

Universidad de Huelva

Departamento de Sociología, Trabajo Social y Salud
Pública



Factores psicosociales y estrés en la enfermería en España: repercusiones en la salud y el desempeño profesional

**Memoria para optar al grado de doctora
presentada por:**

Ángela Narbona Gálvez

Fecha de lectura: 27 de febrero de 2026

Bajo la dirección de los doctores:

Juan Gómez Salgado

Regina Allande Cussó

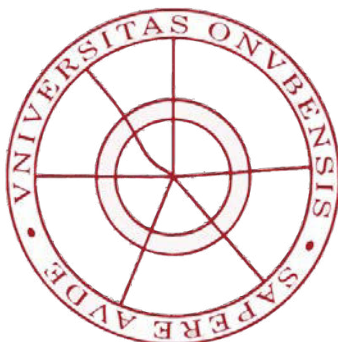
David Ribas Pérez

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DOCTORADO EN CIENCIAS DE LA SALUD

**TESIS POR COMPENDIO
TESIS CON MENCIÓN INTERNACIONAL**

**TESIS DOCTORAL
HUELVA
2026**

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AGRADECIMIENTOS

Dicen que toda meta alcanzada es el resultado de muchos pasos pequeños, de dudas y de certezas, de tropiezos y de manos que te ayudan a levantarte. Esta tesis es, en realidad, el reflejo de todo ello: del esfuerzo individual, sí, pero sobre todo del apoyo, la confianza y el cariño de quienes me han acompañado durante este camino.

En primer lugar, quiero expresar mi agradecimiento a mis directores de tesis, Juan, Regina y David, por su dedicación, sus consejos y su apoyo. Gracias por su confianza, por su cercanía y por haber hecho de este proceso un aprendizaje continuo.

A Emilia, por su acogida y su apoyo durante mi estancia en la Universidad de Coimbra. Por ser un referente profesional y humano, por su disposición constante y por hacer que aquella experiencia fuera tan enriquecedora como inspiradora.

A mis padres, Mari Ángeles y Javier, porque todo lo que soy se lo debo a ellos. Por su amor incondicional, por estar en cada paso, en cada duda y en cada logro. Por ser el punto de partida y el refugio al que siempre regreso.

A mi hermana, Marina, porque siempre es calma en la tormenta, mi mayor apoyo y mi ejemplo a seguir. Por su fortaleza, su cariño y su forma de recordarme quién soy cuando más lo necesito.

A mi pareja, Curro, por ser comprensión y aliento en los momentos en los que dudaba de mí. Por su compañía paciente, por su fe cuando me faltaba la mía y por su forma de estar en los días más difíciles.

A Olivia, por su compañía incondicional, por estar siempre presente, por los silencios compartidos y por traer luz incluso en los días más intensos.

A mis amigos, por hacerme olvidar las preocupaciones y ayudarme a desconectar cuando más lo necesitaba.

En definitiva, gracias a todos los que, con su presencia, su palabra o su ejemplo, han dejado una huella en este proceso. Porque con cautela y paso firme se consiguen grandes cosas.

GLOSARIO DE TÉRMINOS, ACRÓNIMOS Y ABREVIATURAS

AFE: Análisis factorial exploratorio

AFC: Análisis factoriales confirmatorios

AMOS: Analysis of Moment Structures

CINAHL: Cumulative Index to Nursing and Allied Health Literature

CFI: índice de ajuste comparativo

CoCoPop: Condition, context, population

COPSOQ: Copenhagen Psychosocial Questionnaire

Covid-19: Enfermedad por coronavirus 2019 (coronavirus disease 2019)

DeCS: Descriptores de Ciencias de la Salud

EPA: Enfermera de Práctica Avanzada

ERI: Effort-Reward Imbalance Questionnaire

GHQ-12: Cuestionario de Salud General (General Health Questionnaire)

IBM: International Business Machines Corporation

ISTAS: Instituto Sindical de Trabajo, Ambiente y Salud

ISTAS_ENFERMERÍA: versión del instrumento ISTAS adaptada para profesionales de enfermería

JBI: Instituto Joanna Briggs

JCQ: Job Content Questionnaire

MeSH: Medical Subject Headings

NFI: índice de ajuste normalizado

NSNA: Asociación Nacional de Estudiantes de Enfermería

NSS: The Nursing Stress Scale

OSCE: Examen Clínico Estructurado Objetivo

OSH: Occupational Health and Safety

PRISMA: Preferred Reporting Items for Systematic reviews and Meta-Analyses

Prospero: International Prospective Register for Systematic Reviews

PSS: Perceived Stress Scale

RECS-E: Escala de Compromiso y Exploración Repetida en el dominio de Educación

RMSEA: error cuadrático medio de aproximación

SPSS: Statistical Package for the Social Sciences

SRMR: residuo cuadrático medio estandarizado

SUSESO: Superintendencia de Seguridad Social

TLI: índice de Tucker-Lewis

UWES: Utrecht Work Engagement Scale

WOS: Web Of Science

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RESUMEN

Título

Factores psicosociales y estrés en la enfermería en España: repercusiones en la salud y el desempeño profesional

Introducción

La profesión de enfermería constituye un pilar esencial en el sistema sanitario, pero su ejercicio se desarrolla en un entorno laboral caracterizado por una elevada exigencia física, emocional y psicológica. Las enfermeras se enfrentan cotidianamente a condiciones adversas como la sobrecarga de trabajo, la escasez de recursos, la rotación de turnos, la exposición al sufrimiento humano y la necesidad de tomar decisiones críticas en contextos de gran presión. Estas circunstancias favorecen la aparición de riesgos psicosociales que afectan tanto a la salud física y mental de los profesionales como a la calidad de la atención brindada a los pacientes. La situación se agrava en el caso de las enfermeras recién graduadas, quienes atraviesan un proceso de transición especialmente vulnerable, marcado por la inseguridad, la falta de experiencia y el desajuste entre las expectativas académicas y la práctica clínica. Factores estructurales como la precarización laboral, el déficit de plantillas, los largos turnos y la insuficiencia de programas de apoyo incrementan aún más el riesgo de estrés, burnout y abandono temprano de la profesión. En este contexto, el análisis del estrés laboral y de los riesgos psicosociales en enfermería adquiere una relevancia prioritaria para la salud ocupacional, con el fin de diseñar estrategias preventivas y de intervención que promuevan el bienestar profesional y aseguren la sostenibilidad del sistema sanitario.

