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LIFESTYLE AND HEALTH PROMOTION AMONG CHILEAN CONSTRUCTION WORKERS: A STUDY BASED ON THE HEALTH-PROMOTING LIFESTYLE PROFILE II

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Abstract

Unhealthy behaviours such as alcohol and tobacco consumption, overweight, and obesity can impact job performance through absenteeism and work limitations. This study assessed the lifestyles and health promotion of construction workers in a Chilean company using the Health-Promoting Lifestyle Profile II (HPLP II). The objective was to evaluate health responsibility, physical activity, nutrition, stress management, interpersonal relationships, and spiritual growth, identifying critical areas affecting workers' well-being and productivity.

A descriptive, cross-sectional study was conducted with 43 workers selected through convenience sampling. Data were collected using the HPLP II and a sociodemographic and lifestyle questionnaire, in a controlled setting that ensured confidentiality and obtained informed consent from participants. Descriptive and inferential statistical analyses were performed, including correlation tests to examine relationships between anthropometric variables (weight, height, waist circumference, and neck circumference) and HPLP II subscales.

Results showed low levels in nutrition, physical activity, and health responsibility, with 16.28% of workers classified as "Very Poor" in nutrition and 39.53% in the same category for physical activity and 30.23% in health responsibility. Stress management was more balanced, while interpersonal relationships and spiritual growth exhibited greater dispersion. Mild but statistically significant correlations were found between BMI and interpersonal relationships ($r = -0.35$, $p = 0.02$), smoking and spiritual growth ($r = -0.40$, $p = 0.028$), and working hours and spiritual growth ($r = 0.32$, $p = 0.039$). No significant correlations were observed among the other variables analysed.

Findings highlight the need for targeted health promotion strategies to improve nutrition, exercise, and self-care. These interventions could help prevent chronic diseases, enhance productivity, and improve construction workers' quality of life.

Keywords: construction workers, health promotion, lifestyle, occupational health, productivity.

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1. Introduction

A major concern in the construction industry worldwide is productivity. Various factors, including workers' health and well-being, can significantly influence this key outcome. For example, worker productivity can be affected by illness, injury, and factors such as obesity, smoking, disability, or caregiving responsibilities [1]. Similarly, [2] indicate that health conditions, especially fatigue, insufficient sleep, musculoskeletal pain, common colds or flu, and mental health problems, are associated with substantial losses in labour productivity.

The construction sector is a key economic driver in many countries and constantly evolves with new technologies. However, despite this progress, construction workers often operate under harsh conditions that involve continuous physical effort and challenging environmental factors [3]. Workplace well-being encompasses physical and psychological dimensions of work life, such as safety, job

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satisfaction, and organizational climate [4]. Unfortunately, workers frequently perceive construction work as unsatisfactory due to a combination of job demands, individual factors, lifestyle habits, and pre-existing health conditions [3]. All these factors influence workers' absenteeism and presenteeism. In fact, [5] found that socioeconomic, physical, and mental health factors significantly shape absenteeism and presenteeism among Malaysian private-sector employees.

Given the growing importance of health and well-being in the workplace, it is essential to assess the status of construction workers to develop effective strategies that promote healthier lifestyles and improve key health-related indicators. Studying these aspects can provide the foundation for designing interventions that enhance workers' personal and professional quality of life, an improvement that could positively influence job performance and, ultimately, the productivity of the construction projects in which they are involved. In this context, the present study examining the lifestyle patterns and health promotion practices of construction workers from a Chilean company.

The following sections present the research methodology, and the main results obtained. Finally, we offer recommendations for future research in this field and conclude with key insights from the study.

2. Health promotion models

There are multiple approaches to measuring worker well-being and workplace health. One approach is objective, focusing on quantifiable socioeconomic attributes such as education, employment status, physical health, access to social security, home ownership, and income. The other is subjective, emphasizing workers' perceptions and experiences of their well-being, particularly relevant in labour-intensive sectors like construction [6]. Various validated instruments are commonly employed in assessing health-related lifestyle behaviours that contribute significantly to overall well-being, including the FANTASTIC checklist, EVS, and the HPLP-II [7,8]. Among these, the HPLP-II is one of the most widely used tools for evaluating health-promoting behaviours in diverse populations. The instrument is available in English and Spanish and consists of 52 items across six subscales: health responsibility, physical activity, nutrition, spiritual growth, interpersonal relationships, and stress management [7].

