# Mental health, professional burnout, and substance use screening among high school education staff in Jalisco, Mexico. A digital survey from 2021

*Tamizaje de salud mental, desgaste profesional, y consumo de sustancias en personal de educación media superior en Jalisco. Encuesta digital del 2021*

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## Abstract

**Introduction:** education professionals play a vital role in shaping future generations, but their work environment can expose them to stressors that negatively impact their mental health, leading to burnout and substance use. **Objective:** to evaluate mental health, burnout, and substance use prevalence among high school staff in Jalisco, Mexico, and associated factors. **Material and methods:** cross-sectional survey of 3,333 staff from 45 schools using the General Health Questionnaire (GHQ-28), Maslach Burnout Inventory (MBI), and Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). **Results:** 29.1% screened positive for mental disorders, predominantly somatic symptoms (45.2%) and anxiety (41.3%). Female gender, unmarried status, and teaching roles associated with poorer mental health. 17.49% exhibited high burnout risk. Harmful alcohol (9%) and tobacco use (41%) prevalent. Substance use associated with mental impairment. **Conclusion:** Jalisco's high school staff face substantial mental health issues, burnout, and substance misuse. Tailored workplace programs promoting emotional well-being in this essential workforce are needed.

**Keywords:** mental health, burnout, substance use, teachers.

## Resumen

*Introducción:* los profesionales de la educación desempeñan un papel vital en la formación de las futuras generaciones, pero su entorno laboral los expone a factores estresantes que pueden afectar negativamente su

*salud mental, provocando agotamiento y consumo de sustancias. **Objetivo:** evaluar la prevalencia de problemas de salud mental, agotamiento y consumo de sustancias entre el personal de escuelas secundarias en Jalisco, México, y los factores asociados. **Material y métodos:** encuesta transversal a 3,333 miembros del personal de 45 escuelas utilizando el Cuestionario de Salud General (GHQ-28), el Inventario de Agotamiento Profesional de Maslach (MBI) y la Prueba de Detección de Consumo de Alcohol, Tabaco y Sustancias (ASSIST). **Resultados:** el 29.1% presentó trastornos mentales, predominantemente síntomas somáticos (45.2%) y ansiedad (41.3%). El género femenino, el estado civil soltero y las funciones docentes se asociaron con una peor salud mental. El 17.49% mostró un alto riesgo de agotamiento. El consumo nocivo de alcohol (9%) y tabaco (41%) fue prevalente. El uso de sustancias se asoció con deterioro mental. **Conclusión:** el personal de escuelas secundarias en Jalisco enfrenta problemas significativos de salud mental, agotamiento y abuso de sustancias. Se necesitan programas adaptados en el lugar de trabajo para promover el bienestar emocional de esta fuerza laboral esencial.*

***Palabras clave:** salud mental, desgaste profesional, consumo de sustancias, docentes.*

**Abbreviations:**

GHQ-28 = General Health Questionnaire
MBI = Maslach Burnout Inventory
ASSIST = Alcohol, Smoking and Substance Involvement Screening Test
OR = Odds Ratios

## INTRODUCTION

Teachers and education professionals play a crucial role in shaping future generations and societal development. However, their work environment often exposes them to stressors that can negatively impact their mental health.[1,2] Heavy workloads, classroom management challenges, administrative demands, and interpersonal conflicts are significant contributors to stress, burnout, and mental health issues among education staff.[3,4]

Research indicates a high prevalence of mental health problems such as depression, anxiety, and stress among educators,[5,6] which can adversely affect job performance, satisfaction, and quality of life. Burnout, characterized by emotional exhaustion, depersonalization, and diminished personal accomplishment, is particularly concerning in this profession.[7]

Substance use, including alcohol, tobacco, and illicit drugs, has been identified as a coping mechanism for stress and mental health issues in various occupational groups, including education staff.[8,9] Such use can harm physical and mental health, potentially compromising the educational environment and student well-being.

In Jalisco, Mexico, the extensive education system serves a diverse student population, yet limited research has explored mental health, burnout, and substance use among education staff in this region. Understanding the prevalence and associated factors

of these issues is critical for developing effective support strategies and interventions.

The primary objective of this cross-sectional study was to evaluate the mental health status, burnout prevalence, substance use, and related factors among high school education staff in Jalisco, Mexico, through a digital survey conducted in 2021. Specific objectives included analyzing sociodemographic factors (age, marital status, gender) affecting mental health, assessing the relationship between weekly work hours and mental health, examining the link between substance use and mental health, and determining the prevalence of suicidal ideation. This study follows the STROBE guidelines.