Objetivos

El objetivo de este estudio fue analizar los riesgos psicosociales en enfermeras españolas a través de la validación del SUSESO/ISTAS21 y su asociación con variables personales, laborales y de salud.

Hipótesis

Se plantea que las enfermeras españolas expuestas a condiciones laborales adversas, como la sobrecarga asistencial, la rotación de turnos y la precariedad contractual, presentarán mayores niveles de estrés, burnout y un deterioro de su salud autopercibida. Del mismo modo, se espera que los elevados riesgos psicosociales se asocien con una menor satisfacción y desempeño profesional, incrementando incluso la intención de abandono de la profesión. En contraposición, la presencia de recursos organizacionales adecuados, el apoyo social y la disponibilidad de estrategias preventivas actuarán como factores protectores, favoreciendo el bienestar laboral y el compromiso con la práctica clínica.

Metodología

Se realizó un estudio observacional, descriptivo, de corte transversal y de aproximación cuantitativa, desarrollado en tres fases:

- Fase 1. Revisión sistemática: se identificó y analizó la evidencia disponible sobre el estrés en enfermeras mediante un protocolo PRISMA, utilizando las bases de datos PubMed, Scopus, Web of Science y CINAHL.
- Fase 2. Adaptación y validación psicométrica: se llevó a cabo la adaptación transcultural y el estudio psicométrico del cuestionario SUSESO/ISTAS21 en una muestra de enfermeras españolas.
- Fase 3. Estudios transversales: se aplicaron cuestionarios autoadministrados a 2757 enfermeras en activo, recogiendo variables sociodemográficas, laborales y de salud, además de la escala SUSESO/ISTAS21, con el fin de evaluar riesgos psicosociales y su relación con dichas variables.

El análisis de los datos se realizó con SPSS Statistics v26 y AMOS, aplicando estadística descriptiva, pruebas no paramétricas y análisis factorial exploratorio y confirmatorio para evaluar la validez y fiabilidad del instrumento.

Resultados

Más del 55% de las enfermeras encuestadas perciben un nivel alto de riesgo en el desempeño de sus funciones, con la excepción de la dimensión Compensaciones, donde se observa un riesgo medio-alto, cercano al 40%. Este patrón varía según el servicio: en Urgencias, la percepción de riesgo fue consistentemente superior en todas las dimensiones, alcanzando los valores más altos en Exigencias psicológicas (80,5%) y en Apoyo social a las empresas (79,2%). En contraste, las enfermeras de Atención Primaria reportaron niveles más bajos, con prevalencias inferiores al 50% en Trabajo activo y desarrollo de habilidades (39,3%), Compensaciones (33,1%) y Doble presencia (48,7%), lo que indica que el riesgo percibido en estas áreas se sitúa en un nivel medio-alto.

En cuanto al compromiso laboral, medido mediante la escala UWES9, más del 75% de las enfermeras de Atención Primaria obtuvo puntuaciones promedio de 5 o 6 en todas las subescalas, así como en la puntuación total, reflejando un nivel elevado de implicación y motivación en su trabajo. Entre las enfermeras de Urgencias, los porcentajes asociados a promedios de 5 o 6 fueron del 57,7% en Vigor, 71,1% en Dedicación y 62,4% en Absorción. En el resto de áreas, los valores fueron ligeramente superiores en Absorción (69,8%) y Dedicación (69,6%), mientras que en Vigor se mantuvo en 58,5%. En todos los grupos estudiados, más del 30% manifestó experimentar estos sentimientos de manera diaria, lo que indica una implicación sostenida en sus actividades profesionales.

Respecto al bienestar psicológico, un 41,1% de las enfermeras alcanzó puntuaciones superiores a 3 en el test GHQ-12, lo que refleja niveles de malestar significativos. Este porcentaje fue menor en Atención Primaria (30,5%) y más elevado en Urgencias (47,6%), mientras que en el resto de áreas se situó en torno al 43%. Los análisis de regresión demostraron que, en los tres modelos evaluados, la salud percibida y la subescala Vigor del UWES actuaron como predictores significativos del bienestar psicológico. La edad fue un factor relevante en los grupos de Atención Primaria y del resto de áreas, mientras que el sexo y la subescala Dedicación mostraron significancia únicamente en este último grupo. Por su parte, la subescala Absorción y la puntuación total del UWES no mostraron efectos significativos en ninguno de los modelos.

Discusión

En esta investigación, realizada con enfermeras españolas, se observó que los riesgos psicosociales, el compromiso laboral y el bienestar psicológico varían según el servicio: Urgencias, Atención Primaria y resto de áreas. Más del 50% de las profesionales perciben un nivel alto de riesgo en cuatro de las cinco dimensiones del SUSESO/ISTAS21, excepto en Compensaciones (nivel medio-alto). La prevalencia fue mayor en Urgencias (Exigencias psicológicas 80,5%; Apoyo social 79,2%), mientras que en Atención Primaria la percepción de riesgo fue inferior al 50% en Trabajo activo (39,3%), Compensaciones (33,1%) y Doble presencia (48,7%).

