

# Global Prevalence of Overweight and Obesity Among Healthcare Professionals and the Effectiveness of Workplace-Based Interventions in Reducing BMI: A Literature Review

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## Abstract



### Background

Overweight and obesity represent a growing global public health concern that extends deeply into the healthcare workforce. Healthcare professionals, despite their professional health knowledge, are increasingly affected by excess body weight due to unique occupational stressors. This literature review examines the global prevalence of overweight and obesity among healthcare professionals and evaluates the effectiveness of evidence-based workplace-based interventions in reducing BMI in this population.

### Methods

A structured literature search was conducted across PubMed, EMBASE, and Web of Science using predefined search terms and Boolean operators. Eligibility criteria were defined using the PICOS framework. Five studies met the inclusion criteria and were incorporated into the final synthesis.

### Results

Prevalence studies revealed a global overweight prevalence of 31.2% and obesity prevalence of 16.3% among nurses across 29 countries. Multi-component workplace interventions combining dietary modification, physical activity, and behavioral coaching demonstrated clinically meaningful BMI reductions.

### Conclusions

Overweight and obesity are highly prevalent among healthcare professionals globally. Structured workplace-based interventions are effective in reducing BMI. Healthcare institutions should prioritize evidence-based occupational health programs tailored to the specific needs of their workforce.

**Keywords:** Obesity; overweight; BMI; healthcare professionals; workplace intervention; occupational health; nurses; physicians.

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Introduction

Overweight and obesity represent one of the most pressing public health challenges of the twenty-first century. According to the World Health Organization -2022, approximately 2.5 billion adults worldwide were classified as overweight in 2022, of whom over 890 million were living with obesity figures that have more than doubled since 1990 [1]. The World Obesity Federation (2024) further estimates that nearly three billion people are currently living with either overweight or obesity globally, underscoring the scale and urgency of the crisis [2].

While much attention has been directed toward the general population, a growing body of evidence indicates that healthcare professionals including nurses, physicians, physiotherapists, and allied health workers are themselves significantly affected by excess body weight. Evidence suggests that between 58% and 65% of healthcare professionals may be classified as overweight or obese [3]. This is particularly paradoxical given that these individuals are trained health promoters who routinely counsel patients on weight management, nutrition, and physical activity. The coexistence of professional health expertise and personal weight challenges reflects the powerful influence of occupational and environmental factors that transcend individual knowledge. Healthcare professionals face a distinct constellation of workplace risk factors that predispose them to weight gain, including rotating shift schedules, extended working hours, high levels of occupational stress, emotional exhaustion, and limited access to nutritious food during clinical duties [4, 5]. These factors collectively disrupt circadian rhythms, hormonal regulation, and energy balance- all contributing to progressive weight gain over time. Beyond individual health consequences, obesity among healthcare workers has systemic implications, including increased absenteeism, reduced work capacity, and diminished credibility in promoting healthy lifestyles to patients [6].

This review seeks to address that gap by synthesizing available evidence on two interrelated dimensions: the global scope of overweight and obesity among

healthcare professionals, and the efficacy of workplace-based interventions designed to reduce BMI in this population. The research question guiding this review is: What is the global prevalence of overweight and obesity among healthcare professionals, and what is the effectiveness of evidence-based interventions in reducing obesity/ BMI in this population?

Methods

A structured literature review was conducted to address the research question and to evaluate the effectiveness of workplace-based interventions in reducing BMI among healthcare professionals. Although this study was not conducted as a formal systematic review, it employed a predefined and transparent search strategy, clearly defined eligibility criteria, and a structured screening process to enhance methodological reliability and reproducibility.

Search Strategy

To identify relevant studies, a multi-step search strategy was applied. Google Scholar was first used to gain a broad overview of existing literature. Subsequently, a structured search was conducted across PubMed, EMBASE, and Web of Science- databases selected for their comprehensive coverage of medical, nursing, and health sciences literature [7]. Search terms and synonyms were combined using Boolean operators "AND" and "OR" to refine results and minimize irrelevance [8].

| Table 1. Search Terms and Synonyms |                               |                                                     |
|------------------------------------|-------------------------------|-----------------------------------------------------|
| Category                           | Primary Term                  | Synonyms                                            |
| Prevalence                         | Prevalence                    | Incidence, Burden                                   |
| Obesity                            | Obesity                       | Overweight, Excess weight, Adiposity, BMI           |
| Healthcare Professionals           | Healthcare professionals      | Healthcare workers, Health personnel, Medical staff |
| Workplace-Based Interventions      | Workplace-based interventions | Occupational health programs, Worksite intervention |

