KINGDOM OF SAUDI ARABIA
Northern Border University (NBU)
Journal of the North for Basic & Applied Sciences(JNBAS)
p - ISSN : 1658 -7022 / **e-ISSN:** 1658 - 7014
www.nbu.edu.sa
s.journal@nbu.edu.sa

Health Indicators and Health Satisfaction among University Employees: Insights and Implications for Occupational Health Practice.

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(**Received:** 7th July 2025; **Accepted:** 22nd September 2025)

Abstract
Introduction: Employees' health plays a crucial role in promoting an organization's productivity and achieving its goals. In universities, the impact of employees' health extends beyond personal outcomes, influencing the lives of students, and potentially compromising their quality of education.
Aim: To describe the health indicators and health satisfaction of Jazan University employees.
Methods: A cross-sectional survey was conducted among 393 employees from September to December 2023. Data were collected through an online survey and analyzed using IBM SPSS Statistics (V25.0).
Results: More than half of the participants (53.4%) reported having at least one chronic condition, and 72.5% were overweight, obese, or extremely obese, and 48.1% reported never engaging in exercise behaviors. On average, participants were moderately satisfied with their health (M = 3.64). Non-academicians were more likely to be satisfied with their health (M=3.73, range 1-5) (p=.009), more likely to be smokers (80%) (p<.001), and less likely to engage in routine physical exercise (0%) (p= .049) compared to academicians.
Conclusion: In alignment with Saudi Vision 2030, it is imperative that concerted efforts be made to promote and enhance the quality of employees' health. Universities must implement comprehensive wellness programs that effectively address the biopsychosocial health of their workforce.

Keywords: Health promotion; Risk management; Risk factors; workers well-being; Health determinants

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DOI: 10.12816/0062293

1. Introduction

According to the World Health Organization (WHO), health is more than just the absence of illness; it is a state of complete physical, mental, and social well-being (World Health Organization (WHO), 2021). Because the health of human capital is fundamental to the growth and sustainability of organizations, economies, and societies, it is increasingly being recognized as a strategic priority—not just a medical concern. A healthy workforce drives productivity, innovation, and resilience, making employee well-being a cornerstone of national development. In alignment with this understanding, Saudi Arabia's Vision 2030—the Kingdom's comprehensive roadmap for economic diversification and societal advancement—places significant emphasis on improving population health as a key pillar of national progress (Suleiman & Ming, 2025).

As part of Vision 2030, the Saudi government has launched a variety of transformative health sector reforms designed to enhance both preventive and therapeutic healthcare services. These initiatives include the expansion of primary healthcare centers, increased investment in digital health technologies, the promotion of health awareness campaigns, and efforts to shift the national healthcare model from treatment-based care to preventive, proactive care. The goal is not only to improve the quality of life for individuals but also to reduce the burden of chronic diseases, improve life expectancy, and enhance workforce productivity across all sectors. By prioritizing health in Vision 2030, Saudi Arabia acknowledges that human capital—comprising the knowledge, skills, and well-being of its people—is a vital driver of long-term development. This vision aligns with global trends that emphasize well-being economics, where the success of a country is increasingly measured not only by Gross Domestic Product, but also by the physical and mental health of its citizens. In this context, improving employee health—especially in critical sectors like higher education—is essential to ensuring that institutions are equipped to deliver high-quality education, conduct impactful research, and contribute effectively to national goals. Despite these efforts, there remains a pressing need to extend these health initiatives more directly to workplaces, including universities, where stress-related illnesses and occupational health risks are often overlooked. Integrating health promotion into institutional policies, fostering a culture of wellness, and supporting mental health services within academia will be crucial steps toward aligning the goals of Vision 2030 with the real needs of the country's workforce.

Health indicators such as smoking, physical activity, and the prevalence of chronic conditions are among the key priorities identified in Saudi Arabia's Vision 2030. These factors are recognized as critical determinants of individual and population health, with far-reaching implications for workforce productivity, healthcare costs, and the Kingdom's broader social and economic development(Chowdhury et al., 2021) . As Vision 2030 seeks to transform Saudi Arabia into a thriving, knowledge-based economy, promoting healthier lifestyles and addressing preventable health risks have become essential components of national strategy. Improving these health indicators through targeted public health interventions, workplace wellness programs, and supportive policy frameworks is not only vital for enhancing the well-being of the population but also for ensuring that the workforce—including those in higher education—is equipped to support the Kingdom's ambitious goals. In this context, universities play a pivotal role, both as institutions of learning and as large employers. Their contributions to Vision 2030 go beyond education and research; they must also serve as models for healthy, productive work environments.