Los niveles de compromiso laboral (UWES) fueron elevados, con más del 75% de las enfermeras de Atención Primaria alcanzando puntuaciones promedio de 5 o 6, mientras que en Urgencias los valores fueron 57,7% en Vigor, 71,1% en Dedicación y 62,4% en Absorción. Más del 30% de las profesionales experimentó estos sentimientos diariamente.

En cuanto al bienestar psicológico, un 41,1% presentó puntuaciones indicativas de deterioro (GHQ>3), siendo menor en Atención Primaria (30,5%) y mayor en Urgencias (47,6%). La mayor vulnerabilidad se observó en enfermeras jóvenes, solteras o con percepción de salud regular/mala, mientras que factores como experiencia, soporte social y formación continuada mostraron efecto protector.

Estos hallazgos resaltan la necesidad de estrategias específicas para cada servicio, especialmente Urgencias y profesionales en etapas iniciales, con el objetivo de reducir riesgos psicosociales, mejorar el compromiso y proteger la salud mental del personal de enfermería.

Conclusiones

La probabilidad de que una enfermera experimente riesgos psicosociales, desgaste laboral o afectación de su bienestar depende de múltiples factores. Entre ellos, ciertas condiciones laborales como la sobrecarga de trabajo, la rotación de servicios, la estabilidad contractual y el tipo de turno, así como recursos personales y situacionales como la experiencia, el nivel educativo, el soporte social y la percepción de salud,

ejercen un papel modulador significativo. Situaciones excepcionales como la pandemia de COVID-19 incrementan aún más la vulnerabilidad, especialmente en profesionales en primera línea, por la presión asistencial, el miedo al contagio y la preocupación por el control de la crisis sanitaria.

Por servicios, las enfermeras de Atención Primaria presentaron niveles más altos de compromiso laboral y menor percepción de riesgos psicosociales que las profesionales de Urgencias y del resto de áreas, con más de un 30% experimentando sentimientos de compromiso diariamente. Además, alrededor de cuatro de cada diez enfermeras superaron el punto de corte del GHQ-12 para riesgo de deterioro de la salud mental, siendo más frecuente en Urgencias y menos en Atención Primaria.

Estos hallazgos subrayan la necesidad de estrategias integrales que combinen mejoras en las condiciones de trabajo, programas de apoyo psicológico, formación en resiliencia y autocuidado, y políticas de estabilización laboral. La implementación de figuras como la Enfermera de Práctica Avanzada (EPA) podría optimizar la gestión del personal y la calidad asistencial, especialmente en entornos de alta presión como Urgencias, contribuyendo a un sistema sanitario más sostenible y centrado en el bienestar de los profesionales.

Palabras clave

Enfermeras; Riesgos psicosociales; Salud Laboral; Estrés Ocupacional; Bienestar Psicológico; Compromiso laboral.

ABSTRACT

Title

Psychosocial Factors and Stress in Nursing in Spain: Implications for Health and Professional Performance

Introduction

The nursing profession constitutes an essential pillar of the healthcare system, but its practice takes place in a work environment characterized by high physical, emotional, and psychological demands. Nurses face adverse conditions on a daily basis, such as work overload, lack of resources, rotating shifts, exposure to human suffering, and the need to make critical decisions under great pressure. These circumstances foster the emergence of psychosocial risks that affect both the physical and mental health of professionals as well as the quality of care provided to patients. The situation is even more challenging for newly graduated nurses, who undergo a particularly vulnerable transition process marked by insecurity, lack of experience, and a mismatch between academic expectations and clinical practice. Structural factors such as job insecurity, staffing shortages, long shifts, and insufficient support programs further increase the risk of stress, burnout, and early departure from the profession. In this context, the analysis of occupational stress and psychosocial risks in nursing becomes a priority for occupational health, with the aim of designing preventive and intervention strategies that promote professional well-being and ensure the sustainability of the healthcare system.

Objetives

The objective of this study was to analyze psychosocial risks among Spanish nurses through the validation of the SUSESO/ISTAS21 and its association with personal, occupational, and health variables.

Hypothesis

It is hypothesized that Spanish nurses exposed to adverse working conditions—such as care overload, rotating shifts, and job insecurity—will present higher levels of stress, burnout, and poorer self-perceived health. Likewise, it is expected that high psychosocial risks will be associated with lower job satisfaction and professional performance, and even an increased intention to leave the profession. Conversely, the presence of adequate organizational resources, social support, and preventive strategies will act as protective factors, promoting occupational well-being and commitment to clinical practice.

Methodology

An observational, descriptive, cross-sectional, and quantitative study was conducted in three phases:

- Phase 1. Systematic review: A systematic review was carried out following a PRISMA protocol to identify and analyze available evidence on stress in nurses, using PubMed, Scopus, Web of Science, and CINAHL databases.
- Phase 2. Adaptation and psychometric validation: A cross-cultural adaptation and psychometric evaluation of the SUSESO/ISTAS21 questionnaire were performed in a sample of Spanish nurses.
- Phase 3. Cross-sectional studies: Self-administered questionnaires were distributed to 2,757 active nurses, collecting sociodemographic, occupational, and health variables, along with the SUSESO/ISTAS21 scale, in order to assess psychosocial risks and their association with these variables. Data were analyzed using SPSS Statistics v26 and AMOS, applying descriptive statistics, non-parametric tests, and exploratory and confirmatory factor analyses to assess the validity and reliability of the instrument.

