. The survey contained basic sociodemographic information and working conditions,¹⁶ behavioral risk factors of hypertension¹⁷ and a Spanish short version of the ERI questionnaire.¹⁸ After completion questionnaires, physical measurements (blood pressure, height, weight, waist circumference) with validated instruments were done by a nurse and a physician.

Outcome variable

Blood pressure was measured once using a Beurer BM 44 digital arm monitor.¹⁹ The participants had to rest in a sitting position for 5 minutes with their legs uncrossed according to the recommendations of the American Heart Association.²⁰ Additionally, they had to refrain from smoking, consumption of caffeinated beverages or alcohol, and exercise 30 minutes prior to measurement. Hypertension was defined ≥ 140 mm Hg / 90 mm Hg²¹ or if the participant was taking medication for hypertension.

Exposure variable

Effort-reward imbalance was obtained using the short Spanish version of the ERI questionnaire (16 Items) grouped in three factors: effort, reward and overcommitment.¹⁸ A 4-point Likert scale was used for coding: strongly disagree (1), disagree (2), agree (3) and strongly agree (4). Effort and reward were measured by three (ERI 1 – ERI 3) and seven items⁹ (ERI 4 – ERI 10), respectively and overcommitment by six items (OC 1 – OC 6).²² The items ERI5, ERI6, ERI7 and OC3 had been code inversely. The effort–reward ratio was calculated dividing the sum score of 3 items of the effort scale by the sum score of the 7 questions of the reward scale, adjusting for the unequal amount of items 7/3.^{22, 23} Effort-reward ratio over one (ERI > 1) indicated imbalance between efforts and rewards. High risk of work-related stress was defined using the upper tertile of the effort-reward ratio (ERI ≥ 1.51) as cut-off point. Likewise, high overcommitment was defined as the upper tertile of the overcommitment scale (OC ≥ 18) as cut-off point.²⁴

Potential confounders

Gender (male, female), age, years of service, behavioral risk factors of hypertension (consumption of alcohol and tobacco, physical inactivity), overweight, and obesity were considered as potential confounders.²⁵ Age and years of service were stratified in <40, 40-49, 50+ and <7, 7-9, 10-35 respectively. Consumption of alcohol was defined as consumption within the past 12 months. Tobacco was dichotomized into: consumer and non-consumer. Physically activity was dichotomized into: inactive and active. Activity was defined as moderate-intensity for at least 10 minutes continuously.

Height and weight were measured using a seca 206²⁶ mechanical measuring tape and a personal scales seca 803²⁷ respectively. These results were used to calculate the body mass index (BMI), defined as the weight divided by the square of the height. BMI was dichotomized into normal and overweight/obesity (BMI) ≥ 25 kg/m².²⁸ The waist circumference was measured using a seca 201 ergonomic circumference measuring tape.²⁹ It was used to calculated abdominal obesity with a cut-off of men > 90 cm and for women > 80 cm.³⁰

Statistical analysis

A double data entry in Epi Info™ 7.2.0.1 with error check was used in order to ensure the quality of the data. Relative and absolutes frequencies were calculated. To assess the independence between ERI, OC, potential confounders and hypertension we used Chi² test or Fisher's exact test if necessary. Age and gender fulfilled the confounding criteria and were included in the logistic regression crude and adjusted to analyze the

association between ERI and OC exposure and the prevalence of hypertension with corresponding 95% confidence intervals (95% CI). Sensitivity analysis was performed using ≥ 130 mm Hg / 85 mm Hg as cut-off for prehypertension.²¹

6. Results

The study sample consisted of 171 labor inspectors. They were predominantly men (55%) and were between 40 and 49 years old (46%). 78% of the participants reported work-related stress (ERI > 1) Median ERI was 1.33 (range 0.25 - 3.11), for OC 17 (range 6 to 24). ERI was associated with smokers ($p=0.07$) and elevated waist circumference ($p=0.04$). Among those with ERI in the upper tertile the prevalence of smokers was slightly higher (15%) than those with lower ERI scores (6%). In contrast the prevalence of elevated waist circumference was lower (68%) in participants with ERI in the upper tertile than the others (82%). Additionally, higher OC was associated with age (0.08). Elevated OC (upper tertile) was more common in participants 40-49 years of age (45%) than participants over 50 years old (15%) (Table 1).

