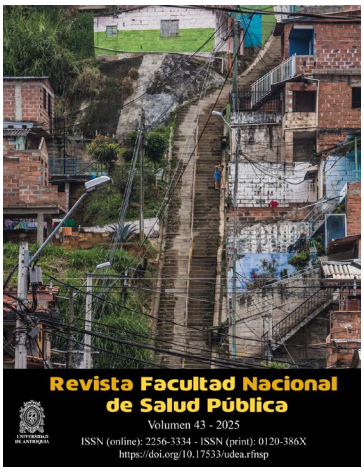

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Author: Juan Fernando Ospina - Photographer
Medellín, 2016

Protective and risk factors for suicidal ideation in public hospital workers in Chile: organizational dimensions and destructive leadership

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Abstract

Objective: To identify protective and risk factors resulting from the relationship between destructive leadership, organizational dimensions, and suicidal ideation in public health workers in Chile.
Methods: A cross-sectional study. A survey was administered to 1,855 public hospital workers from three regions in Chile between January and May 2023. Sampling was probabilistic, stratified by sex and professional category. Using logistic regression models segmented by sex, the association between leadership styles (*laissez-faire*, tyrannical, and constructive), mental health (suicidal ideation), and organizational dimensions workplace bullying, emotional demands, role conflict, work vulnerability, conflict management climate) was analyzed.
Results: 6.42 % of the sample presented suicidal ideation; 32.94% reported *laissez-faire* leadership; 13.42 %, tyrannical leadership; and 85.93%, constructive leadership. Adjusted models showed that men exposed to *laissez-faire* leadership [aOR = 2.52 (95 % CI: 1.34-5.76)] and tyrannical leadership [aOR = 2.80 (95 % CI: 1.33-5.87)] are almost three times more likely to present suicidal ideation than those not exposed. A favorable conflict management climate is a protective factor for suicidal ideation for the total sample of workers [aOR = 0.58 (95 % CI: 0.34-0.98)].
Conclusion: Destructive leadership is a risk factor for suicidal ideation in men. Workplace bullying and emotional demands also act as risk factors for suicidal ideation in men and women, and work vulnerability is a risk factor only in women. A favorable conflict management climate constitutes a protective factor for mental health in organizations and a possible avenue for intervention.

----------*Keywords*: leadership, mental health, suicide, health workers, workplace bullying.

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Factores protectores y de riesgo de ideación suicida en trabajadores de hospitales públicos en Chile: dimensiones organizacionales y liderazgos destructivos

Resumen

Objetivo: Identificar factores protectores y de riesgo en la relación entre liderazgos destructivos, dimensiones organizacionales e ideación suicida en trabajadores de la salud pública en Chile.
Métodos: Estudio de corte. Se aplicó una encuesta a 1855 trabajadores de hospitales públicos de tres regiones en Chile, entre los meses de enero y mayo de 2023. El muestreo fue probabilístico, estratificado por sexo y estamento. Mediante modelos de regresión logística segmentados por sexo, se analizó la asociación entre estilos de liderazgo (*laissez-faire*, tiránico y constructivo), salud mental (ideación suicida) y dimensiones organizacionales (acoso laboral, demandas emocionales, conflicto de rol, vulnerabilidad laboral, clima de gestión de conflictos).
Resultados: El 6,42 % de la muestra presentó ideación suicida; el 32,94 % reportó liderazgo *laissez-faire*; el 13,42 %, liderazgo tiránico, y el 85,93 %, liderazgo constructivo. Los modelos ajustados mostraron que hombres expuestos a liderazgo *laissez-faire* [RDa = 2,52 (IC 95 %: 1,34-5,76)] y a liderazgo tiránico [RDa = 2,80 (IC 95 %: 1,33-5,87)] tienen casi tres veces mayor posibilidad de presentar ideación suicida que los no expuestos. Un favorable clima de gestión de conflictos es un factor protector para la ideación suicida en la muestra total de trabajadores [RDa = 0,58 (IC 95 %: 0,34-0,98)].
Conclusión: Los liderazgos destructivos constituyen un factor de riesgo para la ideación suicida en hombres. El acoso laboral y las demandas emocionales también actúan como factores de riesgo de ideación suicida en hombres y mujeres, y la vulnerabilidad laboral es un factor de riesgo solo en mujeres. El clima favorable de gestión de conflictos constituye un factor protector de la salud mental en las organizaciones y un posible camino de intervención.

----------*Palabras clave:* liderazgo, salud mental, suicidio, trabajadores de la salud, violencia laboral.