Employee health and well-being in the university sector directly influence organizational performance, academic excellence, and the ability to attract and retain talent(Riza et al., 2025). Addressing health-related challenges among university staff—through preventive health measures, mental health support, and wellness promotion—has been identified as a key strategy for boosting both individual performance and institutional outcomes (Taweel, 2020; Biman et al., 2021; Rahman & Al-Borie, 2020). When universities prioritize staff well-being, they create conditions that support higher levels of engagement, creativity, and job satisfaction, all of which are crucial to fulfilling their educational missions.

Furthermore, a growing body of research supports the strong link between employee health and productivity. Studies have consistently shown that healthy employees are more likely to be productive, resilient, and actively contribute to both organizational goals and broader societal development (Centers for Disease Control and Prevention [CDC], 2022; HBR Analytic Services, 2013; Institute for Health and Productivity Studies, 2015). In contrast, poor health among employees—particularly in cognitively and emotionally demanding sectors like academia—can lead to reduced job performance, absenteeism, and long-term burnout(Lee, 2019). In today's rapidly evolving academic landscape, university employees face increasing demands, including continuous professional development, innovative teaching practices, interdisciplinary research, community outreach, and administrative responsibilities. These expectations, while essential for institutional advancement, can exert significant negative impact on employees' physical, psychological, and social well-being (Sanchez et al., 2019). Without adequate institutional support, these pressures may undermine the very goals that Vision 2030 seeks to achieve. Universities

that invest in employee health are not only contributing to national development objectives but are also building a more sustainable, high-performing, and human-centered academic environment(McDonald et al., 2021)

Literature Review

The available literature consistently highlights the profound impact of high work pressure on both academic and non-academic staff within tertiary institutions. Mounting workloads, administrative demands, performance expectations, and insufficient support systems contribute to a work environment that often places employees at significant risk for deteriorating health. Empirical studies show a strong statistical association ($p < .001$) between high occupational stress and a range of adverse physical health outcomes, including persistent headaches, obesity, hypertension, and even more serious conditions such as cardiovascular diseases (Isamail et al., 2013; Khalilzadeh et al., 2020; Liu et al., 2015). These physical health challenges can lead to increased absenteeism, reduced work efficiency, and a decline in overall institutional productivity.

In addition to physical health concerns, psychological consequences of prolonged work-related stress are equally alarming. Faculty and administrative staff exposed to sustained pressure are more prone to mental health disorders such as anxiety, chronic stress, depression, and burnout ($p < .001$). These conditions not only impair personal well-being but also erode professional effectiveness, interpersonal relationships at work, and the ability to mentor or support students effectively. Psychological distress in academic environments can create a ripple effect that hampers collaboration, reduces innovation, and diminishes the overall quality of academic output.

On a global scale, the economic and societal implications of these mental health issues are staggering. According to the World Health Organization (WHO, 2024), anxiety and depression lead to the loss of approximately 12 billion working days each year, amounting to a financial loss of around US$1 trillion in global productivity. This data emphasizes the urgent need for institutions—particularly in the education sector—to prioritize mental health and implement preventive measures. Fostering a healthier work environment not only benefits individual employees but also strengthens institutional resilience and academic excellence.

The impact of the health status of university employees extends well beyond individual consequences, influencing broader institutional and societal outcomes. In academic environments, university employees—particularly faculty members and administrative staff—are integral to delivering quality education, maintaining operational efficiency, and fostering a positive learning atmosphere. When their physical or mental health deteriorates, these essential functions are inevitably affected. For instance, poor health among university employees has been shown to negatively influence student performance, academic engagement, and the overall university environment. A study by Abdul Manaf et al. (2021) found that the compromised health of Malaysian university employees significantly disrupted their ability to fulfill academic responsibilities, which in turn adversely impacted students and their academic experiences. This cascade effect underscores how staff well-being directly correlates with the quality of education delivered and the success of educational institutions.

Despite the critical role universities play in shaping the intellectual, social, and economic landscape of a country, there is a notable lack of research focused on the health and well-being of university employees in Saudi Arabia. While Saudi universities are rapidly evolving in response to national development goals—such as those outlined in Vision 2030—employee well-being remains an underexplored area. The scarcity of studies in this domain poses a challenge for evidence-based policy-making and the implementation of health-supportive workplace practices. Without a comprehensive understanding of the health challenges faced by university staff in the Saudi context, it becomes difficult to design interventions that ensure their well-being, which ultimately affects the sustainability and quality of higher education in the region.

