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Mental health, quality of life, and occupational balance among taxi drivers in Spain and Chile: A cross-cultural study

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ABSTRACT

Introduction: Taxi drivers are a vital component of urban mobility but face significant health risks from adverse working conditions, including prolonged periods of sitting, sedentary behavior, and exposure to pollutants. These factors contribute to the development of musculoskeletal disorders, cardiovascular issues, respiratory problems, and mental health challenges like anxiety and depression. Occupational Balance (OB) is crucial for maintaining health, yet its impact on quality of life (QoL) is underexplored. This study examines the relationships between QoL, mental health, and OB among taxi drivers in Zaragoza, Spain, and Valparaíso, Chile.

Methodology: An observational study was conducted with 174 taxi drivers (117 from Spain and 57 from Chile). Data were collected using an ad hoc questionnaire, the Short Form-36 Health Survey (SF-36), the Occupational Balance Questionnaire (OBQ-E), and the Depression, Anxiety, and Stress Scale (DASS-21). Sociodemographic details, QoL, stress, anxiety, and depression levels were analysed. Multivariate regression identified associations between QoL components and predictors such as financial situation, stress, anxiety, depression, and OB.

Results: Spanish taxi drivers reported better physical function and physical health than their Chilean counterparts, while Chilean drivers scored higher in vitality, social function, and mental health. Stress was a significant predictor of poorer mental health in both countries, with odds of 4.49 in Chile and 3.90 in Spain. Anxiety impacted both QoL components in Chile, whereas in Spain, financial situation and depression were key determinants. Chilean drivers had better overall OB compared to Spanish drivers.

Conclusions: Stress, anxiety, and depression significantly impact taxi drivers' health in both countries, with financial perception particularly influencing Spanish drivers. The findings highlight the need for comprehensive stress management and socio-economic interventions to improve the well-being of taxi drivers. This study offers new insights into the occupational health of taxi drivers across different cultural contexts, emphasizing areas for targeted policy and health interventions.

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1. Introduction

Taxi drivers are indispensable to urban mobility, linking people and places in cities worldwide. However, their profession poses significant risks and exposes them to adverse working conditions that can detrimentally impact both their physical and mental well-being. Prolonged periods of sitting while driving increase their susceptibility to musculoskeletal disorders (Abledu et al., 2014; Burgel and Elshatarat, 2017), while the lifestyle associated with the profession—characterized by low levels of physical activity, sedentary behaviours, and frequent consumption of tobacco and processed foods—places them at heightened risk for cardiovascular conditions (Elshatarat and Burgel, 2016; Orleans et al., 2019). Furthermore, mental health challenges such as higher rates of depression and reduced well-being have been documented (Burgel and Elshatarat, 2019; Rathi et al., 2019a) exacerbated by the long working hours commonly associated with the occupation (Wang et al., 2019). In addition to health risks, taxi drivers often face economic instability, with fluctuating incomes contributing to unpredictable and stressful work routines (del Nido, 2020).

This reality is not exclusive to taxi drivers. Several studies on commercial drivers—including truck drivers, motorcycle taxi drivers, and public transport operators—have documented similar working conditions, which are associated with a higher prevalence of musculoskeletal disorders, cardiovascular diseases, anxiety-depressive symptoms, and other physical and mental health problems (Arias-Meléndez et al., 2022; Crizzle et al., 2020; Hege et al., 2018; Useche et al., 2018).

The concept of occupational balance (OB) refers to the harmony and satisfaction that people experience when engaging in their daily activities. These activities, known as occupations, range from the basic tasks of daily living (eating and dressing) to more complex activities (meal preparation, shopping, work, study, social participation or leisure) (American Occupational Therapy Association, 2020). OB is needed to maintain both physical and mental health. When people feel overwhelmed or unbalanced in their occupations, they may suffer from stress, burnout, depression or even health problems (Dür et al., 2022; Park et al., 2021; Röschel et al., 2022). In contrast, when they find a proper balance in their activities, they experience a greater sense of achievement, self-esteem and overall satisfaction with life (Håkansson et al., 2021; Kassberg et al., 2021; Wagman and Håkansson, 2014a). This suggests that OB is intimately linked to both quality of life (QoL) and mental health. For taxi drivers, achieving OB is particularly challenging due to the precarious nature of their work. Long, irregular hours, extended periods of sitting, and the economic uncertainties inherent to their profession could place taxi driver at heightened risk of occupational imbalance, which in turn could erode their overall QoL and mental well-being.

The World Health Organization (WHO) defines QoL as "individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, norms and concerns" (The WHOQOL Group, 1995). This definition underscores the inherently subjective nature of QoL, emphasizing that an individual's sense of well-being is shaped by their personal experiences and socio-cultural context. Despite the importance of QoL in understanding overall health outcomes, there is a noticeable gap in the literature when it comes to exploring the interrelationships between OB, QoL, and mental health within the specific context of work dynamics. Additionally, research rarely considers particular worker groups like taxi drivers, whose unique occupational environment warrants closer examination (Besagas and Branzuela, 2023; Kotera et al., 2020).

Unlike many studies that analyze the physical or mental health of professional drivers separately, this study takes a more comprehensive approach, considering how mental health, OB and QoL are intertwined in the daily experience of taxi drivers. A key innovation of this research lies in its focus on occupational balance—a construct widely studied in clinical and healthcare settings, yet seldom applied to occupational groups such as taxi drivers, despite the demanding and often precarious conditions they face. Moreover, by including participants from two culturally distinct countries, Chile and Spain, the study will offer a comparative lens to examine how differences in social and work environments may shape well-being. In doing so, this research not only contributes new empirical data but also seeks to draw attention to a typically underrepresented workforce, offering a more nuanced understanding of how structural and contextual factors influence occupational health and everyday life.