The overall prevalence of hypertension was 27%. Gender ($p<0.01$) and age ($p<0.05$) were significantly associated with hypertension. Likewise, hypertension was more prevalent ($p = 0.005$) among men (36%), than women (17%) and was more common ($p = 0.007$) in participants over 50 years old (36%) than younger ones. Sensitivity analysis was performed using ≥ 130 mm Hg / 85 mm Hg as cut-off for prehypertension and did not lead to any change in the significance effect for the association between ERI, OC with high blood pressure (Table 2). Psychosocial working conditions were neither related to hypertension nor to prehypertension.

Adjusting for potential confounders did not change the results: neither ERI (OR 1.45; 0.62-3.38) nor OC (OR 1.11; 0.49-2.52) were associated with hypertension. Gender (women: OR 0.30; 0.14-0.68) and increasing age (40-49 yrs: OR 4.19; 1.58-11.12); (50+ yrs: OR 3.85; 1.28-11.59) were significant predictors of hypertension (Table 3). In the same line, in the sensitivity analysis, gender and increasing age were also significant predictors of prehypertension, data not showed.

7. Discussion

To our knowledge this was the first study that explored the association between ERI, OC and hypertension in Peruvian labor inspectors. Effort-reward imbalance was common in this group of workers as was overcommitment. Nevertheless, no statistically significant associations between psychosocial working conditions and hypertension could be shown while the known risk factors for hypertension (male gender, increasing age) could be confirmed.

Labor inspectors reported higher work-related stress (78%) than offshore petroleum workers in Peru. In a previous study of Delgado-Rospigliosi et al.³¹ it was found that the prevalence of ERI in this workers was 30%. Likewise, the upper tertile of overcommitment in labor inspectors was higher (17) than in offshore petroleum workers (15). As part of their daily work labor inspectors take care of workers' rights in formal and informal employers. Thus, labor inspectors are exposed to a wide array of psychosocial work environment that influence negatively on health and cause work-related stress. Consequently, the high score of prevalence of work-related stress in a long term represents a greater risk to mental and physical health (depressive symptoms, musculo-skeletal disorders, hypertension and cardiovascular disease).^{7, 8} However, this study suggested no association between ERI and hypertension. This is in line with the results of the study of Maina et al.³² They found that an increase in blood pressure was not influenced by work stress assessed with ERI questionnaire in Italian call handler operators. Nevertheless, our results are inconsistent with the findings of Siegrist J.,^{8, 10} who obtained evidence that demonstrated that workers exposed to effort-reward imbalance and high overcommitment elevated their risk of coronary heart disease and hypertension. The lack of association between ERI, OC and hypertension in Peruvian labor inspectors might have a potential explanation. For many years, the focus was put on ERI and cardiovascular health, however in the last years Siegrist J. and his co-authors, Li J, Riedel N, Barrech A, Herr RM, Aust B, Mortl K, et al.³³ found association between ERI, OC and another negative effects on workers' health: mental disorders. Thus, ERI and OC could be associated with a range of adverse physical and mental effects at work, not only with cardiovascular diseases.

We found that male inspectors have three times higher possibilities of having hypertension than female adjusted by confounders. Our finding of a higher blood pressure in men than in women is consistent with previous studies.^{25, 34} On the other hand, the prevalence of hypertension in male labor inspectors (36%) and female labor inspectors (17%) was higher than the trends estimates for Peruvian population in a

worldwide study⁴ for age-standardized blood pressure in men (19%) and women (13%) aged 18 years and older in 2015. Consequently, this is another serious health problem in Peruvian labor inspectors. The findings of this study highlight the need to in further studies examining the adverse effect of ERI on health in labor inspectors.