Considering that employees at academic institutions are the cornerstone of these organizations, exploring their health and well-being becomes imperative. In light of the paucity of literature in the context of an academic setting, the current study seeks to describe the health indicators and health satisfaction of Jazan University employees. It aims to: (1) describe the prevalence of health indicators and health satisfaction among employees of Jazan University and compare the results between academicians and non-academicians, (2) investigate the association between health indicators, health satisfaction, and sociodemographic factors among employees of Jazan University, and (3) investigate the impact of health indicators and sociodemographic factors on health satisfaction among employees of Jazan University.

2. Methods

This study employed a cross-sectional descriptive-analytical methodology. A cross-sectional approach seizes information from a heterogeneous sample at one point, thereby allowing for the assessment of associations between health indicators and health satisfaction among

employees of Jazan University. This kind of design helps detect patterns and relations without the connotation of causation. It is particularly appropriate for public health research targeting the identification of risk factors and disparities. The study was carried out between September and December 2023, utilizing the convenience sampling method among employees of Jazan University.

2.1 Sample

The sample size for this study was determined based on the total population of university employees, using a standard formula for calculating sample size from a finite population. The calculation was performed at a 95% confidence level, with a margin of error (α) set at 0.05, and assuming a population proportion (p) of 50%, a commonly used estimate when prior data on variability is unavailable. This conservative assumption maximizes the required sample size and ensures that the sample is sufficiently representative of the target population. The formula applied was:

Finite population correction formula: n'= (z^2 x p̂(1-p̂)/ε²)/(1+ (z^2 x p̂(1-p̂))/ε²N)

Where (z) is the z score (1.96), ε is the margin of error (5%), (p̂) is the population proportion (50%), and (N) is the population size (3846).

Based on this formula, the final calculated sample size required for the study was 393 participants, comprising both academic and non-academic university employees. The survey was distributed to all university employees, including academic faculty and administrative/support staff. Participation invitations were sent via official university email addresses, and further promoted through institution-affiliated social networking platforms, such as university-managed WhatsApp groups. This multi-channel dissemination strategy enhanced the survey's visibility and reach, while helping to maintain inclusiveness of the sampling process.

The voluntary and anonymous nature of the survey was clearly communicated to participants to encourage honest and accurate responses, thereby improving data reliability. Recruitment was concluded once the targeted sample size of 393 was achieved.

2.2 Ethical considerations

Approval was obtained from Jazan University's Ethical Committee (Approved no. REC-45/02/738). The goal and purpose of the study were outlined in the survey's cover letter. Participants were informed that their participation in the study was optional and anonymous, and their privacy was protected throughout the research.

2.3 Inclusion and exclusion criteria

Academic and non-academic employees 18 years old or older were invited to participate in the study. Employees on scholarship, maternity leave, sabbatical leave, or exceptional leave of more than two months were excluded.

2.4 Study materials

A self-administered anonymous survey comprising two sections was prepared and administered to the participants. Before the main study, a pilot test was conducted on a small subset of participants to obtain feedback regarding the questions' logical flow and clarity. After refining the questions, the survey was made available through official university email addresses and social networking to reach a maximum number of participants, and the response rates were tracked. After data collection was complete, the researchers cleaned the data and analyzed the responses. This systematic approach ensured that the survey was effective and reliable in gathering the appropriate information.

The first section of the survey contained the sociodemographic information of the participants, including sex, age, marital status, occupation type, and service duration. Occupation type was classified as either academic or non-academic. Academic employees are defined as individuals engaged primarily in teaching, research, or academic administrative roles, such as professors, lecturers, and demonstrators. Non-academic employees include those in supportive, clinical, technical, or administrative roles, such as clinicians (e.g., medical doctors working in university health services), lab technicians, IT staff, and administrative personnel. The job titles and functions were classified based on institutional employment categories provided by the university, while recognizing that there may be diverse educational backgrounds (e.g., IT or engineering degrees) within both groups.

The second section of the survey comprised variables pertaining to health indicators and health satisfaction. Health indicators included body mass index (BMI), smoking status, presence of chronic conditions, and physical activity. BMI was calculated by dividing each participant's body weight by the square of his or her height (kg/m2). BMI was then categorized based on the WHO BMI guideline (2000) (<1 8.5 kg/m2 is underweight, 18.5–24.9 kg/m2 is normal weight, 25.0 to 29.9 kg/m2 is overweight, 30.0 to 34.9 kg/m2 is obese, and ≥ 35 kg/m2 is extremely obese) (Ismail et al., 2013). Smoking status was measured using a single item indicating current smoking behavior. Current smoking was defined as Smoking at least 100 cigarettes or equivalent at the current time (WHO, 2013). This variable was measured using a dichotomous response (yes/no). Assessment of chronic conditions—such as diabetes, hypertension, or

hypercholesterolemia—was assessed based on a single, self-report item. Participants were asked "Have you received a medical diagnosis of diabetes, hypertension, or hypercholesterolemia, or are you currently taking medication for any of these conditions?" Responses were recorded as yes or no.