Consequently, the objectives of this research are: 1) to describe the mental health (presence of stress, anxiety and depression), OB and QoL of taxi drivers in two cities, Valparaíso (Chile) and Zaragoza (Spain), 2) to compare these variables between Spanish and Chilean taxi drivers, and 3) to evaluate the associations between mental health, OB and QoL.

2. Methodology

2.1. Study design and participants

The present study is a component of the research project entitled "Study on the State and Determinants of Physical and Mental Health of Taxi Drivers in Zaragoza (Spain) and Valparaíso (Chile)." This observational study aims to analyze the data collected from a sample of 174 taxi drivers, with 117 participants from Zaragoza, Spain, and 57 from Valparaíso, Chile. Zaragoza, a key urban center in northeastern Spain, has a robust economy largely driven by industry, logistics, and services. Its population of around 700,000 makes it a representative urban area for studying work conditions in large European cities (Ayuntamiento de Zaragoza, 2022). Its climate, marked by hot summers and cold winters, and well-developed transport infrastructure, provides an appropriate setting for examining the health and occupational challenges faced by taxi drivers in a European context. On the other hand, Valparaíso, a major seaport and coastal city in central Chile, is home to around 300,000 people. It features a unique urban environment with steep hills, dense traffic, and fluctuating socioeconomic conditions (Cuevas and Budrovich, 2020), which can influence occupational health differently compared to more structured European cities. The Mediterranean climate and dynamic urban infrastructure make it an ideal counterpart for comparing the occupational health and well-being of taxi drivers in a Latin American setting. The research seeks to provide

insights into the physical and mental health conditions prevalent within this occupational group, particularly in relation to the specific environmental, social, and occupational factors that influence their well-being in two culturally distinct cities.

The study only included traditional taxi drivers: those with official licenses who operate under local taxi cooperatives or associations. Drivers who work through online transport platforms such as Uber, Cabify or similar services were excluded, as their working conditions differ considerably.

The sampling process employed a combination of non-probability convenience and snowball sampling methods to recruit participants. This dual approach allowed researchers to initially select participants from known networks and then expand the sample by encouraging participants to recommend other taxi drivers.

Although this type of sampling does not guarantee statistical representativeness, efforts were made to include a variety of profiles according to age, work experience and gender. In addition, data collection was extended for a full year, between October 2022 and November 2023, in order to capture possible seasonal variations that could affect drivers' health and quality of life. Even considering these strategies, it is recognized that the results should be interpreted with caution, as they cannot be generalized to the entire population of taxi drivers, but they do provide a relevant insight into their occupational and health reality in both contexts.

The inclusion criteria for this study were defined to focus on active taxi drivers who worked in the cities of Zaragoza, Spain, or Valparaíso, Chile. Specifically, the participants had to meet the following criteria: (1) they had to be actively working as taxi drivers; and (2) had to be working within the city of Zaragoza or the Valparaíso region. To ensure that participants had adequate exposure to the occupational demands and risks associated with taxi driving, two exclusion criteria were applied: (1) current work incapacity, which would disqualify individuals who were unable to work at the time of data collection, and (2) less than one year of experience working as a taxi driver, as the research aimed to analyze the long-term effects of this profession on health outcomes.

2.2. Ethics committee

This study was approved by the Research Ethics Committee of the Autonomous Community of Aragón (PI22-382) and by the Bioethics Committee of the Pontificia Universidad Católica de Valparaíso (n°BIOEPUCV-H 633–2023). All participants provided voluntary consent by signing the informed consent form after being fully informed about the study's objectives. They were also made aware of their right to withdraw from the study at any point without consequence.

2.3. Recruitment of participants

Prior to commencing the research, the taxi cooperatives in both cities were contacted to request permission for the use of their facilities for the study. The cooperatives also assisted in informing taxi drivers of the meeting place, date, and time via internal communications, including WhatsApp messages, social media platforms, and their in-house magazine. Taxi drivers interested in participating in the study arrived at the cooperative's facilities and completed the questionnaires both in paper and digital format (Google Form). Any questions or concerns were addressed by two researchers on-site.

2.4. Instruments

For this study, four instruments were selected for analysis: an ad hoc questionnaire developed to obtain socio-demographic, personal and occupational information; the Short Form-36 Health Survey (SF-36); the Occupational Balance Questionnaire (OBQ-E), and the Depression, Anxiety, and Stress Scale (DASS-21).

The selection of these instruments was intentional, as they enabled the exploration of key dimensions considered fundamental to understanding the well-being of taxi drivers: mental health, perceived quality of life, and occupational balance. The tools employed in this study are well-established, with strong psychometric properties, which supports the reliability of the results. Furthermore, their widespread use facilitates meaningful comparisons across the two distinct sociocultural contexts examined.

Ad Hoc Questionnaire: This questionnaire collected data on various aspects including age, gender, marital status, number of children, education level, height, weight, sleep hours, economic situation, work shifts, average working hours, length of working life (overall and specifically as a taxi driver), and whether participants had a second job (if applicable, details regarding the second job and the percentage of time devoted to taxi driving versus the second occupation were requested).