3. Health and well-being in construction workers

A study conducted among construction workers in the Metropolitan Region of Chile found that 82% of participants were overweight or obese, a higher percentage than the 67% reported by the 2009 National Health Survey (NHS) or Encuesta Nacional de Salud (ENS). Physical inactivity affected 86% of the workers, compared to 84% reported in the 2009 NHS and 93% in the 2010 WEH study. Additionally, 41% of the workers were smokers, and those under 25 years of age consumed more calories than older age groups. Diets were characterized by a high intake of carbonated beverages, bread, and red or salted meats, along with a low consumption of fruits, vegetables, legumes, and fish. While 77% of participants reported snacking in the afternoon, only 25% regularly ate dinner. Lunch was typically consumed at a fixed time, considered nutritious, and was usually prepared by a family member. Although participants reported high levels of satisfaction with their work, family life, and overall life, satisfaction with their personal health and physical fitness was significantly lower [9].

Supporting this trend, in a previous review of the health status of construction workers from various countries, the authors identified a high prevalence of non-communicable diseases such as diabetes, hypertension, and obesity. These conditions increase workers' vulnerability to complications including higher absenteeism, reduced physical capacity, and a heightened risk of workplace injuries [10]. This concern is not limited to specific regions but represents a broader global issue affecting the health and safety of construction labor forces.

4. Research goals and objectives

The research goal was to determine the lifestyle and health promotion practices of construction workers from a Chilean company using the Health-Promoting Lifestyle Profile II (HPLP II) developed by Kerr and Sechrist.

The specific objectives of this study are to analyse the quality of workers' diets, identify nutrient intake patterns and their relationship to overall health, describe the frequency and type of physical activity

performed by workers, as well as its impact on their health and well-being, investigate the strategies workers use to cope with work-related stress and their effectiveness in promoting mental health and assess the prevalence of tobacco, alcohol, and other substance use, and its relationship with lifestyle and occupational health. The study's main limitations are related to its small sample size and the use of convenience sampling, which may affect generalizability. Furthermore, since the respondents self-reported data, this may introduce response bias. Lastly, the cross-sectional design used in the research prevents the analysis of changes over time.

5. Methodology

A descriptive, cross-sectional study was conducted. The study involved construction workers from Bravo Izquierdo who participated in one project of this company. The sample was selected by convenience, as the company provided the participant database.

Data Collection Instruments:

1. Health-Promoting Lifestyle Profile II (HPLP II): This instrument assessed behaviours across six dimensions: health responsibility, physical activity, nutrition, stress management, interpersonal relationships, and spiritual growth. Each dimension was classified into four categories based on the obtained percentiles: Very Poor (0–25%), Poor (25–50%), Fair (50–75%), and Good (75–100%).
2. Sociodemographic and Lifestyle Questionnaire, which consisted of the following four parts: (1) sociodemographic data: Age, gender, educational level, marital status, and place of residence (whether living in a rural area or the city); (2) work conditions that include description of tasks performed (frequency and types) and environmental conditions at work; (3) lifestyle data including tobacco use (frequency and quantity), alcohol consumption (frequency and quantity) and living situation (whether the participant lived with family or alone, and whether their family lived in the same location); and (4) anthropometric data: weight, height, and Body Mass Index (BMI).

The research procedure consisted of two main phases. In the Data Collection phase, the questionnaire and the HPLP II were administered in a controlled environment, ensuring participant confidentiality and informed consent. In the Data Analysis phase, descriptive and inferential statistical techniques were applied to analyse the collected data. Correlation and regression analyses were used to identify relationships between the various factors. The normality of the continuous variables was assessed using the Shapiro-Wilk test. Most variables demonstrated a normal distribution ($p > 0.05$), except for construction experience, working hours, physical activity, nutrition, and spiritual growth, which showed significant deviations from normality ($p < 0.05$). Therefore, Spearman's rank correlation coefficient was used for the association analyses.

6. Results

To achieve the research goals, the study was conducted involving 43 workers from Bravo Izquierdo, a prominent Chilean construction company with over 50 years of experience, recognized for its nationwide presence. It specializes in educational, institutional, residential, and industrial projects, strongly focusing on quality, innovation, and sustainability.

The average work experience in the construction sector was 16.27 years (SD: 11.23), ranging from 0.5 to 48 years. The mean weekly working hours were 51.98 (SD: 10.00), ranging from 14 to 72 hours per week. Regarding concerning lifestyle habits, 32.56% of the workers reported being current smokers, and 46.51% reported alcohol consumption. Most participants (93.02%) lived with family members. Regarding anthropometric characteristics, the mean body mass index (BMI) was 28.13 kg/m² (SD: 5.15). Based on BMI classification, 41.86% of participants were categorized as obese, 30.23% as overweight, and 27.91% as normal weight (Table 1).

Table 1. Sociodemographic, occupational, lifestyle, and anthropometric characteristics of workers from Bravo Izquierdo Company (n = 43).