To evaluate the physical activity levels, the physical activity subscale of the Health Promoting Lifestyle Profile II (HPLP-II) was used (Walker et al., 1987) . This subscale consists of eight positively stated items, and the total score is calculated by considering the mean of these eight items. Total scores range from 1–4 (1 = never, 2 = sometimes, 3 = often, and 4 = routinely exercise), with higher scores indicating greater participation in physical activity. The validity and reliability of the physical activity subscale have been established in prior research for both English and Arabic versions (Al-Khawaldeh, 2014; Walker et al., 1987).

Health satisfaction was defined as the degree to which individuals feel satisfied with the state of their health (Ashgar, 2022). This variable was assessed based on a single question: "How satisfied are you with your health?" Participants were required to indicate their level of satisfaction on a 5□point scale ranging from 1 (completely dissatisfied) to 5 (completely satisfied).

Statistical analysis

Data were analyzed using IBM SPSS Statistics (V25.0). An independent sample t-test was used to compare mean differences between academicians and non-academicians for interval variables, and a chi-square test was used to examine associations between categorical variables. A two-tailed Pearson's correlation test was used at an α of .05 to assess the magnitude and direction of the associations between interval variables. Multiple regression analysis was conducted to measure the impact of health indicators and sociodemographic factors on health satisfaction among the employees of Jazan University. Statistical significance was set at $p < 0.05$.

3. Results

3.1 Sample characteristics

The mean age of the participants in this study was 42.42 years (SD = 6.19). Most were women (64.1%), married (81.7%), and academicians (61.1%). Table 1 presents the detailed demographic characteristics.

3.2 Health indicators and health satisfaction

More than half of the participants (53.4%) reported having at least one chronic condition, with hypertension (20.6%), high cholesterol (13.7%), and diabetes (13.0%) being the most commonly reported conditions. Most of the participants were non-smokers (96.2%), however, a significant proportion were overweight, obese, or extremely obese (72.5%), and nearly half had never engaged in exercise behaviors (48.1%). The mean (SD) for BMI of the participants was 29.14 (12.42), the mean (SD) for exercise participation was 2.05 (0.80), the mean (SD) for health satisfaction was 3.64 (0.93). Table 2 provides further details on health indicators and exercise behaviors.

3.3 Comparison of health indicators and health satisfaction between academicians and non-academicians

Health indicators and health satisfaction were compared between academicians and non-academicians. Non-academicians were more likely to be satisfied with their health (M=3.73, range 1-5) (p=.009), more likely to be smokers (80%) (p<.001), and less likely to engage in routine physical exercise (0%) (p= .049) compared to academicians. However, no significant differences were observed in chronic conditions (p = .436), BMI (p = .514), and exercise behaviors (p = .711).

3.4 Correlation between health indicators and health satisfaction

Pearson's r correlation coefficient was used to examine the relationships among intervale variables, and chi-square test was used for nominal variables. BMI was found to be significantly associated with age (r = .23, p < .001), sex (Eta= .02, p < .001), social status (Eta= .08, p < .001), job type (Eta= .03, p < .001), years of experience (r = .17, p < .001), presence of chronic conditions (Eta = .16, p < .001), and smoking status (Eta = .30, p <.001). Having chronic conditions was significantly associated with age (Eta= .06, p < .001), sex (phi = -.20, p < .001), years of experience (Eta= .03, p < .001), and BMI (Eta = .16, p < .001). Exercise behavior was found to be significantly associated with sex (Eta= .11, p < .001), social status (Eta= .25, p < .001), job type (Eta= .02, p < .001), and having chronic conditions (Eta= .09, p < .001).

Smoking status was significantly associated with age, (Eta= .05, p= .002) sex (phi = .27, p < .001), social status (phi= .16, p= .037), job type (phi =.17, p < .001), years of experience (Eta= .017, p < .001), BMI (Eta= .30, p < .001), having chronic conditions (phi =.19, p < .001), and physical exercise (Eta= .03, p < .001). Health satisfaction was significantly associated with sex (Eta= .23, p < .001), social status (Eta= .13, p= .009), job type (Eta= .19, p= .006), and having chronic conditions (Eta= .21, p= .003) (Table 3).