OBQ-E (Wagman and Håkansson, 2014b) was chosen because it is the most widely used instrument for measuring occupational balance perception in the adult population. Assesses individuals' satisfaction with the quantity and variety of their daily occupations. It comprises 13 items rated on a six-point ordinal scale ranging from 0 (strongly disagree) to 5 (strongly agree). The total score is calculated by summing the item responses, resulting in a possible range of 0–65 points. The OBQ has demonstrated good internal consistency (Cronbach's alpha = 0.94) and strong test-retest reliability (Spearman's Rho = 0.93), with no evidence of floor or ceiling effects (Håkansson et al., 2020). It was adapted and validated for the Spanish population (OBQ-E) (Peral-Gómez et al., 2021) with good content validity, moderate convergent validity, strong test-retest reliability and excellent internal consistency.

The SF-36 (J. E. Ware and Sherbourne, 1992) was selected because of its widespread use in occupational health studies. It is a self-report questionnaire to assess quality of life consisting of 36 items divided into 8 health domains (Physical Function, Physical Role, Bodily Pain, General Health, Vitality, Social Function, Emotional Role and Mental Health). These domains are further grouped into two main components: Physical Health and Mental Health. Each domain is scored independently, with values ranging from 0 to 100, where higher scores indicate better quality of life. To assess the set of questions in the instrument, the responses of all participants were transformed into scores ranging from 0 to 100, allowing for T-score coding, with a mean of 50 and a standard deviation of 10,

according to the available international validation methodology (J. Ware, 1994). The scale was validated for the Spanish population (Alonso et al., 1995) with a Cronbach's alpha above 0.7 for all dimensions (range: 0.71–0.94) except for the Social Functioning scale (alpha = 0.45). The intraclass correlation coefficients between both administrations of the questionnaire ranged between 0.58 and 0.99. The scale has also been validated in the Chilean population (Olivares, 2006).

The abbreviated version of the DASS-21 (Lovibond, 1995) was used. This scale was chosen for its brevity, reliability, and ability to assess three key dimensions of mental health in a differentiated manner, which are particularly useful in demanding work contexts such as taxi driving. Consists of 21 statements rated on a 4-point Likert scale and is divided into three subscales: Depression, Anxiety, and Stress, each containing seven items. The total score is calculated by summing the scores for all items, with higher scores indicating greater psychological distress (range: 0–63). The questionnaire has been validated in the Spanish population (Daza et al., 2002) which showed good internal consistency in the present study (composite reliability, $\omega = 0.94$) (Bados et al., 2005) and has also been validated for use in the Chilean population.

2.5. Data analysis

Data were analysed using STATA MP2V.16 software for Windows. Continuous variables were described using the mean and standard deviation, while categorical variables were expressed as percentages derived from their frequencies.

The sample group was divided into two groups based on the country, Spain or Chile. Socio-demographic data were analysed according to these two groups, focusing on variables such as age, gender, marital status, educational level, hours of sleep per day, satisfaction with current financial situation, type of workday, hours worked per day, years of work as a taxi driver, total years of employment, and whether they had a second job. Fisher's exact test of association and Chi-square tests were applied to analyze these

Table 1
Sociodemographic characteristics.

	Total (n = 174)	Chile (n = 57) n (%)	Spain (n = 117) n (%)	P value
Age	51.1 ± 10.0	54.0 ± 11.8	49.5 ± 8.5	**0.003**
Gender				
Male	152 (87.36)	51 (89.97)	101 (86.32)	0.557
Female	22 (12.64)	6 (10.53)	16 (13.68)	
Civil status				
Single	39 (22.41)	17 (29.82)	22 (18.00)	**0.004**
In a relationship	8 (4.60)	2 (3.51)	6 (5.13)	
Married	105 (60.34)	25 (43.86)	80 (68.38)	
Divorced	22 (12.64)	13 (22.81)	9 (7.69)	
N° of children	1.57 ± 1.17	2.29 ± 1.26	1.22 ± 0.93	**<0.001**
Education				
Primary	28 (16.37)	4 (7.02)	24 (21.05)	**<0.001**
Secundary	49 (28.65)	32 (56.14)	17 (14.91)	
Post-secundary	94 (54.97)	21 (36.84)	73 (64.04)	
Financial status				
Satisfied	116 (66.67)	25 (43.83)	91 (77.78)	**<0.001**
Unsatisfied	58 (33.33)	32 (56.14)	26 (22.22)	
Work shifts				
Daytime	111 (63.79)	55 (96.49)	56 (47.86)	**<0.001**
Mixed	59 (33.91)	0 (0)	59 (50.43)	
Nocturnal	4 (2.30)	2 (3.51)	2 (1.71)	
Hours of work per day				
5–8 h	48 (27.59)	40 (70.18)	8 (6.84)	**<0.001**
≥ 9 h	126 (72.41)	17 (29.82)	109 (93.16)	
Years worked as a taxi driver	16.67 ± 10.34	16.52 ± 10.55	16.74 ± 10.28	0.899
Other profession				
Yes	22 (12.64)	12 (21.05)	10 (8.55)	**0.020**
No	152 (87.36)	45 (78.95)	107 (91.45)	

Data are expressed as mean ± standard deviation, or mean (percentage).

categorical variables.

QoL was evaluated by comparing the scores of each QoL dimension (physical function, physical role, bodily pain, general health, vitality, social function, emotional role, and mental health) across the two countries. For the coding of the QoL questionnaire, the scores obtained by each participant were transformed into a scale from 0 to 100. To standardize the sample, the T-score was used with a mean of 50 and a SD of 10 according to the available international methodology. Finally, a score above 50 indicates a good perception of QoL, while scores below 50 indicate a poor perception of QoL. The 50th percentiles (p50) of each summary factor (MCS and PCS) were used as a cut-point to dichotomize the data (Lizana et al., 2021)

Mental health status was assessed based on levels of stress, anxiety, and depression. The entire sample was categorized by the presence or absence of symptoms, with additional classifications into 'absent,' 'mild,' 'moderate,' 'severe,' and 'extremely severe.' These results were then analysed comparatively between the two groups.