## MATERIAL AND METHODS

### Study design and participants

A cross-sectional design was employed, targeting 6,088 teachers from the High School Education System of the University of Guadalajara, Jalisco. Recruitment occurred in September 2021 for administrative staff and October 2021 for academic staff. Stratified random sampling, based on Jalisco's geographical regions and school type (general or technical education), was used to minimize selection bias. The sample size of 1,147 participants was determined based on a 30% estimated prevalence of mental health problems, a 95% confidence level, and a 5% margin of error.

Inclusion criteria were men and women of any age employed as teachers or administrative staff within the High School Education System of Jalisco. Exclusion criteria involved withdrawal of informed consent, incomplete survey responses, or lack of

internet access. Responses were excluded if there were errors in survey completion or missing consent.

## Data collection

Data were collected using an online self-report questionnaire (Google Forms) distributed via email and institutional channels between September and October 2021. Participants were informed about the study objectives and provided electronic informed consent before accessing the questionnaire. To limit bias, a battery of standardized and validated questionnaires was used, covering:

1. Sociodemographic characteristics: age, gender, marital status, educational level, job position, years of experience, and other relevant demographics.
2. The General Health Questionnaire-28 (GHQ-28): assesses self-perceived mental health across four subscales: somatic symptoms, anxiety, social dysfunction, and depression. Scoring was based on the 0,0,1,1 method, with categorization as "with impairment" or "without impairment" using cut-offs.[10]
3. Professional burnout: measured by the Maslach burnout inventory (MBI) in three dimensions: emotional exhaustion, depersonalization, and personal accomplishment. The Spanish version, validated for occupational health studies, was used.[11] Some items were modified to adapt the questions to the institution's needs, without altering the variables or the number of questions.
4. Substance use: evaluated using the alcohol, smoking and substance involvement screening test (ASSIST), a tool recommended by the WHO. Participants were categorized based on consumption risk patterns cut-off points for each substance, as low (no intervention required), moderate (suggesting a brief intervention), and high (intensive intervention needed).[12]

## Statistical analysis

Descriptive statistics summarized sociodemographic data, and variables were presented as means and standard deviations. The Shapiro-Wilk test assessed normality. Parametric and non-parametric tests (e.g., t-test, *ANalysis Of VAriance* (ANOVA), Mann-Whitney U) were used for analysis. Risk factors were estimated using Odds Ratios (OR) with 95% confidence intervals. Correlation analyses used Pearson's and Spearman's methods, depending on data type. Levene's test checked variance homogeneity. A p-value of $< 0.05$ indicated significance. Multivariable logistic regression controlled for confounders based on previous literature. Analyses were performed using SPSS version 26.0.

## Ethical considerations

The study was approved by the Review Board of the Jalisco's Mental Health Institute. All participants provided informed consent electronically. Data were collected anonymously, adhering to ethical principles for research involving human subjects.

## RESULTS

Following the invitation to participate in the survey, 3,344 responses were received from teachers in the High School Education System of Jalisco. Of these, 11 teachers declined informed consent, resulting in a total of 3,333 completed questionnaires. All 3,333 questionnaires were fully completed without any missing data. The sociodemographic and weekly work hours data of the study participants are presented in *Table 1*. Additionally, 53.1% reported having another job besides teaching in the High School Education System.
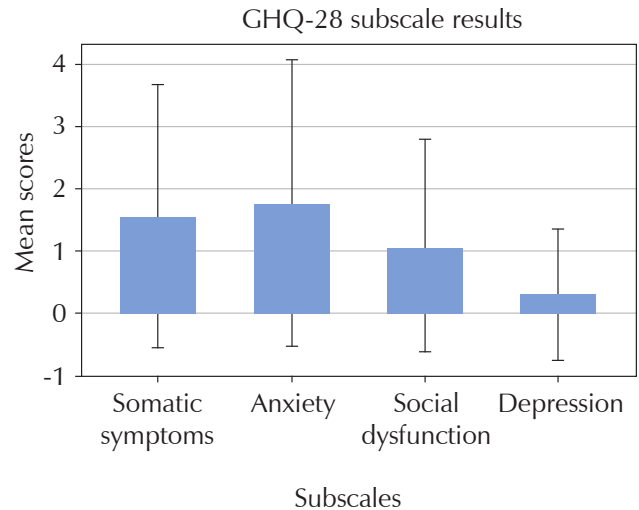
## General health questionnaire (GHQ-28)