3.5 Effect of health indicators on health satisfaction

Multiple regression analyses was conducted to evaluate the effect of health indicators and demographic factors (age, sex, social status, job type, years of

experience, BMI, having chronic conditions, exercise behaviors, and smoking status) on health satisfaction. However, the model revealed a non-significant effect on health satisfaction ($F = 1.00$, $p = .438$). In addition, years of experience was the only variable that revealed a significant partial effect on health satisfaction ($t = -2.05$, $p = .041$).

4. Discussion

This study investigated key health indicators and overall health satisfaction among university employees, revealing a concerning pattern of poor health outcomes within the sample. Notably, 53.4% of respondents reported having at least one chronic disease, while 72.5% were classified as overweight or obese, and 48.1% engaged in insufficient physical activity. Despite these alarming statistics, overall health satisfaction was reported at a moderate level ($M = 3.65$ on a 5-point scale), indicating a possible disconnect between individuals' perceptions of their health and actual health status. These findings align with prior research conducted in a Malaysian public university, where similar patterns of physical inactivity and high prevalence of overweight and obesity were observed among academic and non-academic staff (Abdul Manaf et al., 2021). This consistency suggests that university employees, regardless of national context, may be particularly vulnerable to health risks due to sedentary job demands, high work-related stress, and limited opportunities for physical activity during the workday.

Furthermore, the current study found that chronic health conditions were significantly associated with sex, a trend consistent with national-level data. According to the Household Health Survey conducted by the General Authority for Statistics (2018), women in Saudi Arabia are 1.4% more likely than men to develop chronic conditions, pointing to possible gender-based disparities in lifestyle, healthcare access, or biological risk factors.

The health issues identified in this study reflect broader national and global public health challenges. Chronic non-communicable diseases (NCDs)—such as cardiovascular disease, diabetes, chronic respiratory conditions, and cancer—are the leading causes of mortality and healthcare expenditure worldwide. In Saudi Arabia, the burden of these diseases is particularly significant. According to the World Health Organization (WHO, 2021), chronic conditions accounted for 41 billion SAR, or 35.0% of total government health expenditure, in 2019. The mortality statistics are equally concerning: in 2020, nearly 20,000 deaths in the Kingdom were attributed to the four main chronic conditions—cardiovascular diseases (47.0%), diabetes (41.0%), chronic respiratory diseases (8.0%), and cancer (4.0%) (WHO, The Kingdom of Saudi Arabia, 2021).

These findings underscore the urgent need for targeted health interventions and workplace wellness strategies within the university setting. As universities are both knowledge hubs and major employers, they have a critical role to play in promoting healthier lifestyles, supporting disease prevention, and reducing the overall burden of chronic illnesses among their employees. Addressing these issues is not only a matter of individual health but also a strategic imperative for enhancing workforce productivity and achieving broader national development goals, such as those outlined in Saudi Vision 2030.

In the current sample, the prevalence of overweight and obesity was alarmingly high, reaching 72.5%. This is significantly higher than the national weighted prevalence of obesity (BMI $\geq$ 30) in Saudi Arabia, which stood at 24.7% in 2020, according to Althumiri et al. (2021). Within the study sample, 34.3% of participants met the criteria for obesity, indicating a substantially elevated health risk compared to the general population. This discrepancy may be attributed to the specific characteristics of university employees, who often engage in sedentary work, experience high levels of stress, and may lack time or access to regular physical activity, all of which are known contributors to weight gain.

Further analysis revealed that certain subgroups within the sample were at greater risk for elevated body mass index (BMI). Specifically, older adults, male, academicians, individuals with longer years of work experience, those diagnosed with one or more chronic diseases, and smokers were more likely to have higher BMIs compared to their counterparts. These findings align with existing literature, which identifies age, smoking, chronic illness, and occupational factors as significant predictors of overweight and obesity (Bonde & Viikari-Juntura, 2013). The accumulation of risk over time—whether through age-related metabolic changes, chronic disease comorbidity, or prolonged exposure to occupational stress—may partly explain these associations.

Previous studies have consistently shown that being overweight or obese, particularly when combined with other risk factors such as chronic disease, smoking, and physical inactivity, can significantly contribute to the decline of both physical and psychological health (Jia & Liu, 2021; Lavallee et al., 2021). The consequences include a higher risk for cardiovascular disease, type 2 diabetes, musculoskeletal problems, depression, and reduced quality of life. Moreover, these health conditions can lead to decreased work productivity, increased absenteeism, and greater healthcare costs, all of which have implications for both individual well-being and institutional efficiency (Alsalem & Alhaiz, 2021).