Fatores de proteção e risco para ideação suicida em trabalhadores de hospitais públicos no Chile: dimensões organizacionais e liderança destrutiva

Objetivo: Identificar fatores de proteção e risco na relação entre liderança destrutiva, dimensões organizacionais e ideação suicida em profissionais de saúde pública no Chile.
Métodos: Estudo seccional. Foi realizada uma pesquisa entre 1.855 trabalhadores de hospitais públicos em três regiões do Chile entre janeiro e maio de 2023. A amostragem foi probabilística, estratificada por sexo e classe social. Utilizando modelos de regressão logística segmentados por sexo, foi analisada a associação entre estilos de liderança (laissez-faire, tirânico e construtivo), saúde mental (ideação suicida) e dimensões organizacionais (assédio moral no local de trabalho, exigências emocionais, conflito de papéis, vulnerabilidade no trabalho e clima de gerenciamento de conflitos).
Resultados: 6,42 % da amostra apresentou ideação suicida; 32.94 % relataram liderança laissez-faire; 13,42 % liderança tirânica e 85,93 % liderança construtiva. Os modelos ajustados nos mostraram que homens expostos à liderança laissez-faire [RCa = 2,52 (IC 95 %: 1,34-5,76)] e à liderança tirânica [RCa = 2,80 (IC 95 %: 1,33-5,87)] têm quase três vezes mais chances de apresentar ideação suicida do que aqueles não expostos. Um clima favorável à gestão de conflitos é um fator de proteção para ideação suicida para a amostra total de trabalhadores [RCa = 0,58 (IC 95 %: 0,34-0,98)].
Conclusão: Liderança destrutiva é um fator de risco para ideação suicida em homens. Assédio no local de trabalho e exigências emocionais também atuam como fatores de risco para ideação suicida em homens e mulheres, e a vulnerabilidade no trabalho é um fator de risco apenas em mulheres. Um clima favorável à gestão de conflitos é um fator de proteção à saúde mental nas organizações e uma possível via de intervenção.

----------*Palavras-chave:* liderança, saúde mental, suicídio, profissionais de saúde, violência no local de trabalho.

Introduction

The Chilean health system's financing, insurance, and service provision are segmented into public and private health care providers. Public health care congregates more than 80% of the population, including the elderly and those with the highest burden of disease [1, p. 665]. Thus, public health in Chile faces challenges concerning an accelerated demographic transition. Furthermore, the state faces problems in terms of financial, human, and organizational resources. Consequently, healthcare workers face significant demands that translate into health risks, which may also impact the quality of care. Hence, studying health work, its conditions, and organization is relevant.

Healthcare is eminently a service sector occupation. This implies that it is the worker him/herself who generates and delivers the service, in an interactive process with and for others. In this scenario, quality depends not only on technical aspects, but is also strongly permeated by relational aspects [2, p. 184], which usually implies an emotional demand in addition to the physical and cognitive burden. In turn, healthcare workers face complex tasks with high levels of uncertainty and emotional exhaustion [3, p. 152; 4]. Likewise, this is a highly feminized work sector; "women represent 72.6% of those employed; however, wage gaps persist, as well as vertical segregation", which generates significant social inequalities in this labor market [5, p. 187].

The conditions and emotionally draining nature of health care work have historically implied risks for the well-being of health care workers [6]; however, the pandemic exposed and denaturalized the the harmful consequences of work exhaustion on the mental health of workers [7]. Anxiety, depression, and post-traumatic stress disorders have been widely reported in the literature on healthcare work [8, p. 531]. Still, less is known about the worst possible outcome when it comes to mental health: suicide.

"Worldwide, suicidal behavior (ideation, attempt, suicide) has been a major public health problem" [9, p. 565; our translation]. Epidemiological studies have shown that suicide risk is determined by various individual, clinical, and social factors [10, p. 254]. Most studies on suicidal risk factors have focused on identifying clinical antecedents such as major depression or problematic substance use. Those who have engaged in suicidal behavior have also been characterized sociodemographically: they tend to be male, young, with low income, low level of schooling, previous psychiatric diagnoses, or with a stressful life event during the last few months [11]. Although the scientific literature has focused on individual and clinical aspects, the study of social factors related to suicidal behavior has a long history [12]. *Suicidal ideation* refers to "thinking about, considering, or planning suicide" [13, p. 17; our translation].

There is growing evidence of the relationships between pathogenic working conditions and work organization and the effects on workers' mental health [14]. In this regard, Howard et al. [15] have proposed a conceptual framework for understanding the link between work and suicidal behavior. In their model, they identify risk factors associated with increased suicidal ideation, e.g., high job demands, insufficient job control, effort-reward imbalance, inadequate social support, job insecurity, and role conflict [12,16].

Although studies attending to protective factors and suicide in the field of work-related mental health are very scarce, some of them, conducted in Korea and China, have pointed out that a favorable work environment could play an essential role in reducing psychological stresses, acting as a coping mechanism [17–20]. The 2022 review by Howard et al. "showed a predominance of study production in the United States (N = 247), followed by the United Kingdom (N = 41), Australia (N = 40), and Japan (N = 24) [...]" [15, p. 6], evidencing a gap in relation to literature coming from Latin America.