The self-perceived emotional health status, assessed by the GHQ-28, revealed that 29.1% (n = 970) scored in the range indicating risk for mental health disorders, with a mean of (39.15 ± 10.1). By subscale, the means were (1.56 ± 2.13) for somatic symptoms, (1.77 ± 2.31) for anxiety, (1.08 ± 1.72) for social dysfunction, and (0.29 ± 1.05) for depression *(Figure 1)*. Given the relevance of suicidality, items D6 (assessing passive death wishes: "Have you thought of the possibility that you might make away with yourself?") and D7 (evaluating suicidal ideation: "Has the thought of taking your own life been in your mind?") were analyzed. For D6, 97.11% responded "No more than usual", and 2.89% responded "Quite a bit more than usual". For D7, 96.45% answered "Definitely not", and 3.55% answered "The thought has crossed my mind".

There was a significant association between gender and mental health impairment, with women showing 1,283 without impairment vs. 345 with impairment, and men showing 1,072 without impairment vs 623 with impairment (p < 0.001). Marital status was also associated with mental health (p = 0.003), with the following distribution of those without/with mental health impairment: single (683/316), married (1,483/562), divorced (155/81), and widowed (42/11). Institutional appointment was likewise associated with mental health status (p = 0.007), with the without/with impairment distribution as follows: educational counselor (58/22), adjunct professor (1,543/662), part-time professor (148/32), full-time professor (441/172), part-time academic technician (46/15), and full-time academic technician (127/67). Self-perceived emotional health status via the GHQ-28 showed a very low correlation with weekly work hours (r = 0.094, p < 0.001).

**Table 1:** Sociodemographic and work variables of the total sample N = 3,333.

| Variable | n (%) |
|---|---|
| **Sex** | |
| Male | 1,628 (48.84) |
| Female | 1,695 (50.86) |
| Prefers not to say | 10 (0.30) |
| **Marital status** | |
| Single | 1,001 (30.03) |
| Married | 2,042 (61.27) |
| Divorced/separated | 236 (7.08) |
| Widowed | 54 (1.62) |
| **Institutional position** | |
| Educational counselor | 79 (2.37) |
| Adjunct professor | 2,018 (60.55) |
| Part-time professor | 161 (4.83) |
| Full-time professor | 624 (18.72) |
| Part-time academic technician | 175 (5.25) |
| Full-time academic technician | 276 (8.28) |
| **Weekly teaching hours** | |
| 4-8 | 344 (10.32) |
| 9-15 | 532 (15.96) |
| 16-25 | 690 (20.70) |
| 26-30 | 314 (9.42) |
| 31-40 | 704 (21.12) |
| 41-48 | 749 (22.47) |



GHQ-28 subscale results

**Figure 1:** Means and standard deviations of general health questionnaire (GHQ-28) subscales.
Note: the bar chart represents the average scores of GHQ-28 four subscales (somatic symptoms, anxiety, social dysfunction, and depression). Error bars indicate the variability within the population. Higher scores indicate a greater prevalence of symptoms.

## Substance use (WHO ASSIST V3)

The results from the alcohol, smoking and substance involvement screening test (ASSIST) revealed a high prevalence of substance use among the participants. Alcohol was the most commonly consumed substance, with 80.19% (n = 2,673) of respondents reporting alcohol use. Of these, 90.9% were categorized as low-risk, 8.3% as moderate-risk, and 0.7% as high-risk consumers based on the ASSIST scoring. Tobacco was the second most prevalent substance, with 35.85% (n = 1,195) of participants reporting use, of whom 58.9% were low-risk, 38.4% were moderate-risk, and 2.5% were high-risk consumers. Regarding illegal or controlled substances, sleeping medications or tranquilizers were the most commonly consumed, with a prevalence of 12.36% (n = 412), followed by cannabis at 7.77%. The complete distribution of substance use and associated risk levels is summarized in *Table 2*.

An analysis of variance evaluated whether there were differences in mental health status (without impairment, n = 2,363; with impairment, n = 970) between those who had consumed substances in the last three months. Statistically significant differences in GHQ-28 scores were observed for consumers of

tobacco, alcohol, cannabis, cocaine, amphetamines, tranquilizers, and hallucinogens (p < 0.001), but not for consumers of inhalants and opioids (p > 0.001). No correlation was detected between work hours and substance use through Pearson's test (p > 0.05). Based on n = 3,025 subjects without depression and n = 308 subjects with depression, *Table 3* shows the results obtained for depression status across the substances and their consumption screening risk score. It was observed that there was a statistically significant difference between people with depression versus those who did not have it in terms of greater consumption of tobacco, alcohol, cannabis, and tranquilizers, as well as a greater need for a brief or intensive intervention, according to the score obtained on the ASSIST scale.