Univariate logistic regression analysis was performed including sociodemographic variables, work related variables and presence of stress, anxiety, depression, and OB as independent variables while physical and mental health components of QoL were used as dependent variables.

These analyses were followed by a multivariate logistic that only included those independent variables that have shown to be significant in the univariate logistic regression adjusted for gender and age. A 95 % confidence interval was applied for all analyses ($p < 0.05$).

3. Results

As shown in Table 1, data were obtained from 174 taxi drivers (117 Spain/57 Chile). The sample presented a mean age of 54.0 ± 11.9 in Chile while in Spain it is 49.6 ± 8.6.

3.1. Sociodemographic characteristics

As shown in Table 1, the percentage of men was similar between Spain (89.97 %) and Chile (86.32 %), as was the number of worked years. However, significant differences were observed for most of the other variables, including the number of children, educational level, financial satisfaction, shift work, and hours worked.

3.2. Quality of life

Significant differences were observed between the Chilean and Spanish groups in several domains. Spanish taxi drivers scored higher in Physical Function and the Physical Health Component, whereas Chilean taxi drivers scored higher in Vitality, Social Function, Mental Health, and the Mental Health Component. Both groups reported poor quality of life in terms of General Pain and General Health. No significant differences were found between the groups in the Physical Role, Body Pain, General Health, and Emotional Role scores (Table 2).

3.3. Stress, depression and anxiety

As illustrated in Table 3, 23.56 % of the assessed taxi drivers reported stress symptoms, 22.99 % demonstrated anxiety symptoms and 19.54 % displayed depression symptoms. No significant differences were found in the occurrence of stress, anxiety, and depression, nor in the severity subcategories (mild, moderate, severe, extremely severe) between the Chilean and Spanish populations.

3.4. Occupational balance

Taxi drivers in Chile demonstrated better OB compared to their counterparts in Spain, both overall and in each of the 13 questions.

Table 2
Analysis of the eight dimensions of the SF-36 questionnaire.

	Total (n = 174)	Chile (n = 57)	Spain (n = 117)	P value
SF 36				
Physical Funtion	51.71 ± 6.69	49.64 ± 8.36	52.72 ± 5.47	**0.004**
Physical Role	50.09 ± 7.11	50.11 ± 7.47	50.08 ± 6.95	0.976
Bodily Pain	48.75 ± 6.58	49.23 ± 6.86	48.51 ± 6.45	0.498
General Health	46.27 ± 9.65	46.60 ± 10.78	46.10 ± 9.10	0.753
Vitality	50.45 ± 9.54	52.64 ± 10.76	49.39 ± 8.74	**0.034**
Social Function	50.11 ± 9.52	52.63 ± 8.88	48.88 ± 9.61	**0.014**
Emotional Role	50.85 ± 7.19	50.75 ± 7.27	50.90 ± 7.19	0.899
Mental Health	48.11 ± 12.02	53.45 ± 10.51	45.51 ± 11.88	**<0.001**
Physical Health Component	49.69 ± 6.66	47.95 ± 7.03	50.55 ± 6.33	**0.015**
Mental Health Component	49.36 ± 10.27	53.52 ± 9.49	47.33 ± 10.06	**<0.001**
General Health	46.27 ± 9.65	46.60 ± 10.78	46.10 ± 9.10	0.753

Table 3
Rates of stress, anxiety and depression in Spain, Chile and total.

	Total (n = 174) n (%)	Chile (n = 57) n (%)	Spain (n = 117) n (%)	P value
DASS 21				
Stress				0.829
No symptoms	133 (76.44)	43 (75.44)	90 (76.92)	
With symptoms	41 (23.56)	14 (24.56)	27 (23.08)	
Subcategories stress				0.335
Mild stress	14 (8.05)	3 (5.26)	11 (9.40)	
Moderate stress	13 (7.47)	5 (8.77)	8 (6.84)	
Severe stress	12 (6.90)	4 (7.02)	8 (6.84)	
Extremely severe stress	2 (1.15)	2 (3.51)	0 (0.00)	
Anxiety				0.266
No symptoms	134 (77.01)	41 (71.93)	93 (79.49)	
With symptoms	40 (22.99)	16 (28.07)	24 (20.51)	
Subcategories anxiety				0.597
Mild anxiety	7 (4.02)	2 (3.51)	5 (4.27)	
Moderate anxiety	17 (9.77)	6 (10.43)	11 (9.40)	
Severe anxiety	6 (3.45)	3 (5.26)	3 (2.56)	
Extremely severe anxiety	10 (5.75)	5 (8.77)	5 (4.27)	
Depression				0.643
No symptoms	139 (79.89)	47 (82.46)	92 (78.63)	
With symptoms	34 (19.54)	10 (17.54)	24 (20.51)	
Subcategories depression				0.666
Mild depression	12 (6.90)	5 (8.77)	7 (5.98)	
Moderate depression	13 (7.47)	2 (3.51)	11 (9.40)	
Severe depression	4 (2.30)	1 (1.75)	3 (2.56)	
Extremely severe depression	6 (3.45)	2 (3.51)	4 (3.42)	

As illustrated in Table 4, significant differences were observed in all questions except for Question 7 (Have sufficient time for obligatory tasks) and Question 13 (Satisfaction with time spent on rest, recovery, and sleep).