The final search string was structured as follows: (prevalence OR incidence OR burden) AND (obesity OR overweight OR excess weight OR adiposity OR BMI) AND (healthcare professionals OR healthcare workers OR health personnel OR medical staff) AND (workplace-based interventions OR occupational health programs OR worksite intervention)

### Inclusion and Exclusion Criteria

The PICOS framework was used to guide eligibility criteria [9]. Only peer-reviewed studies published in English between 2016 and 2026 were considered. The following table presents the full inclusion and exclusion criteria:

**Table 2. Inclusion and Exclusion Criteria According to the PICOS Framework**

| PICOS Element    | Inclusion                                                                                                                                | Exclusion                                                                                               |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Population (P)   | Nurses, physicians, physiotherapists and allied health professionals in clinical or other healthcare settings; adults ( $\geq 18$ years) | Students in these professions, retired or non-practicing medical staff, and individuals $\leq 17$ years |
| Intervention (I) | Interventions aimed at reducing overweight or obesity; healthy lifestyle promotion                                                       | Interventions conducted outside workplace settings; pharmacological or surgical interventions           |
| Comparison (C)   | No predefined comparator; focus on identifying and evaluating different strategies                                                       | —                                                                                                       |
| Outcome (O)      | BMI, body weight (kg), weight change                                                                                                     | Studies without measurable outcomes                                                                     |
| Study Design (S) | RCTs, experimental studies, systematic reviews, meta-analyses, and peer-reviewed articles                                                | Case studies, expert interviews, publications without full text, and non-peer-reviewed articles         |

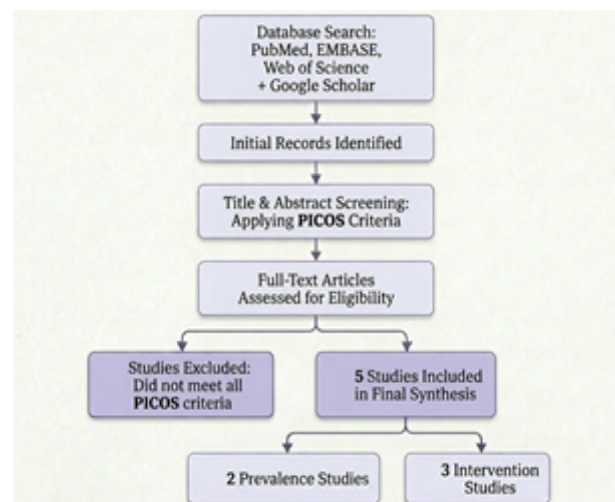
### Study Selection and Data Extraction

All identified articles were screened by title and abstract, followed by full-text assessment. Only studies fulfilling all eligibility requirements were included. Five studies met the inclusion criteria. Extracted data included author, year, country, study design, sample size, setting, intervention description, measurement instruments, outcomes, and main results. As this study is based exclusively on previously published literature, neither informed consent from participants nor approval by an ethics committee was required.

## Results

### Study Selection Overview

The screening process and study selection flow is illustrated in the diagram below:



**Figure 1. Study Selection and Screening Process**

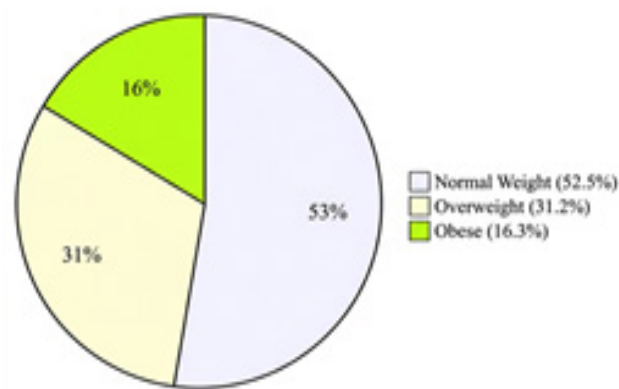
### Prevalence of Overweight and Obesity Among Healthcare Professionals

The two prevalence studies confirmed that overweight and obesity are widespread among

healthcare professionals globally. *Yilmaz et al* conducted a systematic review and meta-analysis including 83 studies representing 158,775 nurses across 29 countries, reporting a global overweight prevalence of 31.2% (95% CI: 29%–33.5%) and an obesity prevalence of 16.3% (95% CI: 13.7%–19.3%) among nurses [10]. *Zhao et al.* further highlighted that the escalating prevalence significantly affects both individual health and healthcare delivery quality [11]. Broader estimates suggest that 58%–65% of healthcare professionals may be classified as overweight or obese [3].