## Assessment of burnout (MBI)

The assessment of burnout using the MBI revealed concerning levels of emotional exhaustion and depersonalization among the participants. The mean emotional exhaustion score was (13.93 ± 12.52), with scores exceeding 26 indicating a high risk of burnout. Similarly, the mean depersonalization score of (2.97 ± 3.87) suggested a significant proportion of participants at risk, with scores above nine points indicative of high burnout risk. Interestingly, the personal accomplishment subscale did not follow the expected pattern, with a mean score of (41.43 ± 7.72) deviating from the typical burnout risk range. Further analysis revealed that 17.49% (n = 583) of participants scored within the high-risk range for burnout based on the emotional exhaustion

subscale. This group was predominantly male (67.1%, n = 391), married (54.0%, n = 314), and more likely to work over 41 hours per week (28.6%, n = 166).

A significant association was identified between the MBI exhaustion subscale and the GHQ-28 score. Faculty members with a GHQ-28 score exceeding 5 points exhibited a greater presence of exhaustion compared to those scoring below 5 (two-tailed p-value = 0.046). While the MBI exhaustion scores did not demonstrate a strong correlation with weekly working hours on their own (r = 0.134, p < 0.001), a moderate correlation emerged when the data from both instruments were combined (r = 0.572, p < 0.001). This suggests that while working hours may not be the sole factor influencing burnout risk, it contributes to the overall burden experienced by faculty members.

## DISCUSSION

This cross-sectional study revealed a high prevalence of mental health problems, burnout, and substance use among high school education staff in Jalisco, Mexico. Nearly one-third of participants screened positive for mental disorders. The assessment of burnout revealed concerning levels of emotional exhaustion and depersonalization. Substance use, particularly harmful or hazardous alcohol consumption and tobacco use, was also prevalent in this population. Significant associations were identified between mental health impairment and factors such as gender, marital status, and job position.

**Table 2:** Substance use in a sample of high school education staff.

| Substance | Prevalence n (%) | Low use n (%) | Moderate use n (%) | High use n (%) |
|---|---|---|---|---|
| Tobacco | 1,195 (35.85) | 705 (58.9) | 460 (38.4) | 30 (2.5) |
| Alcohol | 2,673 (80.19) | 2,431 (90.9) | 222 (8.3) | 20 (0.7) |
| Cannabis | 259 (7.77) | 229 (88.4) | 30 (11.1) | 1 (0.3) |
| Cocaine | 33 (0.9) | 32 (96.9) | 1 (3.1) | 0 (0.0) |
| Amphetamines | 61 (1.83) | 50 (81.9) | 11 (18.1) | 0 (0.0) |
| Inhalants | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) |
| Tranquilizers | 412 (12.36) | 393 (94.9) | 21 (5.0) | 8 (1.9) |
| Hallucinogens | 15 (0.4) | 13 (86.6) | 2 (13.3) | 0 (0.0) |
| Opioids | 6 (0.1) | 4 (66.6) | 2 (33.3) | 0 (0.0) |

**Table 3:** Substance use prevalence and intervention by depression status.

| Substance | No depression<br>N = 3,025<br>n (%) | With depression<br>N = 308<br>n (%) | p |
|---|---|---|---|
| Tobacco use | | | < 0.05 |
| No intervention | 2,607 (86.3) | 235 (76.3) | |
| Brief intervention | 396 (13.1) | 61 (19.8) | |
| Intensive treatment | 18 (0.6) | 12 (3.9) | |
| Alcohol use | | | < 0.05 |
| No intervention | 2,858 (94.3) | 239 (77.6) | |
| Brief intervention | 160 (5.3) | 61 (19.8) | |
| Intensive treatment | 12 (0.4) | 8 (2.6) | |
| Cannabis use | | | < 0.05 |
| No intervention | 3,012 (99.5) | 294 (95.5) | |
| Brief intervention | 13 (0.5) | 13 (4.2) | |
| Intensive treatment | 0 (0.0) | 1 (0.3) | |
| Cocaine use | | | NS |
| No intervention | 3,025 (100.0) | 306 (99.7) | |
| Brief intervention | 0 (0.0) | 1 (0.3) | |
| Intensive treatment | 0 (0.0) | 0 (0.0) | |
| Amphetamine use | | | NS |
| No intervention | 3,020 (99.7) | 304 (99.0) | |
| Brief intervention | 9 (0.3) | 3 (1.0) | |
| Intensive treatment | 0 (0.0) | 0 (0.0) | |
| Inhalant use | | | NS |
| No intervention | 3,025 (100.0) | 308 (100.0) | |
| Brief intervention | 0 (0.0) | 0 (0.0) | |
| Intensive treatment | 0 (0.0) | 0 (0.0) | |
| Tranquilizer use | | | < 0.05 |
| No intervention | 2,870 (94.9) | 232 (75.3) | |
| Brief intervention | 150 (5.0) | 70 (22.7) | |
| Intensive treatment | 3 (0.1) | 6 (1.9) | |
| Hallucinogen use | | | NS |
| No intervention | 3,025 (100.0) | 306 (99.7) | |
| Brief intervention | 0 (0.0) | 1 (0.3) | |
| Intensive treatment | 0 (0.0) | 307 (99.7) | |