Leadership is a dimension scarcely studied along with suicidal behavior in organizations; however, we know that certain destructive styles have adverse effects on the well-being and mental health of workers, producing psychological distress, emotional exhaustion, among others [21,22]. Research has also shown "that abusive supervision has been a predictor of suicidal ideation" [23, p. 1517; our translation]. *Destructive leadership*, defined as "systematic and repeated behavior by a leader, supervisor or manager that violates the legitimate interest of the organization by undermining or sabotaging the goals, tasks, resources and effectiveness of the organization or the motivation, well-being or job satisfaction of subordinates" [24, p. 208; translation is ours], has taken multiple forms, including abusive supervision, tyrannical leadership and *laissez-faire* leadership [25].

Organizational dimensions refer to aspects of work organization that are part of labor relations and work processes. Some of these dimensions are detrimental and can significantly affect workers' mental health.

Thus, the scarce evidence on the relationship between destructive leadership and suicide, as well as its link with organizational dimensions in the context of health care work in Latin America, such as workplace bullying, emotional demands, role conflict, work vulnerability and conflict management climate, make it necessary to identify protective and risk factors in the relationship among destructive leadership, organizational dimensions and suicidal ideation in public health care workers in Chile.

Methods

This section describes the study design, the type of sample, the data collection procedure, the variables and instruments used, the statistical analysis procedure, and the ethical aspects considered during the research process.

Study design

The study design was empirical. The universe was composed of all workers in high-complexity public hospitals in Chile. A representative sample was drawn from the country's three large metropolitan areas in this universe.

The inclusion criteria for the sample were active health care workers (including professionals, technicians, administrative, and support staff) in high-complexity public hospitals within the selected regions.

The sample was representative, probabilistic, and stratified by sex and occupational status (physician, nurse, other health professionals, technicians, administrative, and auxiliary staff) for the Chilean regions (Metropolitan Region, Valparaíso, and Biobío) where the study was conducted. These regions account for 45.6% of the staff of highly complex public hospitals in the country, comprising 24.1%, 8.7%, and 12.8%, respectively.

Considering an estimated total sampling error of 1.8%, based on a 95% confidence interval, a variance of p = 0.8, and a finite universe based on data available from the Chilean Ministry of Health, a sample of 1855 participants was estimated.

The guidelines provided by the Strengthening the Reporting of Observational Studies in Epidemiology initiative were considered for reporting results [26,27].

Within the study's framework, the main variables and co-variables were defined and operationalized using validated instruments, which are part of the methodological design and data collection procedure. The variables considered—exposure, outcome, and covariates—are described below, together with the instruments used for their measurement and the categorization criteria applied.

Procedures

To collect the information, a face-to-face survey was applied between January and May 2023 to 1855 workers (753 men and 1102 women), between 18 and 72 years of age, from high-complexity public hospitals in three regions of Chile: Valparaíso (n = 402), Metropolitan region (n = 1051) and Biobío (n = 402). The individuals were contacted at their workplaces.

Variables and instruments

- Exposure variable: *destructive leadership,* as measured by the scale developed by Aasland *et al.* [28], based on the conceptual framework of Einarsen et al. [29], and validated in Chile by González-Santa Cruz and Ansoleaga [30]. The instrument comprises three subscales: tyrannical (4 items), *laissez-faire* (7 items), and constructive (6 items) leadership, using a five-point Likert scale, ranging from 0 (never) to 4 (always). The reliability of the respective subscales was: tyrannical, α = 0.73; *laissez-faire*, α = 0.72; and constructive, α = 0.82.
  Mikkelsen and Einarsen's criteria were used to determine exposure to destructive leadership [29, p. 40]. They include those who indicated that their leaders exhibited 2 or more forms of destructive behavior, with a frequency of "quite often," "almost always," or "always."
- Outcome variable *suicidal ideation*: it was measured with the item: "In the last 30 days, have you had thoughts about ending your life?" [31], and with the 4-point Likert format, ranging from 1 (not at all) to 4 (very frequently).
  Those workers who responded positively to this statement, regardless of the frequency of suicidal ideation, were considered "with suicidal ideation".

Organizational co-variables

- *Workplace bullying:* for its measurement we used the self-rating item contained in the *Negative Acts Questionnaire-Revised* [29], validated in Chile by González-Santa Cruz and Ansoleaga [30]. The corresponding question was: "If we define harassment as a situation in which a person perceives that they are continuously subjected to negative behaviors against which they have difficulty defending themself, according to this definition, have you been harassed during the last six months at work? (Spontaneous response: yes or no)" [29].
- *Emotional demands:* The Emotional Demands subscale of the SUSESO/ISTAS21 instrument (Superintendence of Social Security/Barcelona Trade Union Institute of Labor, Environment, and Health) was used [32]. *Emotional demands* were defined as being linked to quantitative, emotional and emotion-hiding psychological demands, which are part of the job and require workers to perform the work requested during a given period, and the ability to understand the situation of other people who are experiencing intense emotions and hiding different basic emotions at work for "professional reasons".
  It contains 4 items on a 5-point Likert scale, ranging from 0 (never) to 4 (always). Its reliability for this sample was α = 0.77.
  To determine high emotional demands, the median was used as the cutoff point. Values greater than the median were identified as high emotional demands.