3.5. Associations of mental health and OB with QoL

As shown in Table 5 the presence of stress was the only variable that affected both Spanish and Chilean taxi drivers, mental health components of QoL (OR of 4.60 and 4.37 respectively, both $p < 0.05$)

In Chilean taxi drivers, anxiety was also associated with the mental (OR of 4.86, $p < 0.05$) and physical (OR of 17.37, $p < 0.05$) components of QoL.

Table 4
OB categorized by individual questions, country, and combined results.

	Total (n = 174)	Chile (n = 57)	Spain (n = 117)	P value
OBQ-E				
1. Balance between doing things for others/for oneself	3.43 ± 1.38	3.96 ± 1.46	3.16 ± 1.27	**<0.001**
2. Perceiving one's occupations as meaningful	4.13 ± 1.05	4.53 ± 0.91	3.94 ± 1.06	**<0.001**
3. Time for doing things wanted	3.85 ± 1.18	4.35 ± 1.06	3.61 ± 1.16	**<0.001**
4. Balance between work, home, family, leisure, rest, and sleep	3.31 ± 1.48	4.02 ± 1.41	2.97 ± 1.40	**<0.001**
5. Balance between doing things alone/with others	3.27 ± 1.44	3.79 ± 1.44	3.02 ± 1.37	**<0.001**
6. Having sufficient to do during a regular week	3.97 ± 1.21	4.14 ± 1.31	3.88 ± 1.15	**0.026**
7. Have sufficient time for doing obligatory occupations	2.82 ± 1.53	3.04 ± 1.74	2.27 ± 1.41	0.189
8. Balance between physical, social, mental, and restful occupations	2.90 ± 1.54	3.47 ± 1.69	2.62 ± 1.39	**<0.001**
9. Satisfaction with how time is spent in everyday life	2.91 ± 1.51	3.54 ± 1.59	2.60 ± 1.38	**<0.001**
10. Satisfaction with the number of activities during a regular week	2.98 ± 1.51	3.32 ± 1.68	2.82 ± 1.39	**0.019**
11. Balance between obligatory/voluntary occupations	3.02 ± 1.48	3.49 ± 1.60	2.79 ± 1.36	**0.001**
12. Balance between energy-giving/energy-taking activities	3.03 ± 1.47	3.54 ± 1.49	2.79 ± 1.34	**<0.001**
13. Satisfaction with time spent in rest, recovery, and sleep	2.90 ± 1.64	3.04 ± 1.86	2.84 ± 1.53	0.458
Total	42.52 ± 13.39	48.23 ± 12.83	39.74 ± 12.81	**<0.001**

In Spanish taxi drivers a negative perception of financial status was associated with both the mental (OR of 3.26, $p < 0.05$) and physical (OR of 3.25, $p < 0.05$) components of QoL. Total working years (OR of 0.95, $p < 0.05$) and OB (OR of 0.96, $p < 0.05$) were identified as protective factors for the mental component of QoL. Conversely, depression was found to have a negative association with this component (OR of 3.72, $p < 0.05$).

Table A.1 (Appendix A) presents the results of the multivariate analysis examining the relationships between the mental and physical components of QoL and the presence of stress, anxiety, depression, and altered OB, adjusting for gender and age. Financial situation was only included in the analysis of Spanish taxi drivers as it was found to be a significant sociodemographic factor in Spain but not in Chile in the univariate analysis (Table 5).

Approximately three times higher odds of better mental and physical component (OR of 2.96 and 3.05 respectively) were found in Spanish taxi drivers that reported to be satisfied with their financial situation.

The presence of stress was a significant predictor of mental health in both countries. For Chilean taxi drivers, the odds of poorer mental health were 4.49 times greater, while for Spanish taxi drivers, the odds were 3.90 times greater.

Anxiety was significantly associated with both the mental and physical components of QoL among Chilean taxi drivers, but not among Spanish taxi drivers. For the mental component, the odds of poorer health were 8.50 times greater, and for the physical component, 17.50 times greater. No other variables showed a statistically significant association.

Finally, OB was a significant predictor of Mental component of QoL in Spanish taxi driver. For each unit increase in OB, the odds of worse mental component decreased slightly (OR = 0.97).

4. Discussion

This study aimed to explore the potential relationship between the QoL, mental health status, and OB of taxi drivers in the cities of Zaragoza, Spain, and Valparaíso, Chile.

The study revealed that taxi drivers had high levels of stress (23.56 %), anxiety (22.99 %) and depression (19.55 %). These percentages are considerably higher than the global estimates provided by the WHO (World Health Organization, 2022), which indicate a prevalence of anxiety disorders of 4.8 % and depression of 5 % in the general population. These results suggest that taxi drivers, due to the nature of their work, may be exposed to specific risk factors that contribute to increased vulnerability in terms of mental health.