The high participation rate, the use of validated devices for physical measurements (blood pressure, height, weight, waist circumference) and the size of the study sample are strengths of our study. On the other hand, the interpretation of the results is limited because of its cross-sectional design, consequently causality cannot be concluded from these data. Another limitation of the study was that we did not use a comparison group. The ERI questionnaire has not yet been validated in Peru. However it was shown in previous study in health professionals from six Latin-American countries: Chile, Colombia, Mexico, Venezuela, Argentina and Peru³⁵ that the psychometric properties and theoretical structure of the effort and overcommitment scales of the original Spanish version (23 items) were equivalent and satisfactory across the six countries, but the reward scale were acceptable only for four samples of their study. Peru and Argentina had unacceptable fit indices. The sizes of the study samples were small and were obtained in a non-randomized way with heterogeneous characteristics. Juarez-Garcia, et al.³⁴ suggested different understanding of the ERI reward items by Argentinians and Peruvians, because of cultural and linguistic differences and suggested that future research should examine in depth the equivalence of reward scale across Latin-American cultures. For this reason, in our study a potential information bias might be present.

Conclusion

The findings of this study suggest that psychosocial working conditions in Peruvian labor inspectors assessed with ERI questionnaire were not related to hypertension. Age and gender were significant predictors. The results highlight the need to improve the health of this group of workers, who monitor promotion and protection of health of the Peruvian workers in the workplace. Moreover, it is necessary to validate the ERI questionnaire in Peru to examine the effects of adverse psychosocial work factors on employees' health.

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9. Tables

Table 1. Sociodemographic and lifestyle characteristics of Peruvian labor inspectors exposed to effort-reward imbalance (N = 171)

Variable	Effort-reward imbalance ^a					Overcommitment ^b						
	Nmissing	No n	(%)	Yes ^c n	(%)	Pvalue ^d	Nmissing	No n	(%)	Yes ^e n	(%)	Pvalue ^d
Gender						0.27						0.17
Male	5	63	(58)	26	(49)		3	57	(60)	34	(49)	
Age (years)						0.22						0.08
<40	3	35	(32)	19	(36)		2	27	(29)	28	(41)	
40-49	5	46	(43)	27	(51)		5	42	(44)	31	(45)	
50+	2	27	(25)	7	(13)		0	26	(27)	10	(15)	
Years of service						0.83						0.47
< 7	2	32	(30)	15	(28)		1	30	(32)	18	(26)	
7-9	3	40	(37)	18	(34)		3	30	(32)	28	(41)	
10-35	5	36	(33)	20	(38)		3	35	(37)	23	(33)	
Current smokers	0	6	(6)	8	(15)	0.07^f	0	8	(8)	6	(9)	0.95
Alcohol consumption	8	90	(84)	46	(87)	0.66	5	81	(86)	58	(84)	0.71
Physical inactivity	0	10	(10)	2	(4)	0.34 ^f	0	8	(9)	4	(6)	0.76 ^f
Elevated waist circumference^f	9	89	(82)	36	(68)	0.04	6	76	(80)	52	(75)	0.48
Overweight/Obesity^g	8	80	(74)	33	(62)	0.12	7	68	(72)	46	(67)	0.50

^a mean =1.40 (range 0.25 - 3.11) s.d. =0.53; ERI > 1=78% (imbalance between efforts and rewards = work-related stress)

^b mean =16.35 (range 6 - 24) s.d. =4.23

^c cut-off upper tertile ≥1.51 (high risk)

^d Chi² test

^e cut-off upper tertile ≥ 18 (high risk)

^f Fisher's exact test

^g male > 90 cm, female > 80 cm

^h ≥ 25 kg/m²

Table 2. Prevalence of high blood pressure in Peruvian labor inspectors (N=171)