- *Role conflict* corresponds to the "incompatibility between the expectations of the same role" [33, p. 184; our translation], i.e., those simultaneous or contradictory expectations that interfere with each other and hinder the performance of work tasks [33].
  The three role conflict items of the Bowling et al. scale [34], which presents a Likert format ranging from 1 (strongly disagree) to 7 (strongly agree), were used.
  The reliability for this sample was $\alpha = 0.74$. The median was used as the cutoff point. The variable was dichotomized to establish a role conflict for those scores above the median.
- *Work vulnerability:* associated with the concept of *job insecurity* — a combination of perceived threat, powerlessness, and uncertainty about the future [35] — it was defined as the "fears that influence how workers perceive their ability to interact with employers and supervisors" [36, p. 181; our translation].
  Four items from the Employment Precariousness Scale [37] and three from the employment insecurity subdimension of the SUSESO/ISTAS21 instrument [32] were used.
  Those who reported 3 or more situations of work vulnerability were considered "with work vulnerability". The reliability for this sample was $\alpha = 0.80$.
- *Conflict management climate* corresponded to employees' evaluations of the organization's conflict management procedures and practices, and how fair and predictable leader-employee interactions are perceived to be [38,39].
  This variable was measured with the Rivlin scale [38], adapted by Einarsen et al. [39]. It consists of 4 items in 4-point Likert format, ranging from 1 (strongly disagree) to 4 (strongly agree). The reliability for this sample was $\alpha = 0.78$.
  The median was used as a cut-off point to establish an adequate conflict management climate.

Mental health co-variable

- *Psychotropic use:* regular use of hypnotics, anxiolytics, or antidepressants with 1-year prevalence and dichotomous response [40]. The corresponding question was: "During the last 12 months, have you taken regularly, that is every day or a few times a week, medications to: (a) decrease anxiety or nervousness, such as anxiolytics, (b) help you sleep, such as hypnotics, (c) lift your mood, such as antidepressants? Yes/no dichotomous answer" [40, p. 597; our translation]. Those who reported using hypnotics, anxiolytics, or antidepressants were classified as "With psychotropic use".
- *Work-related social covariates:* age established in brackets (18-35; 36-45; 46-60; > 60); financial income (dichotomized into less than or equal to 600 000 or greater than or equal to 600 001 Chilean pesos —CLP—, equivalent to USD 643); discrimination at work (measured by answering affirmatively to at least one category of the question: "In your job, are people treated unfairly because of: 'social origin, nationality, sexual diversity, indigenous peoples, being young, being elderly, having a disability, being a woman, being a man, other'"); stressful life event (an item asked whether in the last six months the respondent had faced the death of a close family member, a serious accident or was the victim of a violent situation inside or outside the home).

Statistical analysis

Descriptive and inferential statistics were used in the analyses. The prevalence of suicidal ideation in the presence of variables such as leadership styles, work-related social and organizational issues, and mental health was analyzed according to sex, using the chi-square test (χ^2).

Bivariate logistic regression analysis (Odds Ratio —OR—, 95% confidence interval —IC—) was used to estimate the likelihood of suicidal ideation in the presence of covariates by sex.

Finally, using logistic regression, a multivariate analysis of a model adjusted for work-related social variables was carried out: age (under 35 years), income (less than CLP 600 000), discrimination (at least one episode), stressful life event (one event in the last six months), and psychotropic use.

All analyses were stratified by sex. Data were weighted to ensure the study design's representativeness and were conducted with statistical analysis software version 17.0 (StataCorp, College Station, Texas), licensed to the investigators [41].

An exhaustive review of the database was conducted, identifying values inconsistent with the expected response for the financial income variable, so they were recorded as "missing" (11.5%); however, this does not constitute a limitation or report bias for the study because there are no differences in age or sex between those who answered or did not answer this study variable. For this reason, the missing data did not receive any special treatment.

Ethical considerations

This study was approved by the Research Ethics Committee of the Universidad Diego Portales (Act 014-2022), dated May 13, 2022. This committee adheres to the postulates contained in the Declaration of Helsinki of 2013 and complies with Chilean laws 20.120 (Research Law), 19.628 (protection of private life or security of personal data) and Law 20.584 (Law on the rights and duties of patients), in addition to the institutional laws of Universidad Diego Portales.