There was a considerable prevalence of taxi drivers in both countries who experience mental health disorders, with anxiety being more prevalent among Chilean taxi drivers (28.07 %) compared to Spanish drivers (20.51 %), while the opposite is true for depression, though the percentages were more even. Nevertheless, these figures were lower than those reported in India (Rathi et al., 2019b), where higher rates of stress (60.5 %), anxiety (47 %), and depression (36.5 %) were observed, but higher than those reported in Australia (Davidson et al., 2020), with stress at 19 %, anxiety at 24.1 %, and depression at 14.3 %. However, the results coincide with studies carried out in countries such as South Korea, the United States and Australia, where a deterioration in mental health has also been identified due to exhausting working hours, conflicts between work and family life, low work commitment, traumatic experiences, a constant feeling of insecurity or financial insecurity. In these contexts, as in Chile and Spain, the work environment acts as a relevant risk factor for the development of symptoms of stress, anxiety and depression (Marín-Berges et al., 2025)

In terms of QoL, the results in both countries were similar to those reported in previous studies in Chile (Cerda Díaz et al., 2015). Chilean taxi drivers showed a better perception of their mental health compared to Spaniards, while Spaniards reported higher satisfaction in the physical health component. These findings reflect the influence of working conditions and psychosocial factors on taxi drivers' quality of life, in line with previous research highlighting the negative impact of work on the overall well-being of public transport drivers (Sepúlveda Guerra et al., 2020)

The overall OB of Spanish taxi drivers (39.74 ± 12.81) was lower than that of Chilean taxi drivers (48.23 ± 12.83). When analysing the responses to the OBQ-E, significant differences were observed between Chilean and Spanish taxi drivers. Chilean taxi drivers reported a better overall balance between their personal and work activities, feeling more able to devote time to both activities for themselves and for others. They also perceived that their occupations were more meaningful and that they had more time to pursue desired activities compared to Spanish taxi drivers. In terms of balance between work, home, leisure and rest, Chilean taxi drivers also performed better. Although both groups felt that they had enough to do during a typical week, this perception was slightly higher in Chile. However, no significant differences were found in terms of the availability of time to fulfil obligatory occupations. The difference between countries may be due to the fact that Spanish taxi drivers work more hours per day than Chilean taxi drivers and their working hours are not intensive but all day long. The absence of prior studies assessing OB in professional drivers precludes any meaningful comparisons. However, this data could serve as a reference point for future research in different countries.

Focusing on the predictors of QoL, the analysis revealed that stress is a key predictor of mental health problems in both Chile and Spain, maintaining its significant impact even after controlling for gender and age. In Chile, anxiety also stands out as a significant factor affecting physical health, while in Spain, depression and perception of a poor financial situation were key determinants in both areas. Additionally, OB may act as a moderate protective factor for mental health in Spain, although its impact was relatively low. Other research with taxi drivers found that worse mental health was associated with sleep disturbance (Mirpuri et al., 2020) or sleeping less than 8 h (Rathi et al., 2019b), conflicts between work and family (Shin and Jeong, 2021), racial discrimination (Mirpuri et al., 2020) or lack of language proficiency (Mirpuri et al., 2021), which in this case does not apply because all workers had Spanish as their mother tongue; in contrast, older age was a protective factor (Mirpuri et al., 2020) which was not the case for the present study.

In addition to OB, another protective factor is the total number of years worked, accumulated experience, which provides greater control over their tasks, lower work demands (Ng and Feldman, 2010), greater confidence in their abilities and an enahced ability to balance work and personal demands (Lange, 2006).

Table 5
Logistic Regression Analysis of the Physical and Mental Components of QoL and Financial Situation, Presence of Stress, Anxiety, Depression, and OB adjusting for gender and age.

		MCS-Chile (<p50)			MCS-Spain (<p50)			PCS-Chile (<p50)			PCS-Spain (<p50)		
Predictor (reference)	Variables	Odds ratio	IC 95 %	*p*	Odds ratio	IC 95 %	*p*	Odds ratio	IC 95 %	*p*	Odds ratio	IC 95 %	*p*
Perception Financial status (Unsatisfied)	Financial status	–			2.96	1.06–8.26	**0.038***	–			3.05	1.19–7.81	**0.020***
	Gender	–			2.01	0.58–6.97	0.273	–			2.70	0.85–8.61	0.093
	Age	–			0.96	0.92–1.01	0.099	–			1.04	0.99–1.09	0.099
Total working years (continuous)	Total working years	–			0.94	0.85–1.04	0.21	–			–		
	Gender	–			2.09	0.60–7.22	0.24	–			–		
	Age	–			1.02	0.07–28.99	0.82	–			–		
Stress (Yes)	Stress	4.49	1.19–16.92	**0.026***	3.90	1.33–11.48	**0.013***	3.35	0.80–14.10	0.099	1.77	0.69–4.52	0.230
	Gender	1.13	0.19–10.66	0.732	2.18	0.63–7.59	0.220	0.88	0.15–5.25	0.893	3.11	1.00–9.60	**0.049***
	Age	0.98	0.93–1.03	0.410	0.97	0.93–1.02	0.259	1.02	0.98–1.08	0.304	1.04	0.99–1.09	0.078
Anxiety (Yes)	Anxiety	8.50	1.87–38.54	**0.006***	0.97	0.36–2.61	0.952	17.15	2.01–146.20	**0.009***	2.33	0.86–6.32	0.098
	Gender	2.19	0.29–16.28	0.445	2.51	0.73–8.64	0.145	1.27	0.21–7.62	0.794	2.79	0.88–8.79	0.080
	Age	0.95	0.90–1.01	0.117	0.96	0.92–1.01	0.101	1.01	0.95–1.07	0.769	1.05	1.00–1.10	0.061
Depression (Yes)	Depression	2.83	0.62–13.00	0.182	3.36	1.14–9.95	**0.028***	7.30	0.84–63.61	0.072	1.79	0.69–4.63	0.229
	Gender	1.38	0.20–9.31	0.744	2.30	0.67–7.91	0.187	0.99	0.17–5.81	0.990	3.15	1.02–9.71	**0.045***
	Age	0.97	0.92–1.02	0.258	0.96	0.92–1.01	0.141	1.01	0.97–1.06	0.541	1.04	0.99–1.09	0.094
OB	OB	0.97	0.93–1.02	0.300	0.97	0.94–1.00	**0.035***	0.95	0.90–1.00	0.071	0.97	0.94–1.00	0.100
	Gender	0.79	0.10–6.05	0.823	2.05	0.59–7.06	0.256	0.38	0.05–3.12	0.370	2.87	0.91–9.00	0.071
	Age	0.98	0.93–1.03	0.381	0.96	0.92–1.01	0.105	1.03	0.98–1.08	0.283	1.04	0.99–1.09	0.112

MCS: Mental Component Summary; PCS: Physical Component Summary; OR: Odds Ratio; CI: Confidence Interval; OB: Occupational Balance.