Variable	Category	N _{missing}	Prehypertension ^a			Hypertension ^b		
			n	(%)	Pvalue ^c	n	(%)	Pvalue ^c
Gender	Male	0	52	(55)	0.0005	34	(36)	0.005
	Female		22	(29)		13	(17)	
Age (years)	<40	0	16	(28)	0.014	7	(12)	0.007
	40-49		38	(49)		27	(35)	
	50+		20	(56)		13	(36)	
Years of service	<7	0	19	(39)	0.74	9	(18)	0.17
	7-9		28	(46)		21	(34)	
	10-35		27	(44)		17	(28)	
Tobacco consumption	Current	0	7	(50)	0.60	5	(36)	0.53 ^d
	Non-smoker		67	(43)		42	(27)	
Alcohol consumption	Current	1	59	(41)	0.11	35	(24)	0.02
	Non-drinker		15	(58)		12	(46)	
Physically	Inactive	5	4	(33)	0.44	3	(25)	1.00 ^d
	Active ^d		69	(45)		43	(28)	
Waist circumference^e	High	0	53	(40)	0.06	32	(24)	0.05
	Normal		21	(57)		15	(41)	
Body mass index^f	Overweight	0	52	(43)	0.90	31	(26)	0.40
	Normal		22	(44)		16	(32)	
OC^g	Upper tertile	7	31	(45)	0.62	18	(26)	0.86
	Lower tertiles		39	(41)		26	(27)	
ERI^h	Upper tertile	10	22	(42)	0.81	16	(30)	0.57
	Lower tertiles		47	(44)		28	(26)	

^a ≥130 mm Hg / 85 mm Hg

^b ≥140 mm Hg / 90 mm Hg

^c Chi² test

^d Fisher's exact test

^e moderate-intensity for at least 10 minutes continuously

^f male > 90 cm, female > 80 cm

^g ≥ 25 kg/m²

^h cut-off upper tertile ≥ 18

ⁱ cut-off upper tertile ≥1.51

Table 3: Association between effort-reward imbalance, overcommitment and prevalence of hypertension in Peruvian labor inspectors

Variable	Category	Hypertension	
		OR ^a (CI 95%) crude	OR ^a (CI 95%) adjusted ^b
ERI	Lower tertile	1	1
	Upper tertile ^c	1.24 (0.60-2.56)	1.45 (0.62-3.38)
OC	Lower tertile	1	1
	Upper tertile ^d	0.94 (0.46- 1.89)	1.11 (0.49-2.52)
Gender	Male	1	1
	Female	0.36 (0.17-0.74)	0.30 (0.14-0.68)
Age (years)	<40	1	1
	40-49	3.78 (1.51-9.47)	4.19 (1.58-11.12)
	50+	4.04 (1.42-11.46)	3.85 (1.28-11.59)

^a Odds Ratio

^b Adjusted for confounders

^c cut-off upper tertile ≥ 1.51

^d cut-off upper tertile ≥ 18

10. Relevancia del estudio “Effort-reward imbalance, overcommitment and hypertension: a cross-sectional study among Peruvian labor inspectors” para la SSO en Latinoamérica.

En los últimos años se ha evidenciado una fuerte preocupación por la seguridad y salud en el trabajo en América Latina, por ello se están desarrollando muchos instrumentos normativos y técnicos; pero aún no es suficiente. Un factor importante en la prevención y protección de la salud ocupacional de los trabajadores es la inspección del trabajo, sin embargo, no existen estudios epidemiológicos realizados en Latinoamérica respecto a la salud ocupacional de este colectivo.

Constituye una paradoja que no se cuide la salud de las personas cuyo trabajo consiste justamente en el control y vigilancia del cumplimiento de la legislación que protege la salud ocupacional del resto de trabajadores y sobre todo porque la inspección del trabajo debería dar el ejemplo de cumplimiento. Por ello este estudio acerca del desbalance esfuerzo recompensa, sobre compromiso e hipertensión en inspectores de trabajo peruanos constituye un primer paso para conocer la problemática en salud ocupacional de este grupo de trabajadores, cuyas características son similares en toda América Latina.