All participants signed an informed consent form, which outlined the study's objectives, their rights, and the ethical guarantees in place.

Results

The sample (see Table 1) comprised 40.59% men and 59.41% women. Of these, 54.02% were young people between 18 and 35 years of age, 24.04% were between 36 and 45, 19.03% between 46 and 60, and 2.91% were over 60 years of age. Also, 41.94% received less than CLP 600 000 (USD 643θ). Of the sample, 25.44% suffered a stressful life event during the last 6 months. Similarly, the prevalence of total discrimination in the sample was 33.53%, with rates of 35.39% among women and 30.81% among men.

Table 1. Description of the sample (n = 1855)

Work-related social variables n (%)		Men n (%)	Women n (%)	Total	*p*
Sex		753 (40.59)	1102 (59.41)	1855 (100)	
Age	18–35	412 (41.12)	590 (58.88)	1002 (54.02)	0.05
	36–45	176 (39.46)	270 (60.54)	446 (24.04)	
	46–60	134 (37.96)	219 (62.04)	353 (19.03)	
	> 60	31 (57.41)	23 (42.59)	54 (2.91)	
Financial income (less than CLP 600 000)		396 (36.77)	681(63.23)	1077 (41.94)	0.000
Stressful life event		187 (39.62)	285 (60.38)	472 (25.44)	0.618
Discrimination		232 (30.81)	390 (35.39)	622 (33.53)	0.040

CLP: chilean pesos. 1 USD = 933 CLP.

Regarding leadership styles, 32.94 % were exposed to *laissez-faire* leadership behaviors, 13.42 % to tyrannical leadership behaviors, and 85.93% to constructive leadership behaviors.

Regarding organizational dimensions, 15.08 % reported having been victims of workplace bullying in the last six months; 49.11% reported high emotional demands; 43.02 % presented role conflict; 49.81% had high work vulnerability, and only 31.54 % declared the presence of a favorable conflict management climate in their work team. Finally, regarding mental health variables, 28.46 % reported regular use of at least one psychotropic drug (anxiolytic, antidepressant, or hypnotic) and 6.42 % reported suicidal ideation (see Table 2).

Regarding the prevalence of suicidal ideation, those under 35 years of age, with an income less than CLP 600 000, who suffered at least one episode of discrimination at work and a stressful life event during the last 6 months exhibited a higher prevalence of suicidal ideation compared to those who did not acknowledge these traits (see Table 3).

Regarding leadership styles, those who reported that their bosses had *laissez-faire* and tyrannical leadership behaviors had a higher prevalence of suicidal ideation, 9.98 % and 14.46 %, respectively, when compared to those who did not report these leadership behaviors (4.66 % and 5.17 %, respectively). On the other hand, people who reported constructive leadership showed a lower prevalence of suicidal ideation than participants who did not report these behaviors (5.77 versus 10.34 %) (see Table 3).

Regarding organizational dimensions, health care workers who reported high emotional demands, role conflict, and high work vulnerability presented a higher prevalence of suicidal ideation than those who did not report these work conditions (see Table 3). Workplace bullying was the organizational dimension with the most significant weight, as almost one in five people who reported having been victims of bullying presented suicidal ideation (18.77 %). Likewise, among those who reported using psychotropic drugs, 11.93 % reported suicidal ideation. Finally, among those who reported a favorable conflict management climate at work, the

Table 2. Prevalence of leadership styles, organizational dimensions and mental health (n = 1855)

Variables		Men	Women	Total	*p*
n (%)		n (%)	n (%)		
Leadership behaviors	*Laissez-faire* leadership	232 (31.02)	379 (34.24)	611 (32.94)	0.148
	Tyrannical leadership	90 (11.95)	159 (14.43)	249 (13.42)	0.124
	Constructive leadership	656 (87.12)	938 (85.12)	1594 (85.93)	0.224
Organizational dimensions	Workplace bullying	103 (13.68)	190 (17.24)	293 (15.8)	0.039
	Emotional demands	331 (43.96)	580 (52.63)	911 (49.11)	0.000
	Role conflict	339 (45.02)	459 (41.65)	798 (43.02)	0.150
	Work vulnerability	366 (48.61)	558 (50.64)	924 (49.81)	0.391
	Conflict management climate	250 (33.20)	335 (30.40)	585 (31.54)	0.202
Dimensions of mental health	Psychotropic use	172 (22.84)	356 (32.30)	528 (28.46)	0.000
	Suicidal ideation	46 (6.11)	73 (6.62)	119 (6.42)	0.656

Table 3. Prevalence of suicidal ideation (%) according to leadership styles, work-related social, organizational and mental health variables in men and women (n = 1855)