Results

More than 55% of surveyed nurses reported a high level of risk in their professional duties, except in the dimension of Compensation, where a medium-high risk was observed in nearly 40%. This pattern varied by service: in Emergency Departments, perceived risk was consistently higher across all dimensions, reaching peak values in

Psychological Demands (80.5%) and Social Support from Organizations (79.2%). In contrast, Primary Care nurses reported lower levels, with prevalences below 50% in Active Work and Skills Development (39.3%), Compensation (33.1%), and Double Presence (48.7%), indicating a medium-high perceived risk in these areas. Regarding work engagement, measured with the UWES-9 scale, more than 75% of Primary Care nurses scored averages of 5 or 6 across all subscales and the overall score, reflecting high levels of involvement and motivation. Among Emergency Department nurses, the percentages associated with averages of 5 or 6 were 57.7% for Vigor, 71.1% for Dedication, and 62.4% for Absorption. In other areas, the values were slightly higher for Absorption (69.8%) and Dedication (69.6%), while Vigor remained at 58.5%. In all groups, more than 30% reported experiencing these feelings daily, indicating sustained involvement in their professional activities. Concerning psychological well-being, 41.1% of nurses scored above 3 on the GHQ-12, reflecting significant levels of distress. This percentage was lower in Primary Care (30.5%) and higher in Emergency Departments (47.6%), while in other areas it was around 43%. Regression analyses showed that in all three evaluated models, self-perceived health and the Vigor subscale of UWES were significant predictors of psychological well-being. Age was relevant in Primary Care and other areas, while sex and the Dedication subscale showed significance only in the latter. Conversely, the Absorption subscale and overall UWES score were not significant in any model.

Discussion

This study, conducted among Spanish nurses, found that psychosocial risks, work engagement, and psychological well-being vary by service: Emergency, Primary Care, and other areas. More than 50% of nurses perceived a high level of risk in four of the five SUSESO/ISTAS21 dimensions, except Compensation (medium-high). Prevalence was higher in Emergency (Psychological Demands 80.5%; Social Support 79.2%), whereas in Primary Care, perceived risk was below 50% in Active Work (39.3%), Compensation (33.1%), and Double Presence (48.7%). Work engagement (UWES) levels were high, with more than 75% of Primary Care nurses reaching average scores of 5 or 6, while in Emergency Departments the values were 57.7% for Vigor, 71.1% for Dedication, and 62.4% for Absorption. More than 30%

of professionals experienced these feelings daily. Regarding psychological well-being, 41.1% of nurses presented scores indicative of deterioration (GHQ>3), with lower prevalence in Primary Care (30.5%) and higher in Emergency (47.6%). Greater vulnerability was observed in younger, single nurses or those with fair/poor self-perceived health, while experience, social support, and continuing education showed protective effects. These findings highlight the need for service-specific strategies, particularly in Emergency and among early-career professionals, to reduce psychosocial risks, improve engagement, and protect the mental health of nursing staff.

Conclusions

The likelihood of a nurse experiencing psychosocial risks, occupational burnout, or impaired well-being depends on multiple factors. Among them, certain working conditions—such as workload, shift rotation, contract stability, and type of shift—along with personal and situational resources such as experience, educational level, social support, and self-perceived health, play a significant moderating role. Exceptional situations, such as the COVID-19 pandemic, further increase vulnerability, particularly for frontline professionals due to care pressure, fear of infection, and concerns over crisis management. By service, Primary Care nurses reported higher levels of work engagement and lower perception of psychosocial risks compared to Emergency and other areas, with more than 30% experiencing engagement feelings daily. Additionally, around 4 in 10 nurses scored above the GHQ-12 cutoff point for risk of mental health deterioration, being more frequent in Emergency and less in Primary Care. These findings underscore the need for comprehensive strategies that combine improvements in working conditions, psychological support programs, resilience and self-care training, and employment stabilization policies. The implementation of roles such as the Advanced Practice Nurse (APN) could optimize workforce management and quality of care, particularly in high-pressure environments such as Emergency Departments, contributing to a more sustainable healthcare system focused on the well-being of professionals.

Keywords

Nurses; Psychosocial Risks; Occupational Health; Occupational Stress; Psychological Well-being; Work Engagement.

1 INTRODUCCIÓN

1.1 MARCO TEÓRICO

1.1.2 La enfermería en el contexto actual: retos y desafíos profesionales

La profesión de enfermería, pilar fundamental en el sistema de atención sanitaria, se encuentra en un escenario global caracterizado por desafíos sustanciales que amenazan su estabilidad. Entre estos desafíos, el estrés ocupacional, la alta rotación de personal y las complejidades asociadas a la transición de las enfermeras recién graduadas al ámbito laboral, han emergido como aspectos cruciales que demandan atención y escrutinio académico. (Zhang et al., 2019)

1.1.3 Estrés laboral en el personal de enfermería

El estrés en el personal de enfermería se revela como un fenómeno universal que compromete no solo la salud física y mental de los profesionales, sino también la calidad misma de la atención dispensada (Halpin et al., 2017).

En este contexto, el análisis del estrés laboral y los riesgos psicosociales constituye una línea de investigación esencial, particularmente en el caso de las enfermeras recién graduadas, cuya transición al ámbito clínico profesional representa una etapa de especial vulnerabilidad.

1.1.4 La transición de las enfermeras recién graduadas al ámbito clínico

La transición de las enfermeras recién graduadas desde el ámbito académico hasta el exigente mundo laboral se erige como un proceso que acarrea una serie de desafíos, así como presiones mentales y psicológicas (Labrague & McEnroe-Petitte, 2018). En su ingreso a la práctica clínica, estas profesionales experimentan tensiones que oscilan desde la dificultad en la comunicación hasta dilemas éticos y una carga de trabajo abrumadora (Feeg et al., 2022). La carencia de habilidades necesarias y la falta de una orientación adecuada contribuyen al incremento del estrés y, en no pocas ocasiones, al advenimiento de fatiga emocional y agotamiento (Labrague & McEnroe-Petitte, 2018).

Comprender las dinámicas que configuran esta realidad requiere un marco teórico que integre las principales corrientes explicativas en torno a la organización del trabajo, la salud laboral, el desarrollo profesional y la psicología del estrés.