The following diagram illustrates the global prevalence distribution among nurses:

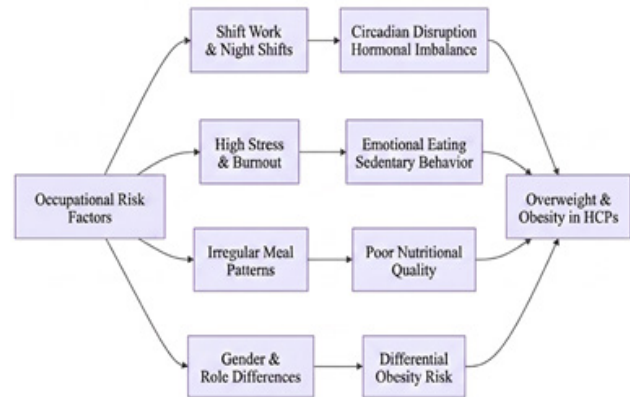
Key occupational risk factors identified across



**Figure 2. Global Weight Status Distribution Among Nurses [10]**

prevalence studies included the following: Shift work and night shifts, associated with circadian rhythm disruption and hormonal dysregulation [4] High psychological stress and emotional burnout, linked to emotional eating and sedentary recovery behaviors [4].

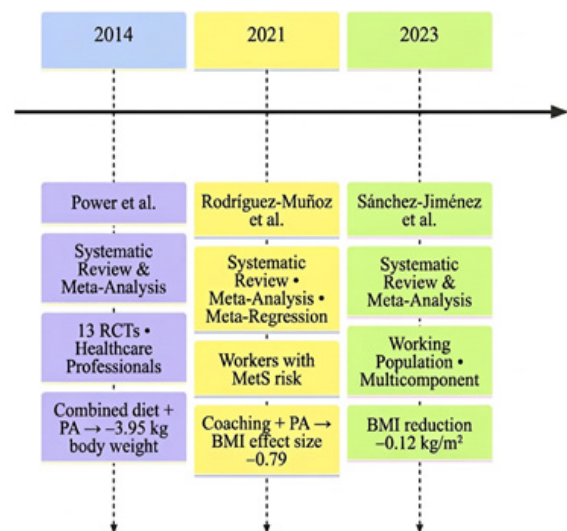
Irregular meal patterns and limited access to nutritious food within clinical environments [5]. Gender and professional role differences, with male healthcare workers more frequently classified as overweight and female workers more frequently classified as obese in certain regional contexts [6]. The following diagram summarizes the key occupational risk pathways leading to obesity in healthcare professionals:



**Figure 3. Occupational Risk Pathways to Obesity in Healthcare Professionals**

### Effectiveness of Workplace-Based Interventions

Three intervention studies met the inclusion criteria. The following timeline summarizes the intervention



**Figure 4. Chronological Overview of Included Intervention Studies (2014–2023)**

studies chronologically:

*Power et al.* conducted a systematic review and meta-analysis of 13 RCTs evaluating workplace-based dietary and/or physical activity interventions targeting healthcare professionals. Meta-analysis demonstrated that combined dietary and physical activity interventions produced a body weight reduction of -3.95 kg (95% CI: -4.96 to -2.95 kg) versus controls at up to 12 months follow-up. Nine of the 13 studies reported statistically significant between-group differences [3].

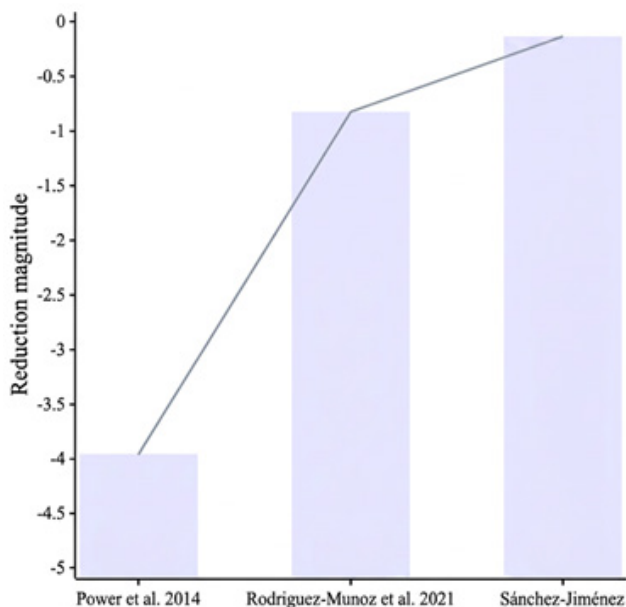
*Rodríguez-Muñoz et al.* conducted a systematic



review, meta-analysis, and meta-regression published in *Nutrients*, examining workplace diet and lifestyle interventions on metabolic syndrome risk factors. Coaching techniques and physical activity promotion yielded the greatest BMI reductions (effect size = -0.79,  $p = -0.009$ ; and -0.77,  $p = 0.034$ , respectively), and clinically significant improvements in HDL cholesterol [12].