Variables			Men	Women	Total	*p*
			n (%)	n (%)	n (%)	
Leadership behaviors	*Laissez-faire* leadership	Yes	27 (11.64)	34(8.97)	61 (9.98)	0.000
		No	19 (3.68)	39 (5.36)	58 (4.66)	
	Tyrannical leadership	Yes	16 (17.78)	20 (12.58)	36 (14.46)	0.000
		No	30 (4.52)	53 (5.62)	83 (5.17)	
	Constructive leadership	Yes	35 (5.34)	57 (6.08)	92 (5.77)	0.005
		No	11 (11.34)	16 (9.76)	27 (10.34)	
Work-related social variables	Age	18–35	32 (7.77)	50 (8.47)	82 (8.18)	0.009
		36–45	6 (3.41)	13 (4.81)	19 (4.26)	
		46–60	5 (3.73)	10 (4.57)	15 (4.25)	
		> 60	3 (9.78)	0 (0.00)	3 (5.56)	
	Financial income	≤ 600 000	31 (7.83)	54 (7.93)	85 (7.89)	0.002
		≥ 600 001	15 (4.20)	19 (4.51)	34 (4.37)	
	Discrimination	Yes	28 (12.07)	40 (10.26)	68 (10.93)	0.000
		No	18 (3.45)	33 (4.63)	51 (4.14)	
	Stressful life event	Yes	20 (10.70)	32 (11.23)	52 (11.02)	0.000
		No	26 (4.59)	41 (5.02)	67 (4.84)	

Variables			Men n (%)	Women n (%)	Total n (%)	*p*
Organizational dimensions	Workplace bullying	Yes	23 (22.33)	32 (16.84)	55 (18.77)	0.000
		No	23 (3.54)	41 (4.50)	64 (4.10)	
	Emotional demands (high)	Yes	32 (9.67)	57 (9.83)	89 (9.77)	0.000
		No	14 (3.32)	16 (3.07)	30 (3.18)	
	Role conflict	Yes	27 (7.96)	44 (9.59)	71 (8.90)	0.000
		No	19 (4.59)	29 (4.51)	48 (4.54)	
	Work vulnerability (high)	Yes	33 (9.02)	58 (10.39)	91 (9.85)	0.000
		No	13 (3.36)	15 (2.76)	28 (3.01)	
	Conflict management climate	Yes	10 (4.00)	12 (3.58)	22 (3.76)	0.002
		No	36 (7.16)	61 (7.95)	97 (7.64)	
Mental health	Psychotropic use	Yes	20 (11.63)	43 (12.08)	63 (11.93)	0.000
		No	26 (4.48)	30 (4.02)	56 (4.22)	

prevalence of suicidal ideation decreased considerably (3.76 % versus 7.64 %).

Once the sample was described and the analysis of the prevalence of suicidal ideation according to sex and variables of interest was presented, statistical analysis was performed using logistic regression models. These models estimated the association between exposure to destructive leadership and the presence of suicidal ideation, controlling for relevant organizational covariates. The results of the crude and adjusted models are presented below, detailing the regression coefficients, their 95 % confidence intervals, and the model fit.

Logistic regression models

Using logistic regression models, the possibility of presenting suicidal ideation in the presence of tyrannical, *laissez-faire,* and constructive leadership was analyzed (see Table 4).

Raw models

Analyses show that men exposed to *laissez-faire* leadership [OR = 3.44 (95 % CI: 1.87–6.33)] and tyrannical leadership [OR = 4.56 (95 % CI: 2.37–8.76)], who experienced workplace bullying [OR = 7.83 (95 % CI: 4.20–14.61)], high emotional demands [OR = 3.11 (95 % CI: 1.63–5.94)], high work vulnerability [OR = 2.85 (95 % CI: 1.47–5.50)] and who consumed psychotropic drugs [OR = 2.80 (95 % CI: 1.52–5.16)] had a higher possibility of presenting suicidal ideation compared to those not exposed. In addition, it is essential to note that exposure to a constructive leadership style was a protective factor concerning suicidal ideation [OR = 0.44 (95 % CI: 0.21–0.89)] in men (see Table 4).

For women, those exposed to *laissez-faire* leadership [OR = 1.74 (95 % CI: 1.07–2.80)] and tyrannical leadership [OR = 2.41 (95 % CI: 1.40–4.16)]; who experienced workplace bullying [OR = 4.30 (95 % CI: 2.62–7.04)], high emotional demands [OR = 3.44 (95 % CI: 1.95–6.08)], high role conflict [OR = 2.24 (95 % CI: 1.38–3.64)], high work vulnerability [OR = 4.09 (95 % CI: 2.28–7.31)], and who made use of psychotropic drugs [OR = 3.27 (95 % CI: 2.01–5.32)], were more likely to present suicidal ideation when compared to women not exposed to these dimensions.

In both sexes, conflict management climate was not a statistically significant variable.