NS = not significant.

The most prevalent mental health issues were somatic symptoms and anxiety/insomnia, which may be related to the physical and psychological stress experienced by education staff.[2,13,14] The social dysfunction and depression subdomains were also prevalent, suggesting the potential impact on interpersonal relationships and overall well-being. Consistent with previous research, being a teacher, female gender, and higher levels of burnout were associated with poorer mental health outcomes.[6,3,4]

The high prevalence of emotional exhaustion, a key dimension of burnout, is particularly concerning as it can lead to decreased job performance, absenteeism, and potentially contribute to a negative learning environment for students.[1,9,15] The findings that being a teacher and having more years of experience were associated with higher burnout levels highlight the need for targeted interventions and support strategies tailored to the specific demands and stressors faced by this profession.[4,7,16]

Substance use, particularly harmful or hazardous alcohol consumption and tobacco use, was also prevalent among the education staff. This finding aligns with previous studies suggesting the use of substances as a coping mechanism for stress and mental health problems in various occupational groups, where younger age, male gender, and increased substance use are consistent with patterns observed in the general population.[8,9]

This study has several limitations that should be considered. First, the cross-sectional design precludes the ability to establish causal relationships between the variables of interest. Second, the use of self-report measures may introduce response bias, as participants may have underreported or overreported certain behaviors or symptoms. Third, the study was conducted during the *coronavirus disease 2019* (COVID-19) pandemic, which may have exacerbated the stressors and challenges faced by education professionals, such as the transition to remote learning, adaptation to new teaching modalities, and concerns about health and safety, potentially influencing the results.[17] However, further research is needed to examine the specific impact of the pandemic on the mental health and well-being of education staff in Jalisco.

The high prevalence of mental health issues, burnout, and substance use among high school education staff in Jalisco, Mexico, underscores the urgent need for targeted interventions and support programs tailored to this essential workforce. Addressing these concerns is crucial not only for promoting the well-being of education professionals but also for maintaining the quality of education and fostering a positive learning environment for students. Comprehensive strategies should encompass mental health resources, stress management programs, counseling services, and substance use prevention and intervention initiatives.[4,9] Additionally, efforts should be made to address organizational factors contributing to burnout, such as excessive workloads, lack of resources, and poor work-life balance.

While this study focused specifically on high school education staff in the state of Jalisco, Mexico, the findings may have broader implications for understanding the mental health challenges faced by education professionals in similar contexts. The demographic and occupational characteristics of the study population, including a mix of teachers and administrative staff from various geographic regions and school types, increase the potential generalizability of the results to other regions or educational systems within Mexico. However, it is important to note that cultural, socioeconomic, and organizational factors may influence the prevalence and manifestation of mental health issues, burnout, and substance use among education staff. Therefore, further research in diverse settings is warranted to gain a comprehensive understanding of these challenges and inform tailored interventions.

## CONCLUSION

This cross-sectional study, in line with findings from other regions, reveals the significant mental health challenges, burnout, and substance use among high school education staff in Jalisco, Mexico. The results highlight the urgent need for targeted interventions to support the well-being of these educators, as their ability to perform effectively is compromised by high levels of stress and burnout, potentially impacting the quality of education provided to students.

To address these issues, policymakers should prioritize improving working conditions by reducing workloads, providing stress management and mental health support, fostering a collaborative work environment, and recognizing the value of teachers' contributions. A comprehensive approach that centers on educators' well-being is essential to

maintaining high educational standards and ensuring the holistic development of future generations.

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