These findings underscore the urgent need for targeted health promotion programs within university settings, particularly those aimed at weight management, smoking cessation, chronic disease prevention, and lifestyle modification. By addressing these interconnected risk factors, institutions can play a proactive role in safeguarding employee health and supporting national efforts—such as those outlined in Saudi Vision 2030—to reduce the prevalence of lifestyle-related diseases and promote a healthier, more productive workforce.

On average, participants in the current study reported moderate satisfaction with their health, with a mean score of M = 3.64 (SD = 0.93) on a five-point scale. This level of self-reported health satisfaction suggests that, despite the presence of concerning health indicators such as overweight, chronic diseases, and physical inactivity, many individuals still perceive their overall health in a relatively positive light. This finding is consistent with data from the General Authority for Statistics (2018), which reported that 95.0% of Saudi adults rated their health as good, highlighting a widespread trend of favorable self-perceived health among the population, even when objective health indicators may suggest otherwise.

Prior research has demonstrated a strong correlation between self-rated health and various domains of well-being, including physical health status, mental health conditions, and cognitive functioning (Caramenti & Castiglioni, 2022). Self-perceived health is often used as a proxy for broader quality-of-life measures and is known to predict health outcomes such as morbidity and mortality. However, it remains a subjective measure, heavily influenced by individual expectations, personal experiences, cultural norms, and social comparisons.

Interestingly, the current study found that objective health indicators—such as BMI, presence of chronic disease, physical inactivity, and smoking status—did not significantly predict health satisfaction among participants. This suggests that health satisfaction is not always directly aligned with clinical or behavioral health measures, supporting the notion that it is a highly subjective and multidimensional construct. This disconnect may be due to psychological adaptation, differing personal thresholds for what constitutes "good health," or social influences that shape how individuals assess their own health relative to others.

While academicians are traditionally associated with core academic functions such as teaching, research, and publishing, recent evidence highlights a growing expansion in their professional responsibilities. As noted by Awang et al. (2021), the role of academicians increasingly includes administrative duties, participation in student development initiatives, engagement in community outreach, and continuous professional development activities. These additional obligations significantly extend their workload and may contribute to heightened levels of stress, time pressure, and work-life imbalance.

In the current study, academicians reported lower levels of health satisfaction compared to non-academicians, a finding that may be linked to the cumulative burden of their diverse responsibilities. The pressure to meet teaching targets, publish in reputable journals, secure research funding, fulfill committee obligations, and contribute to institutional governance may leave academicians with limited time or energy to attend to their personal well-being. However, when multiple regression analysis was conducted to evaluate the effects of various health indicators and demographic factors—including age, sex, social status, job type, years of experience, BMI, presence of chronic conditions, exercise behaviors, and smoking status—the model did not significantly predict health satisfaction. This suggests that while some individual factors may correlate with lower health satisfaction, their combined impact may not be sufficient to explain variation in health satisfaction when considered together. These findings are consistent with previous research indicating that role overload and work intensification are common stressors in academic environments, often contributing to mental fatigue and physical health deterioration (Halat et al., 2023).

Interestingly, despite their lower health satisfaction, academicians in this study were less likely to be smokers and more likely to engage in regular physical activity compared to their non-academic counterparts. This could be attributed to their higher levels of education and health literacy, which may positively influence health-related attitudes and behaviors. Academicians may be more aware of the long-term health risks associated with smoking and the benefits of physical exercise, prompting them to adopt healthier lifestyle practices even in the face of demanding schedules. However, the study found no significant differences between academicians and non-academicians across other key health indicators, such as the prevalence of chronic disease, BMI, or overall physical inactivity. This suggests that while some behavioral differences exist—particularly in smoking and exercise habits—the broader health status of both groups is similarly affected by shared workplace conditions and systemic challenges, such as sedentary work environments, limited institutional support for wellness, and cultural norms surrounding health practices.

4.1 Limitations and strengths

The limitations of this study need to be acknowledged. First, the cross-sectional nature of the research design and the absence of specific measures, such as assessing employees' responsibilities and social and psychological health measures, were not taken into consideration. Second, the sample was not nationally representative, as it only included participants from a single public university; thus, the generalization of the study's findings is limited. Third, given the voluntary nature of survey participation, there is a potential for responder bias, whereby individuals with a heightened interest in health and wellbeing—or those experiencing related concerns—may have been more inclined to participate. This may limit the generalizability of the findings to the broader university employee population. Lastly, the use of a single item to measure health satisfaction restricted the ability to explore its specific attributes. Nevertheless, the single item has been used to measure health satisfaction in numerous prior studies and has proven to have strong psychometric properties (Ashgar, 2022).