1.1.4 Modelos teóricos aplicados al estudio del estrés de enfermería

1.1.4.1 Modelo Demandas-Recursos Laborales (Job Demands-Resources Model)

Uno de los marcos conceptuales más influyentes para el estudio del estrés laboral en enfermería es la Teoría del Desgaste Específico del Trabajo (Job Demands-Resources Model) propuesta por Bakker y Demerouti. Esta teoría se centra en la relación entre las demandas específicas del trabajo en enfermería, como la carga emocional y la intensidad laboral, y los recursos disponibles para afrontar dichas demandas. Este modelo permite explicar cómo la escasez de recursos, como el apoyo institucional o la autonomía en la toma de decisiones, puede amplificar los efectos negativos de demandas como la sobrecarga de trabajo, las urgencias clínicas y la responsabilidad asistencial. Además, la comprensión de estos elementos específicos puede arrojar luz sobre los factores que contribuyen al estrés laboral en el contexto de la enfermería, destacando la importancia de abordar tanto las demandas del trabajo como la promoción de recursos para mejorar el bienestar de los profesionales de enfermería (Bakker, 2017).

1.1.4.2 Teoría del desarrollo de competencias de Patricia Benner

Paralelamente, la teoría de Patricia Benner sobre el desarrollo de competencias en enfermería ofrece una perspectiva enriquecedora sobre cómo las enfermeras progresan desde un nivel de desempeño principiante hacia niveles más expertos. Benner identifica cinco niveles de competencia: principiante, principiante avanzado, competente, eficiente y experto. A medida que las enfermeras avanzan en su trayectoria profesional, adquieren competencias técnicas y habilidades clínicas que les permiten abordar las complejidades de la atención médica. Sin embargo, este desarrollo de competencias también puede exponerlas a mayores demandas y responsabilidades, lo que, en algunos casos, puede contribuir al estrés laboral. La transición de niveles como principiante avanzado a experto conlleva la asunción de roles más críticos y decisiones fundamentales, aumentando la carga psicológica y emocional. La interacción entre el desarrollo de competencias y el estrés laboral

destaca la importancia de implementar estrategias de apoyo y gestión del estrés a lo largo de la carrera profesional de las enfermeras (Benner, 1984).

1.1.5 El entorno clínico de alta exigencia: urgencias y primeros años de ejercicio profesional

Este desafío adquiere una especial relevancia en entornos clínicos de alta exigencia, como los servicios de urgencias, donde las condiciones laborales pueden intensificar las vulnerabilidades propias de las profesionales noveles. En este ámbito, la elevada presión asistencial, la necesidad de tomar decisiones rápidas y la sobrecarga de trabajo son factores inherentes que afectan de manera significativa durante los primeros meses de ejercicio (Labrague & McEnroe-Petitte, 2018). La inseguridad y la ansiedad derivadas de la toma de decisiones en situaciones críticas, unidas a la brecha entre la formación académica y la práctica clínica, pueden dificultar la integración en el equipo y la aplicación de conocimientos en contextos de alta exigencia (Feeg et al., 2022). Asimismo, la insuficiencia de programas de orientación y la supervisión inadecuada incrementan la desconexión entre las expectativas laborales y la realidad del entorno (Havaei et al., 2017), favoreciendo la aparición de síntomas de burnout como agotamiento emocional, despersonalización y baja realización personal (Lasalvia et al., 2020). La falta de apoyo organizacional y de oportunidades de mentoría limita la adquisición de competencias y acentúa el riesgo de abandono temprano de la profesión, que en algunos contextos puede alcanzar cifras cercanas al 60% en el primer año (Rodríguez Chicaiza & Acosta Yansapanta, 2023). Frente a ello, se han señalado como medidas efectivas la mejora en la distribución de la carga laboral, la creación de entornos colaborativos, la oferta de apoyo psicológico y la incorporación de estrategias individuales de afrontamiento como el mindfulness o la terapia cognitivo-conductual (Salin et al., 2023).

1.1.6 Riesgos psicosociales en el ámbito de la enfermería

En el mismo sentido, la conceptualización de los riesgos psicosociales ofrece una base teórica imprescindible para analizar los factores estructurales del entorno de trabajo que afectan a la salud mental de los trabajadores. Según la definición de Leka y colaboradores, los riesgos psicosociales del entorno laboral son definidos como un conjunto de factores que pueden perjudicar a la salud mental y a la salud física de los trabajadores. Estos riesgos van desde la sobrecarga de trabajo y la alta intensidad de

las demandas emocionales, hasta la falta de autonomía laboral, el apoyo insuficiente de los compañeros y las condiciones laborales abusivas en el entorno de trabajo (Leka et al., 2010). Los riesgos psicosociales son especialmente más comunes en las profesiones sanitarias por la naturaleza exigente y estresante de los puestos que ocupan, caracterizados por las largas jornadas de trabajo, una alta presión y el contacto constante con el sufrimiento humano (Lasalvia et al., 2020).

En concreto, las enfermeras se enfrentan a riesgos psicosociales específicos que pueden afectar tanto a su bienestar personal como a la calidad de la atención que proporcionan a los pacientes (Havaei et al., 2017). Entre ellos podemos identificar algunos como la sobrecarga de trabajo, los conflictos de rol, la falta de claridad en las responsabilidades, el acoso laboral y un apoyo organizacional insuficiente (Orozco-Vásquez et al., 2019). Estos factores no sólo influyen directamente sobre la salud mental de las enfermeras, sino que también pueden afectar a su práctica profesional y, por consiguiente, a la calidad del cuidado que brindan (Liu et al., 2019).