These findings underline the need for personalised interventions that take into account both socio-economic factors and those specific to the work and cultural environment. It is recommended to implement stress management and mental health promotion programmes in work settings that address not only general stress, but also anxiety and financial problems, especially in younger and vulnerable workers. In addition, further research is suggested on the role of OB as a possible protective factor, assessing its potential to foster resilience in the workplace.

While the results obtained provide insight into the mental health and occupational balance conditions of Chilean and Spanish taxi drivers, placing them in a broader cultural and global framework helps to contextualize their meaning. For example, studies in Turkey have found that lower work-life balance is significantly associated with higher levels of stress and fatigue in taxi drivers (Göktaş, 2023), which is consistent with the effects observed in Spain, where taxi drivers reported a lower level of OB compared to their Chilean peers. In Argentina, it has been documented that taxi drivers face long working hours, emotional exhaustion and perceived low social recognition, conditions that also negatively impact their occupational balance and psychological well-being (López et al., 2021). Or in South Korea where work-family conflict had a significant impact on drivers' depression (Shin and Jeong, 2021).

One of the most notable differences between Chilean and Spanish taxi drivers could be influenced by cultural aspects such as the value that each society places on leisure and free time, work, rest and self-care. In the Chilean context, family networks continue to be a fundamental social support and one of the main spaces for sociability, which could contribute to a greater perception of meaning and significance in personal occupations linked to leisure time and daily life (PNUD, 2017). In the Spanish context, although family life and leisure have traditionally been valued, recent social and cultural transformations show an increasing individualization of everyday experiences. As a consequence, a certain fragmentation of family relationships has been observed, a lesser centrality of the family nucleus as a structuring space for everyday life, and a progressive loss of shared time, which could negatively affect the emotional well-being and occupational balance of workers in sectors with long working hours and little conciliation, such as the taxi industry (Roche Cárcel, 2021).

Although Spain and Chile have very different socioeconomic systems, we observe that taxi drivers in both countries face many of the same challenges: long working hours or job insecurity, and limited access to healthcare services are common problems that affect their well-being. Interestingly, Chilean drivers reported a better work-life balance and better mental health. This could be related to cultural aspects, such as stronger informal support networks or different ways of coping with stress. On the other hand, Spanish drivers showed better physical health, which could be related to better access to medical care or more structured job protection.

These types of differences suggest that both broader structures (such as laws or social benefits) and cultural values (around family, rest, or leisure) may influence how drivers experience their work and health. Recognizing these influences can inform the development of more effective support strategies for taxi drivers and similar occupational groups. Rather than relying solely on generalized interventions, policies should be tailored to align with the specific social and cultural contexts in which these workers live and operate.

4.1. Strengths and limitations

This study has several limitations. First, the sampling does not guarantee statistical representativeness of the assessed sample. Moreover, there was a low participation rate. In the case of Zaragoza, it was 6.58 % and in Valparaiso it was 1.82 %. Second, there was a lack of comparable studies focusing on taxi drivers that could allow us to compare our findings. Lastly, the use of varied instruments to measure the same characteristics hinders comparison and understanding of the variables that affect taxi drivers' health.

Nonetheless, this is the first study to explore the relationship between QoL, mental health, and OB in the taxi driver population. It also examines two countries—Chile and Spain—that have not previously been investigated in terms of mental health and OB, providing deeper insight into how working conditions impact individuals' health. A further strength is the use of standardized instruments, which can be easily replicated across diverse socio-demographic groups. Additionally, the study establishes associations between QoL, mental health, and OB among taxi drivers, a population for which there is limited existing literature.

4.2. Implications and recommendations

These results highlight the urgent need to design interventions that consider both individual and job-specific factors for taxi drivers.

- Implement mental health promotion programmes in taxi cooperatives and associations or encourage the creation of mutual help groups.
- Develop public policies that promote access to spaces for self-care, giving value to leisure as a necessity for mental health and quality of life.
- Incorporate tools for routine self-assessment of mental health in the workplace, with a preventive approach.
- Consider interventions differentiated by socio-cultural context, as perceptions of well-being and work vary according to the social and economic norms of each country.

Future studies could consider broader comparisons, including north-south contexts, with different occupational systems and social determinants of health, which would allow for the identification of universal or contextual patterns in the occupational experience of taxi drivers. This approach would also allow for the development of more specific and culturally sensitive recommendations for the design of public health interventions and occupational wellness programmes in the informal and professional transport sector.

5. Conclusion

This study highlights significant differences in mental health, QoL and OB between taxi drivers in Chile and Spain, showing that working conditions have an important influence on their overall well-being. Chilean taxi drivers reported higher levels of anxiety and stress, although they showed better OB and a more favourable perception of their mental health compared to their Spanish peers.