Los resultados obtenidos son una alerta no solamente para las autoridades de la entidad gubernamental peruana a cargo de la inspección del trabajo, sino también para el resto de países de Latinoamérica para que no solamente desarrollen programas de prevención y protección, sino que también validen en cada país instrumentos técnicos como el cuestionario desbalance esfuerzo recompensa que si bien ha sido validado en España en el idioma español, cada uno de los países de América Latina usa de manera particular el lenguaje castellano y por ello resulta importante que cada país a la luz de sus usos y costumbres valide dicho instrumento tan usado en Europa y con tan buenos resultados para la medición del estrés en el trabajo y su relación exposición resultado con diversos problemas de salud físico y mental como hipertensión, problemas musculo esqueléticos, depresión, insomnio, entre otros.

11. Anexos

Instrucciones para autores

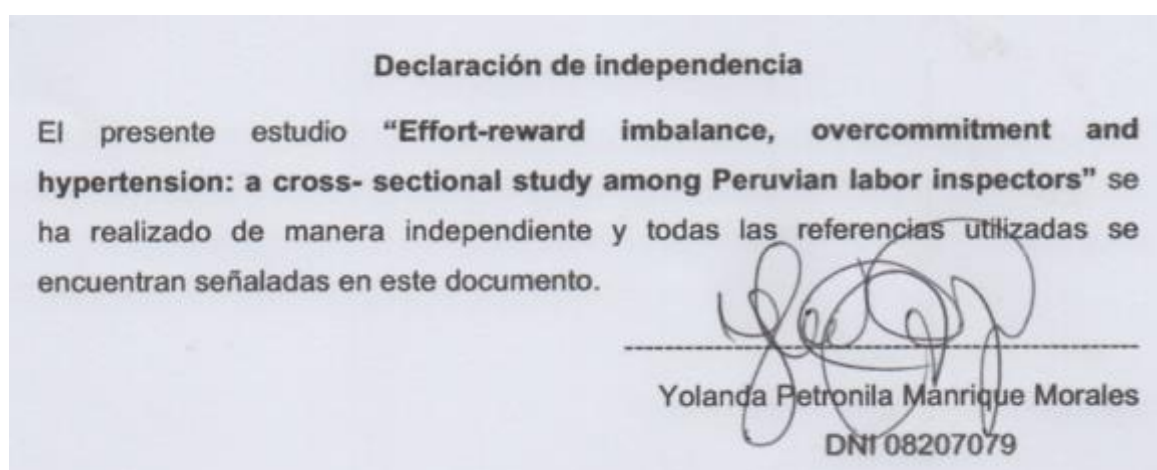
Revista	Gaceta Sanitaria
Aspectos generales	
Tipo de artículo	Original
No de palabras	≤ 3000
No de tablas/gráficas	≤ 6
Idioma	Inglés / Español
Interlineado	1.5
Letra	No indicada, Arial 11*
Numeración	Parte inferior de la página
Guía	STROBE
Material online	Posible
Primera página	
Título	Máximo 15 palabras
Autores	Nombre, apellido(s), sin grados académicos, letra superíndice a la afiliación
Afiliación	Institución de los autores incluyendo la ciudad
Autor de correspondencia	Dirección postal, email
No Autores	≤ 6
Recuento de palabras	Texto principal, resumen
Segunda página	
	Declaraciones de autoría, financiación, agradecimientos y conflictos de intereses
3a página: Resumen (español)	
Forma	Estructurado
Palabras	≤ 250
Palabras claves	5-8 términos "MESH"
4a página: Abstract (inglés)	
Forma	Traducción exacta del resumen al inglés
Palabras	≤ 250
Palabras claves	5-8 términos "MESH" (Key words)
5a-12a página: Texto principal	
Introducción	1-2 páginas* concluyendo con el objetivo del estudio
Métodos	1-3 páginas*, aprobación ética