1.1.7 La salud ocupacional y su papel en la gestión del estrés laboral

Otro pilar fundamental para la comprensión del estrés laboral en enfermería y su impacto en la salud de las profesionales lo constituye el enfoque de la Seguridad y Salud Ocupacional (Occupational Health and Safety, OSH), el cual se ha consolidado como una disciplina esencial en la gestión de riesgos laborales. Esta disciplina abarca la prevención, identificación, evaluación y control de todos aquellos factores que puedan amenazar la salud física y mental de los trabajadores dentro y fuera del entorno laboral (Haidarravy et al., 2023). Su relevancia ha crecido de forma exponencial ante el alarmante incremento en la incidencia de accidentes y enfermedades relacionadas con el trabajo, que en cifras globales ascienden a aproximadamente 2.3 millones de muertes anuales, de las cuales 350,000 se atribuyen a accidentes laborales y el resto a enfermedades crónicas o agudas originadas en el entorno ocupacional (Haidarravy et al., 2023; Rushton, 2017).

En este panorama, los riesgos psicosociales han cobrado protagonismo como una categoría de peligros laborales que, aunque no siempre visibles, afectan profundamente la integridad del trabajador. Estos riesgos incluyen condiciones

organizacionales, relaciones interpersonales y demandas laborales que pueden interferir en la salud física, el equilibrio emocional y el bienestar general de los empleados (Mohanty et al., 2019). En el campo de la enfermería, este tipo de riesgos resulta especialmente relevante debido a la naturaleza multifacética y emocionalmente demandante del trabajo, que involucra desde la exposición prolongada al sufrimiento humano hasta la gestión simultánea de múltiples tareas críticas.

Diversos estudios subrayan que el personal de enfermería se encuentra particularmente expuesto a factores como lesiones musculoesqueléticas, exposición a sustancias biológicas o químicas peligrosas, agresiones físicas y verbales, y situaciones de violencia laboral, que interactúan de forma compleja con los factores psicosociales, intensificando el estrés laboral y aumentando la prevalencia del burnout (Mohanty et al., 2019; Luengo-Martínez & Sanhueza, 2016). Además, la doble presencia, entendida como la coexistencia de demandas laborales y familiares, emerge como un factor de riesgo distintivo, especialmente entre las enfermeras, quienes deben conciliar turnos exigentes con responsabilidades familiares, lo que incrementa significativamente su carga mental (Moctezuma Sánchez et al., 2023).

1.1.8 Herramientas de evaluación de riesgos psicosociales en entornos sanitarios

En este contexto, se ha hecho necesario el desarrollo de herramientas robustas para la evaluación sistemática de los riesgos psicosociales en entornos sanitarios. Entre las más reconocidas se encuentran el Job Content Questionnaire (JCQ) (Escribà-Agüir et al., 2001), el Effort-Reward Imbalance Questionnaire (ERI) (Siegrist, 1996) y el Copenhagen Psychosocial Questionnaire (COPSOQ) (Pejtersen et al., 2010). En particular, destaca el SUSESO/ISTAS21, una versión adaptada del COPSOQ diseñada específicamente para el contexto español, y que ha sido recientemente validada para su aplicación en enfermería bajo la denominación ISTAS_ENFERMERÍA (Narbona-Gálvez et al., 2024). Esta herramienta permite identificar con precisión factores psicosociales críticos como las demandas emocionales, el contenido del trabajo, la autonomía, la calidad del liderazgo y el reconocimiento, siendo fundamental para el diseño de intervenciones preventivas y de apoyo específicas para el personal de enfermería (Moncada Lluís et al., 2014).

1.1.9 Bienestar laboral y calidad asistencial en enfermería

Asimismo, el bienestar laboral se ha posicionado como un eje fundamental no solo para la salud individual de los profesionales, sino también para la eficiencia organizacional. El bienestar, entendido en una acepción integral que incluye la dimensión física, psicológica y emocional del trabajador, ha sido identificado como un elemento clave en la productividad y sostenibilidad de las instituciones sanitarias (Salin et al., 2023). Las condiciones laborales inadecuadas, como la sobrecarga de trabajo, el conflicto de rol, la escasez de apoyo organizacional y la exposición continuada al dolor ajeno, se relacionan directamente con el malestar psicológico, altos niveles de agotamiento emocional y la creciente intención de abandonar la profesión (Molero Jurado et al., 2022).

1.1.10 Impacto de la pandemia COVID-19 en la salud mental de las enfermeras

En este sentido, estudios desarrollados en España muestran una clara asociación entre la exposición a riesgos psicosociales y síntomas clínicos como ansiedad, depresión y trastorno de estrés postraumático, particularmente acentuados durante y después de la crisis sanitaria provocada por la pandemia de COVID-19 (Acea-López et al., 2021; Saragih et al., 2021). Este evento global actuó como un factor catalizador, intensificando la carga de trabajo, reduciendo los recursos disponibles, e incrementando las demandas emocionales y cognitivas de forma desproporcionada, especialmente entre el personal novel (Giménez-Espert et al., 2020). Las cifras son elocuentes: estudios recientes señalan una prevalencia del 40% de ansiedad, 37% de depresión, y hasta un 49% de estrés postraumático entre los trabajadores sanitarios durante la pandemia (Saragih et al., 2021).

1.1.11 Factores estructurales y precarización laboral en enfermería

Más allá de la pandemia, existen factores estructurales que sostienen estas condiciones adversas: la precarización del empleo, los turnos prolongados, el uso intensivo de nuevas tecnologías sin una formación adecuada, la escasez de personal y el envejecimiento de la fuerza laboral representan obstáculos persistentes para la mejora del bienestar laboral (Rodríguez Chicaiza & Acosta Yansapanta, 2023; Pesonen et al., 2024). Todo ello contribuye al aumento del ausentismo, a una

disminución de la calidad asistencial y a un mayor riesgo de errores clínicos, especialmente entre las enfermeras recién incorporadas al mundo laboral.