Adjusted models

While the total group of workers exposed to *laissez-faire* leadership [OR = 1.60 (95 % CI: 1.08–2.38)] and tyrannical leadership [OR = 1.99 (95 % CI: 1.25–3.16)] has been almost twice as likely to present suicidal ideation than those not exposed, when stratifying by sex and adjusting for possible confounding factors (age, income, stressful life event and psychotropic use), this association loses significance for women, whereas, in men, the association between destructive leadership and suicidal ideation is maintained, and the effect size is even increased: men exposed to *laissez-faire* leadership styles [OR = 2.52 (95 % CI: 1.34–5.76)] and tyrannical leadership [OR = 2.80 (95 % CI: 1.33–5.87)] are almost three times more likely to present suicidal ideation when compared to those not exposed.

Table 4. Associations between suicidal ideation, leadership styles, and organizational dimensions in crude and adjusted stratified models for men and women (n = 1855)

Variables		Raw model			Adjusted model *		
		OR [IC 95 %]			OR [ICI 95 %]		
		Men	Women	Total	Men	Women	Total
Leadership behaviors	*Laissez-faire* leadership	3.44 [1.87–6.33]	1.74 [1.07–-2.80]	2.26 [1.56–3.29]	2.52 [1.34–4.76]	1.20 [0.72–1.99]	1.60 [1.08–2.38]
	Tyrannical leadership	4.56 [2.37–-8.76]	2.41 [1.40–-4.16]	3.10 [2.04–4.70]	2.80 [1.33–5.87]	1.62 [0.89–2.94]	1.99 [1.25–3.16]
	Constructive leadership	0.44 [0.21–-0.89]	0.59 [0.33–-1.07]	0.53 [0.33–0.83]	0.50 [0.22–1.12]	0.75 [0.41–1.40]	0.66 [0.40–1.08]
Organizational dimensions	Workplace bullying	7.83 [4.20–-14.61]	4.30 [2.62–-7.04]	5.40 [3.67–7.95]	5.63 [2.61–12.13]	2.40 [1.36–4.23]	3.22 [2.05–5.04]
	Emotional Demands	3.11 [1.63–-5.94]	3.44 [1.95–-6.08]	3.29 [2.15–5.04]	2.32 [1.15–4.68]	2.59 [1.38–4.85]	2.38 [1.50–3.79]
	Role conflict	1.79 [0.98–-3.29]	2.24 [1.38–3.64]	2.05 [1.40–2.99]	1.07 [0.54–2.10]	1.33 [0.77–2.29]	1.22 [0.80–1.86]
	Work vulnerability	2.85 [1.47–-5.50]	4.09 [2.28–7.31]	3.52 [2.28–5.43]	1.78 [0.85–3.70]	2.63 [1.40–4.93]	2.22 [1.38–3.57]
	Conflict management climate	0.54 [0.26–-1.10]	0.42 [0.22–0.80]	0.47 [0.29–0.75]	0.74 [0.33–1.67]	0.49 [0.24–0.97]	0.58 [0.34–0.98]
Mental health dimension	Psychotropics use	2.80 [1.52–-5.16]	3.27 [2.01–5.32]	3.07 [2.11–4.47]			

OR = *Odds Ratio*; IC 95 % = 95 % confidence interval.

* Model controlled by work-related social variables: age (under 35 years), financial income (less than 600 000 Chilean pesos), discrimination (at least one episode), stressful life event (one event in the last 6 months) and by mental health variable: use of psychotropic drugs.

In terms of exposure to organizational dimensions, men exposed to workplace bullying are 5 times more likely to have suicidal ideation compared to those not exposed [OR = 5.63 (95 % CI: 2.61–12.13)]; and men exposed to high emotional demands are 2 times more likely to have suicidal ideation [OR = 2.32 (95 % CI: 1.15–4.68)] when compared to those not exposed. In the case of women, those exposed to workplace bullying [OR = 2.40 (95 % CI: 1.36–4.23)], high emotional demands [OR = 2.59 (95 % CI: 1.38–4.85)] and work vulnerability [OR = 2.63 (95 % CI: 1.40–4.93)] are 2.5 times more likely to present suicidal ideation than women workers not exposed to these organizational dimensions.

Interestingly, a favorable conflict management climate was a protective factor for suicidal ideation for both the total sample of workers [OR = 0.58 (95 % CI: 0.34–0.98)] and the sample of women [OR = 0.49 (95 % CI: 0.24–0.97)], but not for men.

Discussion

The present study aimed to identify protective and risk factors in the relationship among destructive leadership, organizational dimensions, and suicidal ideation in public health workers in Chile. Although the literature on the relationship between leadership styles and suicidal ideation is scarce, previous studies have been able to demonstrate this association [23,42].

The present study shows that workers exposed to *laissez-faire* and tyrannical leadership are almost twice as likely to exhibit suicidal ideation as those not exposed. This finding is consistent with the results of Liu et al. [23], where abusive supervision— a type of destructive leadership— was identified as a predictor of suicidal ideation [23].