Although both groups face work challenges that affect their mental health, Chilean taxi drivers seem to manage their time and activities better, achieving a better balance between work, home, rest and leisure. In contrast, Spanish taxi drivers reported better physical health, but less satisfaction in terms of mental health and balance between their different occupations.

These findings underline the need to implement public health and labour policies that comprehensively address the well-being of taxi drivers, focusing not only on improving physical working conditions, but also on providing psychological support and health promotion programmes. A holistic approach that considers both physical and mental health, as well as occupational balance, could significantly improve the quality of life of these workers in both countries.

CRediT authorship contribution statement

Marta Marín-Berges: Writing – original draft, Software, Methodology, Investigation, Data curation. **Pablo A. Lizana:** Writing – review & editing, Software, Methodology, Formal analysis, Data curation, Conceptualization. **Valentina Marroquín-Pinochet:** Writing – review & editing, Software, Formal analysis, Data curation. **Valeria Osorio-Paredes:** Writing – review & editing, Formal analysis, Data curation. **Isabel Iguacel:** Writing – review & editing, Validation, Supervision, Methodology, Investigation, Conceptualization. **Alejandro Gómez-Bruton:** Writing – review & editing, Supervision, Project administration, Methodology, Investigation, Data curation, Conceptualization.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix

Table A.1
Associations between the mental and physical components of QoL and sociodemographic variables, presence of stress, anxiety, depression, and perception of OB by country.

	MCS – Chile (<p50)		MCS – Spain (<p50)		PCS – Chile (<p50)		PCS – Spain (<p50)	
Variable (reference)	OR (95 % CI)	*p*	OR (95 % CI)	*p*	OR (95 % CI)	*p*	OR (95 % CI)	*p*
Gender (female)	1.46 (0.24–8.93)	0.681	2.61 (0.79–8.65)	0.116	0.64 (0.12–3.52)	0.613	3.01 (1.01–8.96)	**0.048***
Age (continuous)	0.97 (0.93–1.02)	0.323	0.96 (0.92–1.00)	0.078	1.02 (0.98–1.07)	0.314	1.03 (0.99–1.08)	0.176
Civil status (single)	1.88 (0.54–6.50)	0.319	0.73 (0.29–1.84)	0.502	0.95 (0.30–3.02)	0.934	1.36 (0.53–3.48)	0.514
Number of children (continuous)	1.09 (0.68–1.74)	0.715	1.10 (0.74–1.62)	0.642	1.14 (0.74–1.75)	0.540	1.12 (0.75–1.67)	0.574
Education (primary and secondary)	0.39 (0.12–1.31)	0.129	1.16 (0.54–2.53)	0.699	0.66 (0.08–5.02)	0.685	1.18 (0.47–2.94)	0.728
Perception Financial status (unsatisfactory)	0.86 (0.26–2.80)	0.799	3.26 (1.20–8.87)	**0.021***	1.31 (0.45–3.80)	0.620	3.25 (1.32–8.02)	**0.010***
Workshifts (mixed and nocturnal)	2.93 (0.17–50.00)	0.458	1.90 (0.91–3.99)	0.088	Omitted**	–	1.34 (0.63–2.82)	0.445
Hours of work per day (≥9h)	1.25 (0.35–4.43)	0.730	1.31 (0.31–5.55)	0.706	0.95 (0.30–3.02)	0.934	0.63 (0.15–2.64)	0.525

(*continued on next page*)

Table A.1 (*continued*)

	MCS – Chile (<p50)		MCS – Spain (<p50)		PCS – Chile (<p50)		PCS – Spain (<p50)	
Variable (reference)	OR (95 % CI)	*p*	OR (95 % CI)	*p*	OR (95 % CI)	*p*	OR (95 % CI)	*p*
Years working as a taxi driver (continuous)	0.97 (0.91–1.03)	0.320	0.98 (0.96–1.03)	0.887	1.01 (0.96–1.06)	0.755	1.02 (0.98–1.05)	0.417
Total working years (continuous)	0.97 (0.94–1.01)	0.217	0.95 (0.91–0.99)	**0.023***	1.00 (0.97–1.04)	0.991	1.02 (0.98–1.06)	0.346
Other Jobs (yes)	1.54 (0.39–6.14)	0.536	1.90 (0.46–7.74)	0.371	1.46 (0.38–5.57)	0.578	0.15 (0.19–1.25)	0.080
Stress (continuous)	4.37 (1.19–16.04)	**0.026***	4.60 (1.60–13.21)	**0.005***	3.19 (0.78–13.06)	0.107	1.60 (0.67–3.82)	0.286
Anxiety (continuous)	4.86 (1.36–17.36)	**0.015***	1.37 (0.55–3.45)	0.501	17.37 (2.09–144.01)	**0.008***	2.15 (0.87–5.33)	0.099
Depression (continuous)	2.18 (0.52–9.15)	0.286	3.72 (1.28–10.80)	**0.016***	7.92 (0.93–67.58)	0.059	1.73 (0.70–4.29)	0.232
OB (continuous)	0.97 (0.93–1.02)	0.250	0.96 (0.93–0.99)	**0.019***	0.97 (0.93–1.01)	0.147	0.97 (0.94–1.00)	0.057

Omitted**: Analyses could not be performed for this variable because most participants (96 %) were in the same group (Daytime shift).
MCS: Mental Component Summary; PCS: Physical Component Summary; OR: Odds Ratio; CI: Confidence Interval; OB: Occupational Balance.
OR: Odds Ratio.

Data availability

Data will be made available on request.

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