1.1.12 Salud autopercebida como predictor del malestar general

Otra dimensión relevante que ha sido identificada como predictor del malestar laboral es la salud autopercebida, un indicador subjetivo pero significativo del estado físico y emocional del trabajador. Una baja percepción de salud se ha vinculado con mayores niveles de fatiga, desmotivación, estrés y con una intención elevada de abandonar la profesión (Becerra-Canales & Ybaseta-Medina, 2020). Esta situación puede derivar en un aumento de las bajas laborales, generando sobrecarga entre el resto del equipo y afectando la estabilidad del sistema sanitario en su conjunto (Mármol López et al., 2018).

1.1.13 Consumo de sustancias psicoactivas como estrategia de afrontamiento

Además, se ha observado una creciente preocupación por el consumo de sustancias psicoactivas como estrategia de afrontamiento frente al estrés crónico. El personal de enfermería representa un grupo especialmente vulnerable, recurriendo en algunos casos al uso de alcohol, tabaco, ansiolíticos, antidepresivos o analgésicos, muchas veces sin supervisión médica y como mecanismos informales de regulación emocional (Pien et al., 2025). Este fenómeno, aún considerado tabú dentro del sector sanitario, pone en riesgo tanto la salud de las profesionales como la calidad y seguridad del cuidado brindado (Villanueva-Blasco et al., 2024).

1.1.14 Síntesis teórica: hacia un abordaje multifactorial del estrés y los riesgos psicosociales en enfermería

En suma, el abordaje teórico de los riesgos psicosociales y del estrés laboral en enfermería requiere una mirada multifactorial que integre la salud ocupacional, la psicología del trabajo, los modelos de organización laboral y el desarrollo profesional. El reconocimiento de estas variables no solo permite comprender en mayor profundidad los factores que afectan al personal de enfermería, sino que además sienta las bases para la formulación de estrategias eficaces de intervención, orientadas a mejorar su bienestar y garantizar una atención sanitaria de calidad.

1.2 ANTECEDENTES.

1.2.1 Riesgos psicosociales en la profesión de enfermería: un problema global de salud laboral

La profesión de enfermería ha sido objeto de un gran número de investigaciones orientadas a comprender los riesgos psicosociales asociados a la práctica clínica. La evidencia acumulada a nivel internacional muestra que este colectivo enfrenta un entorno de trabajo particularmente hostil, donde confluyen exigencias físicas, emocionales y sociales que se traducen en un riesgo elevado de trastornos de salud física y mental (Rushton, 2017). Informes globales señalan que aproximadamente 59 millones de trabajadores sanitarios presentan anualmente enfermedades o accidentes vinculados con su actividad, con un impacto económico estimado del 4% del PIB mundial (Che Huei et al., 2020). Esta magnitud ha motivado un creciente interés en la investigación de factores psicosociales, considerados actualmente como un componente esencial en la salud laboral (Mondragón-Soto et al., 2022).

1.2.2 impacto de las condiciones laborales en la calidad asistencial

La literatura ha documentado que las enfermeras están expuestas de manera constante a riesgos tales como la sobrecarga de trabajo, la rotación de turnos, las demandas emocionales intensas, los conflictos de rol, la falta de autonomía y el escaso apoyo organizacional (Leka et al., 2010; Orozco-Vásquez et al., 2019). Estos factores, de forma aislada o combinada, se han vinculado con un mayor riesgo de errores clínicos, la aparición de eventos adversos y un descenso en la calidad asistencial (Friganović et al., 2019; Bogaert et al., 2017). En España, estudios recientes confirman esta asociación: se han identificado prevalencias de burnout superiores al 30% entre enfermeras hospitalarias, con una clara relación entre agotamiento emocional, cargas asistenciales excesivas y una menor satisfacción de los pacientes (Aceá-López et al., 2021; Molero Jurado et al., 2022).

1.2.3 Salud mental del personal de enfermería: ansiedad, depresión y burnout

En relación con la salud mental, revisiones sistemáticas muestran prevalencias de ansiedad entre el 25% y el 40%, depresión en torno al 30% y burnout en cifras que oscilan entre el 25% y el 45% en personal de enfermería (Saragih et al., 2021). Durante la pandemia de COVID-19, estas cifras alcanzaron niveles aún más alarmantes, con hasta un 49% de los profesionales reportando síntomas compatibles con estrés postraumático (Giménez-Espert et al., 2020). En España, la literatura indica que las enfermeras fueron uno de los colectivos más afectados, presentando un deterioro notable de la salud mental autopercebida, que se asoció con mayores niveles de absentismo, fatiga y reducción de la motivación laboral (Becerra-Canales & Ybaseta-Medina, 2020).

1.2.4 Vulnerabilidad de las enfermeras jóvenes y recién graduadas

El impacto de estos riesgos no es homogéneo en todo el colectivo. Existen diferencias relevantes según la edad, el género y la experiencia profesional. Las enfermeras jóvenes y recién graduadas representan un grupo especialmente vulnerable. Diversos estudios longitudinales muestran que los primeros doce meses de ejercicio están marcados por altos niveles de estrés, con picos de mayor intensidad hacia los cuatro y ocho meses tras la incorporación laboral (Fang et al., 2022). Estas tensiones se asocian con sentimientos de inseguridad, falta de competencias, dificultades en las relaciones interpersonales y problemas para manejar la sobrecarga de pacientes (Feeg et al., 2022). En algunos contextos, hasta el 60% de los enfermeros noveles abandona su primer empleo antes de cumplir un año, lo que refleja la magnitud del problema y el coste para las instituciones sanitarias (Halpin et al., 2017).

1.2.5 Diferencias de género, edad y estrategias de afrontamiento

La literatura también muestra diferencias de género: las enfermeras mujeres refieren mayor nivel de doble presencia y conciliación conflictiva entre vida laboral y familiar, mientras que en hombres la sobrecarga laboral tiende a vincularse más con la fatiga física y las alteraciones del sueño (Moctezuma Sánchez et al., 2023). La edad, por su parte, se asocia con distintos perfiles de afrontamiento: profesionales de mayor

experiencia tienden a reportar mejores mecanismos de regulación emocional y estrategias de resiliencia, lo que amortigua parcialmente el impacto de las demandas laborales (Hoeve et al., 2020).