The fact that the significance of this result is maintained only for the models including men and that in this subsample the effect size increases to almost three times, respectively, confronts us with the relevance of gender in the relationship between work and health. The

analysis of occupational health requires incorporating a gender perspective, especially in the case of healthcare workers, where 75 % or more of the workforce is female. As in previous studies, female healthcare workers report greater exposure to emotional demands and worse mental health outcomes [6,43]. These differences arise because women often occupy different jobs; when they hold the same job, they are required to perform the work differently, resulting in differential exposure to health risks [44, p. 619].

Therefore, it is key to consider the effects of organizational dimensions on the mental health of healthcare workers in a differentiated manner for men and women, thus workplace bullying, both for the total sample and the analysis stratified by sex, is associated with suicidal ideation, this finding being consistent with previous scientific literature, which establishes a significant positive association between workplace bullying and suicidal ideation [45].

Likewise, and coinciding with previous studies conducted with samples of Chilean health care workers, emotional demands, closely related to the nature of health care work, have an essential effect on mental health, as well as on the reporting of workplace violence in health care workers [6,43].

In our study, emotional demands, both in the total sample and in the sex-stratified analysis, are associated with suicidal ideation.

Another relevant dimension is work vulnerability, which refers to the fear that working conditions will worsen. This dimension, identified in the literature as job insecurity or subjective precariousness, is a strong predictor of occupational mental health problems [46]. In our study, women who report high work vulnerability have a greater possibility of presenting suicidal ideation, a finding that is consistent with a previous study, which established job insecurity as a predictor of suicidal ideation in women [12].

Concerning the protective factors of suicidal ideation, our analyses allow us to identify that, in women, an adequate conflict management climate acts as a protective factor against suicidal ideation, which can be understood in light of what was proposed by O'Brien et al. [47], who reported that leaders can develop conflict and crisis management competencies to deal with suicidal ideation in workers; or by Raschke et al. [48], who pointed out that poor interpersonal conflict management was associated with suicidal ideation in women.

The fact that an adequate conflict management climate is a protective factor against suicidal ideation in women provides an interesting clue to be analyzed in greater depth in future studies, as it illuminates routes for preventive action in terms of workplace violence, destructive leadership, and the consequent impact on mental health.

On the other hand, the hypothesis that constructive leadership would act as a protective factor about suicidal ideation cannot be tested, which brings us back to Krieger's ecosocial theory of health, where the factors that make us sick are different from those that allow us to protect our health, emphasizing the social dimensions [49]. It also makes us reflect on the idea that destructive leadership behaviors coexist with constructive behaviors and that the occurrence of adverse events at work, such as violence, has significant effects on people's mental health [45], but not necessarily the other way around.

The first limitation of this study was the healthy worker bias, since the survey was conducted in the workplace and naturally excluded those who were ill and therefore absent from participating. A second limitation was the cross-sectional nature of the data presented here, which precludes demonstrating causality due to the temporal nature of the associations.

Regarding the generalization of the data, the characteristics of the probabilistic sampling stratified by sex and professional category allow us to achieve a good representativeness of the sample and reduce biases, incorporating all relevant categories of health workers. Therefore, although the results can be generalized to public health workers in Chile, the absence of data from workers in the northern part of the country limits this generalization, even though the demographic zones incorporated account for almost half of the population studied (45.6 %).

This study is highly relevant for the care and protection of the mental health of health care workers, showing the harmful effects that destructive leadership and specific organizational dimensions have on the mental health of workers, constituting risk or protection factors in a differential manner for men and women.

In conclusion, the findings of the present study show that destructive leadership is a risk factor for suicidal ideation in men. They also reinforce the importance of addressing organizational factors such as workplace bullying, emotional demands and work vulnerability, which are configured as risk factors for suicidal ideation for both men and women, and have a direct impact on the mental health of male and female workers.

Likewise, conflict management climate constitutes a protective factor for mental health in organizations and especially in women, offering an opportunity for intervention, suggesting that a preventive approach and the promotion of healthy work environments are key to reducing the prevalence of suicidal ideation. Similarly, the creation of workplace policies that promote constructive leadership, fairness, and effective conflict resolution could be a fundamental step in protecting the mental health of workers and preventing associated severe disorders.

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Conflict of Interest Statement

The authors of this article declare no potential conflicts of interest

Disclaimer

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Authors' Contribution Statement

Elisa Ansoleaga Moreno: Conceptualization - Data Curation - Formal Analysis - Research - Methodology - Project Administration - Validation - Visualization - Writing of Original Draft - Writing for Review and Editing.
Belén Villagra Cantero: Conceptualization - Formal Analysis - Research - Methodology - Validation - Visualization - Writing of Original Draft - Writing for Review and Editing.
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