Characteristic	Value
Age (years) - mean (SD)	46.07 (12.98)
Male gender (%)	93,02
Female gender (%)	6,98
Educational level: Completed secondary education (%)	37,21
Educational level: Incomplete secondary education (%)	23,26
Educational level: Incomplete primary education (%)	11,63
Educational level: Completed primary education (%)	9,30
Educational level: Completed higher education (%)	6,98
Educational level: Technical higher education (%)	4,65
Marital status: Single (%)	53,49
Marital status: Married (%)	44,19
Marital status: Divorced (%)	2,33
Urban Residence (%)	100
Construction work experience (years) - mean (SD)	16.27 (11.23)
Weekly working hours – mean (SD)	51.98 (10.00)
Current Smoker (%)	32,56
Alcohol consumption (%)	46,51
Living with family members (%)	93,02
Body Mass Index (BMI) (kg/m²) - mean (SD)	28.13 (5.15)
Normal weight (%)	27,91
Overweight (%)	30,23
Obesity (%)	41,86 +

Note: Continuous variables are presented as mean and standard deviation (SD), and categorical variables as percentages. Urban residence was defined according to the territorial classification of the Metropolitan Region of Chile.

The results for each dimension of the instrument indicate that regarding Health Responsibility, 30.23% of workers were classified as Very Poor, 20.93% as Poor, 30.23% as Fair, and 18.60% as Good. In the dimension of Physical Activity, 39.53% were categorized as Very Poor, 34.88% as Poor, 18.60% as Fair, and only 6.98% as Good.

For the Nutrition dimension, 16.28% were classified as Very Poor, 34.88% as Poor, 16.28% as Fair, and 32.56% as Good. Regarding Spiritual Growth, 13.95% were categorized as Very Poor, 16.28% as Poor, 34.88% as Fair, and 34.88% as Good.

More than half of the workers were classified as Very Poor or Poor in the Stress Management dimension. Finally, for Interpersonal Relationships, 6.98% of workers were categorized as Very Poor, 25.58% as Poor, 51.16% as Fair, and 16.28% as Good.

The association between sociodemographic, occupational, lifestyle, and anthropometric variables and the six dimensions of the HPLP-II was analyzed using Spearman's correlation coefficient. Mild but statistically significant correlations were identified between body mass index (BMI) and interpersonal relationships ($r = -0.35$, $p = 0.02$), indicating that a higher BMI was associated with lower quality interpersonal relationships. Similarly, being a smoker was negatively correlated with spiritual growth ($r = -0.40$, $p = 0.028$). Finally, longer working hours were positively associated with spiritual growth ($r = 0.32$, $p = 0.039$). No significant correlations were observed among the other variables analyzed.

7. Discussion

The findings of this study reveal three critical areas that affect the well-being of construction workers: low health responsibility, insufficient physical activity, and inadequate nutritional planning. First, workers demonstrated low levels of health responsibility, often seeking medical attention only when strictly necessary. To address this, tools for self-assessment could be implemented to help identify when medical consultation is needed. Additionally, improving health communication channels through more engaging, non-traditional methods and establishing notification systems for regular medical checkups may support early intervention. Second, physical activity among workers was found to be low. To improve this, it is necessary to design muscle-strengthening programs based on job-specific physical demands. Ergonomic data could inform the development of personalized exercise routines, while wearable devices or mobile apps could help monitor physical activity levels in real time. Third, no nutritional planning is adapted to the energy demands of workers' specific tasks. Addressing this gap involves conducting studies to identify caloric needs according to the physical effort required in each role and designing tailored meal or snack plans. A digital platform could assist in recommending appropriate food options based on job characteristics, complemented by a workplace distribution network for healthy snacks. These proposals are aligned with what was indicated by [11] regarding the importance of workplace health promotion programs to improve various aspects of workers' health. It is expected that these interventions could help prevent chronic diseases, enhance productivity, and improve construction workers' quality of life.

8. Conclusion

This study highlights significant challenges in the lifestyles and health behaviours of construction workers in Chile. The results show that many workers exhibit low engagement in preventive health practices, limited physical activity, and inadequate dietary habits, which can negatively impact their well-being and job performance.

Addressing these issues requires implementing workplace health promotion programs tailored to the physical demands and realities of construction projects. Recommended actions include developing personalized nutrition and exercise plans, incorporating digital tools to monitor progress, and fostering a culture of self-care and early medical consultation. These strategies could help prevent chronic diseases, increase labour productivity, and improve workers' quality of life.

While this study provides valuable insights into construction workers' current health and well-being, its limitations, such as the small sample size, non-probabilistic sampling, and reliance on self-reported data, should be considered when interpreting the results. Future research should expand the sample, incorporate longitudinal designs, and use qualitative methods to understand better workers' perceptions and barriers to adopting healthier lifestyles.

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