Despite these limitations, the study followed the guidelines for reporting observational studies (Von Elm et al., 2008) to strengthen the validity of the findings. To our knowledge, ours is the first study to describe health indicators and health satisfaction among university employees in Saudi Arabia. Our findings indicate that several health risks are prevalent among university employees. The data from this study may guide university management to develop preventive programs and initiatives to promote the health of their employees. These findings can also assist nursing researchers and healthcare professionals promote the quality of life in the workplace.

Future research should include an interventional and longitudinal approaches and consider a more robust research design with comparative groups, which would offer a more explanation and wider view of the phenomenon. Incorporating explicit measures of social and psychological health in future research is needed to provide a more comprehensive assessment of overall wellbeing. Universities' ability to operate effectively, grow sustainably, and achieve their intended goals require them to prioritize promoting employees' health.

4.2 Implications for Occupational Health Practice

Employees play a crucial role in the functioning of universities. As universities compete for excellence, their employees are facing increased pressure to meet stakeholders' demands. This study highlights several key implications for promoting the health of university employees. Interventions aimed at reducing risk factors and promoting health are needed. Universities could launch inclusive wellness programs that cater to various aspects of employee well-being, encompassing physical, mental, and social health. According to Lloyd et al. (2017), wellness programs to support long-term healthy behaviors that are grounded in theory are the most effective at producing positive results for employees. They outlined how a large university made use of its current resources to design, create, and carried out an extensive program for employee well-being that was grounded in theory (Lloyd et al., 2017). Such programs promise to support employees' health, thereby improving organizational productivity. These initiatives and interventions have the potential to appeal to investors who place importance on environmental, social, and governance factors (Organization for Economic Co-operation and Development, 2022).

Job type and responsibilities should be taken into consideration in designing interventions to improve health among university employees. Academicians who are overburdened with both academic and extracurricular responsibilities may experience stress related to their jobs, potentially resulting in unsatisfactory work which could harm the university's reputation. Awang et al. (2022) found that 9.3% of the variation in job-related stress among academicians is explained by non-academic responsibilities. Non-academicians may face different stressors that could compromise the quality of their work. Given that the prevalence of some health indicators differs between academicians and non-academicians (e.g., smoking status [$p < .001$], exercise habits [$p = .049$], and health satisfaction [$p = .009$]), health promotion initiatives should be targeted to specific groups.

Additionally, developing comprehensive physical, psychological, and social health services for university employees is crucial for improving their quality of life. Of the several health risk factors identified in the current study, some were social or demographic in nature: for example, having at least one chronic condition (53.4%), being overweight or obese or extremely obese (72.5%), and never exercising (48.1%). Thus, universities should provide holistic healthcare services, which adopt an interdisciplinary approach that emphasizes lifestyle changes, to promote employees' quality of life.

Given the observed differences in health indicators between academicians and non-academicians , establishing a campus climate that is favorable to health is essential. Healthy campus environments foster diverse perspectives on living, studying, and working on campus, offering opportunities for personal development and upholding democratic ideals (Northeastern Illinois University, n.d.). In such a climate, employees' workload and duties could be negotiable, improving their work satisfaction and quality of life (Faria et al., 2021).

5. Conclusions

Based on the results, it can be concluded that several health risk factors are prevalent among the sample, underscoring the potential associations between health indicators, health satisfaction, and demographic factors. To support the objectives of Saudi Vision 2030 and the university goals, attention needs to be paid to addressing employees' health and promoting the quality of health. The study findings have several implications, including developing health initiatives considering employees' job type and demographic factors; providing comprehensive physical, psychological, and social health services for university employees; and establishing a healthy campus environment. Replicating this study with a larger sample using a more robust study design would provide more understanding of the impact of health indicators and demographic factors on health satisfaction.

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Table 1: Comparing Demographic Characteristics of Participants by Job Type (n = 393)