*Sánchez-Jiménez et al.* conducted a systematic review and meta-analysis evaluating multicomponent interventions and physical activity programs in reducing BMI in the working population, showing a statistically significant overall BMI reduction of  $-0.12 \text{ kg/m}^2$  (95% CI: -0.22 to -0.02;  $p$ -value = 0.01), concluding that the multicomponent approach is an effective strategy for reducing obesity in working populations [13].

The following chart provides a visual comparison



**Figure 4. Weight and BMI Reduction Outcomes Across Intervention Studies**

of BMI/weight reduction outcomes across all three intervention studies:

The chart above demonstrates that while all three intervention studies reported meaningful reductions, *Power et al.* achieved the largest absolute body weight reduction (-3.95 kg), reflecting the impact of specifically targeting healthcare professionals with combined dietary and physical activity programs over

a structured 12-month follow-up period [3].

## Discussion

The findings of this review confirm that overweight and obesity are highly prevalent among healthcare professionals globally a pattern that persists despite this population's professional health knowledge. The paradox of clinically significant excess weight among health promoters underscores the powerful role of the occupational context in shaping health behaviors, independent of individual health literacy [4,6]. The prevalence data reveal that shift work is a particularly important occupational risk factor, disrupting circadian biology, increasing cortisol levels, impairing sleep quality, and promoting high-calorie food intake during off-hours [5]. *Yilmaz et al.* specifically noted that regional differences in obesity prevalence suggest that structural and cultural workplace factors play a significant moderating role and that policy-level responses must account for this variability [10]. The intervention evidence consistently supports the effectiveness of multi-component, workplace-delivered programs. *Power et al* [3]. demonstrated that combining dietary counseling and physical activity promotion produced weight reductions nearly twice as large as single-component approaches, a finding further supported by *Rodríguez-Muñoz et al.* and *Sánchez-Jiménez et al* [12, 13]. Behavioral coaching techniques were identified as a key active ingredient driving BMI reduction, suggesting that behavioral change theory should be explicitly embedded in future intervention designs [3]. The emerging role of digital health tools represents a particularly promising avenue for scaling workplace interventions. Technology-assisted platforms including mobile health applications, wearable activity trackers, and online behavioral coaching can overcome key structural barriers such as shift incompatibility and time constraints [6]. This review is subject to several limitations. The small number of included studies ( $n = 5$ ) limits generalizability. Heterogeneity across studies in terms of intervention design, duration,

sample characteristics, and outcome measurement tools restricts direct comparability. The absence of a formal meta-analysis means pooled effect sizes were not calculated within this review. Publication bias may also have influenced findings. Future research should prioritize longitudinal designs with longer follow-up periods, standardized outcome measures, and diverse international samples. Organizational-level enablers such as leadership support, protected time for physical activity, and healthy food access also warrant greater empirical attention [7].

## Conclusion

This literature review examined the global prevalence of overweight and obesity among healthcare professionals and evaluated the effectiveness of workplace-based interventions in reducing BMI. Drawing on five peer-reviewed studies, the review addressed a research question of considerable relevance to both public health and occupational medicine.

The evidence leads to two overarching conclusions. First, overweight and obesity are highly prevalent within the healthcare workforce globally, driven

by occupational stressors including shift work, psychological stress, and poor food environments that transcend professional health knowledge. [3, 10, 11] Second, structured multi-component workplace interventions effectively reduce BMI and improve cardiometabolic outcomes, with combined dietary, physical activity, and behavioral approaches yielding the most robust results [3, 12-16].

Healthcare institutions bear both an ethical and strategic responsibility to invest in evidence-based occupational health programs tailored to the specific challenges of their workforce. As emphasized by the World Health Organization-2022 [14] and the World Obesity Federation [2], tackling obesity requires systemic action at the organizational and policy level not merely individual behavior change. A healthier healthcare workforce is not only better equipped to deliver high-quality patient care but also serves as a more credible and effective advocate for healthy living within the communities it serves. Implementing targeted, sustainable workplace health interventions must be recognized as a clinical and institutional priority in the global response to the obesity epidemic.

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