Resultados	1-2 paginas*, texto preciso y claro, incluyendo estratificación por genero
Discusión	1-2 paginas*, al final implicaciones para la política
Bibliografía	
No referencias	≤ 35
Identificación	Superíndice, numeración consecutiva según orden en el texto. Cuando el artículo sea en inglés, la cita sucederá al signo (por ejemplo: "... radiological parameters. ⁹ Although...").
Estilo internacional	No indicado
Ejemplo (revista)	García AM. A nuestros revisores, con amor. Gac Sanit. 2003; 17:444-5
No Autores a mencionar	≤ 3, >3: cita los primeros 3 seguidos de "et al."
Tablas	
Numeración	Números arábigos, referencia en el texto a cada tabla
Título	Breve, parte superior, sin abreviaturas
Letra	≥ 10
Interlineado	1 o 1,5
No paginas	≤ 1
Lugar	Al final del artículo, cada una en una nueva pagina
Estilo	Sin líneas interiores, ni formatos automáticos (sombreados etc.)
Columnas	Con breve encabezado
Notas explicativas	A pie, llamadas con letras minúsculas en superíndice en orden alfabético
Figuras	
Numeración	Números arábigos, referencia en el texto a cada figura
Título	Breve, al pie de la figura
Formato	Blanco y negro
Notas explicativas	A pie, llamadas con letras minúsculas en superíndice en orden alfabético
Contenido	No deben repetir datos presentados en el texto/las tablas
Cuadro final	
¿Qué se sabe sobre el tema?	≤ 300 caracteres, estado del conocimiento científico sobre el tema.
¿Qué añade el estudio realizado a la literatura?	Frase 1: ≤ 200 caracteres, ¿qué aporta el estudio al conocimiento? Frase 2: ≤ 200 caracteres,

	implicaciones del estudio
* recomendación de la tutora Katja Radon, no dado en el texto	

Aportes individuales

Todos los autores de este estudio han cumplido con los criterios ICMJE y han contribuido en la concepción, diseño del estudio, análisis e interpretación de los datos; la revisión crítica y elaboración final del manuscrito con importantes contribuciones intelectuales; la elaboración final y aprobación de la versión que se publicará. Todos los autores se hacen responsables y garantizan que todos los aspectos que integran el estudio fueron revisados y discutidos entre todos con la finalidad de que sean expuestos con la máxima integridad y precisión.



Esfuerzo	Contribución Individual (%)	Contribuciones de otros: (quién, qué, cuándo)
Concepto	80%	10% Msc Bauleo: diseño y elaboración protocolo inicial 10% Prof. Dr. Radon diseño y elaboración protocolo inicial
Trabajo en campo	100%	
Análisis de los datos	70%	25% ProfDra. Radon: Revisión e interpretación de resultados 5% Msc Bauleo: Revisión e interpretación de resultados
Manuscrito	65%	20% Dra. Radon: Revisión crítica final, aporte contenido intelectual 15% Msc. Bauleo: Revisión crítica final, aporte contenido intelectual

12. Curriculum Vitae

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Coordinación, dirección y supervisión técnica de las actuaciones inspectivas a cargo de los inspectores adscritos a mi grupo de trabajo. Elaboración de informes de inspección referidos a las actividades inspectivas, sus resultados, y propuestas normativas.

Funciones inspectivas de vigilancia y control del cumplimiento de las disposiciones legales relativas a las condiciones de trabajo y a la protección de los trabajadores durante su trabajo.

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Coordinación, dirección y supervisión técnica de las actuaciones inspectivas a cargo de los inspectores adscritos a mi grupo de trabajo. Elaboración de informes de inspección referidos a las actividades inspectivas, sus resultados, y propuestas normativas.

Funciones inspectivas de vigilancia y control del cumplimiento de las disposiciones legales relativas a las condiciones de trabajo y a la protección de los trabajadores durante su trabajo.

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