Characteristics		Total number (n [%])	Academicians (n [%])	Non-Academicians (n [%])	p
Total participants		393 (100)	240 (61.1)	153 (38.9)	
Age	**Mean (SD)**	42.42 (6.19)	43 (5.87)	41.51 (6.57)	.020
Sex	**Male**	141 (35.9)	51 (13.0)	90 (22.9)	< .001
	Female	252 (64.1)	189 (48.1)	63 (16)	
Years of experience	**Mean (SD)**	12.66 (5.49)	11.89 (5.71)	13.86 (4.91)	< .001
Social status	**Single**	42 (10.6)	21 (5.3)	21 (5.3)	.003
	Married	321 (81.7)	192 (48.9)	129 (32.8)	
	Divorced	18 (4.6)	18 (4.6)	0 (0)	
	Separated	9 (2.3)	6 (1.5)	3 (0.8)	
	Widower	3 (0.8)	3 (0.8)	0 (0)	
Have at least one chronic condition	**Yes**	210 (53.4)	132 (33.6)	78 (19.8)	.436
	No	183 (46.6)	108 (27.5)	75 (19.1)	
Smoking status	**Yes**	15 (3.8)	3 (0.8)	12 (3.0)	< .001
	No	378 (96.2)	237 (60.3)	141 (35.9)	
BMI	**Under weight < 18.5**	6 (1.5)	3 (0.8)	3 (0.8)	.580
	Normal weight 18.5–24.9	102 (26.0)	57 (14.5)	45 (11.5)	.210
	Over weight 25.0–29.9	150 (38.2)	98 (25.0)	52 (13.2)	.230
	Obese 30.0–34.9	85 (21.6)	52 (13.2)	33 (8.4)	.940
	Extremely obese ≥ 35	50 (12.7)	33 (8.4)	17 (4.3)	.440
	Mean (SD)	29.14 (12.42)	28.81 (6.85)	29.65 (17.99)	.514
Exercise habits	**Never (1–1.9)**	189 (48.1)	114 (29.0)	57 (19.1)	.770
	Sometimes (2–2.9)	135 (34.4)	87 (22.2)	48 (12.2)	.320
	Often (3–3.9)	63 (16.0)	33 (8.4)	30 (7.6)	.120
	Routinely (4)	6 (1.5)	6 (1.5)	0 (0)	.049
Total exercise habits	**Mean (SD)**	2.05 (0.80)	2.06 (0.78)	2.03 (0.82)	.711
Health satisfaction	**Mean (SD)**	3.64 (0.93)	3.59 (0.98)	3.73 (0.85)	.009

Note. SD = standard deviation, BMI = body mass index.

Table 2: Health Indicators and Exercise Behaviors (n = 393)

Variable	**Mean (SD)**
BMI	29.14 (12.42)
Variable	**Total number (n [%])**
Smoking	15 (3.8)
Chronic conditions:	
1. Blood pressure	81 (20.6)
2. Diabetes	51 (13)
3. High cholesterol	54 (13.7)
4. Heart disease	9 (2.3)
5. Sickle cell anemia, Mediterranean anemia, or any blood disease	21 (5.3)
6. Thyroid gland disorders	36 (9.2)
7. Liver or kidney disease	15 (3.8)
8. Asthma or chronic lung disease	39 (9.9)
9. Arthritis	15 (3.8)
10. Depression or anxiety	36 (9.2)
11. Cancer	3 (0.8)
Exercise Behaviors:	**Mean (on a scale 1–4)**
1. Follow a planned exercise program	2
2. Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber).	2
3. Participate in light-to-moderate physical activity (such as sustained walking 30–40 minutes 5 or more times a week).	2
4. Participate in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling).	2
5. Perform stretching exercises at least 3 times per week.	2
6. Engage in exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking).	3
7. Check pulse rate when exercising.	2
8. Reach target heart rate when exercising	2

Note. SD = standard deviation, BMI = body mass index

Table 3: Correlations Between Health Indicators and Health Satisfaction Among Employees of Jazan University (n = 393)

		Age	Sex	Social status	Job type	Years of experience	BMI	Chronic disease	Exercise behaviors	Smoking status	Health satisfaction
Age	Value p	1									
Sex	Value p	.10 < .001	1								
Social status	Value p	.16 < .001	.21 .001	1							
Job type	Value p	.12 < .001	.38 < .001	.20 .003	1						
Years of experience	Value p	.47 < .001	.009 < .001	.22 < .001	.17 < .001	1					
BMI	Value p	.23 < .001	.02 < .001	.08 < .001	.03 < .001	.17 .001	1				
Chronic disease	Value p	.06 < .001	-.20 < .001	.12 .258	-.04 .436	.03 < .001	.16 < .001	1			
Exercise behaviors	Value p	.07 .196	.11 < .001	.25 < .001	.02 < .001	.05 .343	-.05 .312	.09 < .001	1		
Smoking status	Value p	.05 .002	.27 < .001	.16 .037	.17 < .001	.017 < .001	.30 < .001	.19 < .001	.03 < .001	1	
Health satisfaction	Value p	.03 .060	.23 < .001	.13 .009	.19 .006	-.05 .32	.01 .85	.21 .003	-.04 .46	.14 .10	

Note. BMI = body mass index.