1.2.6 Repercusiones físicas del estrés y costes organizacionales

A nivel físico, la exposición prolongada al estrés se combina con las demandas ergonómicas de la profesión, dando lugar a una elevada prevalencia de trastornos musculoesqueléticos, problemas cardiovasculares y fatiga crónica (Cargnin et al., 2019). Estos efectos tienen un coste organizacional importante, ya que el absentismo y la reducción del rendimiento clínico repercuten directamente en la continuidad asistencial y en la seguridad de los pacientes (Molero Jurado et al., 2022).

1.2.7 Variables laborales asociadas al estrés y la precariedad en España

La evidencia empírica también ha explorado la relación entre riesgos psicosociales y variables laborales. Estudios realizados en Europa destacan que la rotación de turnos y las jornadas prolongadas incrementan significativamente la probabilidad de presentar burnout y problemas de salud mental (Pesonen et al., 2024). En el caso español, se ha descrito que los contratos temporales, la precariedad laboral y la alta rotación de personal son factores que intensifican la percepción de inseguridad y la intención de abandonar la profesión (Rodríguez Chicaiza & Acosta Yansapanta, 2023). Asimismo, el déficit de plantillas, unido a la creciente complejidad de los cuidados, ha contribuido a mantener niveles crónicos de sobrecarga laboral.

1.2.8 Consumo de sustancias psicoactivas como estrategia de afrontamiento

Otro campo de creciente interés es el análisis del consumo de sustancias psicoactivas en enfermería. Se ha observado que, como estrategia informal de afrontamiento frente al estrés, algunos profesionales recurren al consumo de alcohol, tabaco, ansiolíticos o analgésicos opioides (Villanueva-Blasco et al., 2024). Aunque todavía poco visibilizado en la literatura, este fenómeno supone un riesgo tanto para la salud del profesional como para la seguridad de los pacientes, y ha sido señalado como un problema emergente en la investigación reciente (Pien et al., 2025).

1.2.9 Evaluación de riesgos psicosociales: instrumentos y validaciones en enfermería

En cuanto a la evaluación de los riesgos psicosociales, la literatura ha empleado diversos instrumentos. El Job Content Questionnaire (JCQ), el Effort-Reward Imbalance (ERI) y el Copenhagen Psychosocial Questionnaire (COPSOQ) han sido ampliamente utilizados en estudios internacionales, permitiendo establecer asociaciones consistentes entre demandas laborales, bajo control percibido, escaso apoyo social y salud mental deteriorada (Karasek, 1979; Siegrist, 1996). El desarrollo del SUSESO/ISTAS21 como adaptación del COPSOQ ha representado un avance fundamental en contextos hispanohablantes, siendo considerado un instrumento sólido y aplicable en diferentes sectores (Pejtersen et al., 2010). Estos hallazgos resultan especialmente relevantes para el diseño de políticas de prevención y programas de intervención dirigidos al personal de enfermería.

1.2.10 Factores personales y de salud en la interacción con los riesgos psicosociales

Finalmente, la interacción de los riesgos psicosociales con variables personales y de salud ha sido objeto de creciente interés. Se ha demostrado que una percepción de mala salud autopercebida se asocia con mayor absentismo, fatiga y baja motivación (Becerra-Canales & Ybaseta-Medina, 2020). También se han descrito asociaciones entre los riesgos psicosociales y el deterioro del sueño, con consecuencias en la seguridad clínica y en la intención de permanencia en el puesto de trabajo (Chen et al., 2021; An et al., 2022). A nivel protector, el apoyo de los equipos de trabajo y la percepción de competencia clínica actúan como factores que amortiguan los efectos del estrés y favorecen la retención profesional (Hoeve et al., 2020).

1.2.11 Síntesis de antecedentes: riesgos psicosociales como prioridad en salud laboral

En síntesis, los antecedentes muestran de manera consistente que los riesgos psicosociales en enfermería constituyen un problema de salud laboral prioritario, con repercusiones directas en el bienestar individual, la calidad asistencial y la sostenibilidad de los sistemas sanitarios. La validación y aplicación de herramientas como el SUSESO/ISTAS21 en el contexto español supone un paso clave para

profundizar en el análisis de estos riesgos y en su interacción con variables personales, laborales y de salud, abriendo la puerta a intervenciones más precisas y efectivas orientadas a proteger a este colectivo profesional.

2 OBJETIVOS

2.1 OBJETIVO GENERAL

El objetivo de esta tesis fue analizar los riesgos psicosociales en enfermeras españolas a través de la validación del SUSESO/ISTAS21 y su asociación con variables personales, laborales y de salud.

2.2 OBJETIVOS ESPECÍFICOS

1. Proporcionar una visión completa y detallada de los desafíos que enfrenta la profesión de enfermería mediante la exploración de diferentes enfoques y perspectivas, con la intención de ofrecer información valiosa que contribuya a la formulación de políticas y prácticas más efectivas que se centren en el bienestar de los profesionales y la calidad de la atención al paciente.
2. Adaptar y realizar el estudio psicométrico del cuestionario SUSESO/ISTAS21 en enfermeras españolas.
3. Evaluar los riesgos psicosociales en una muestra de enfermeras de España.
4. Analizar la relación entre la percepción de riesgos psicosociales y diversas variables sociodemográficas, laborales y de salud en profesionales de enfermería en España.

3 MATERIAL Y MÉTODOS

El estudio de investigación desarrollado en la presente Tesis se organizó en tres fases.

En la primera, se llevó a cabo una revisión sistemática con el objetivo de proporcionar una visión completa y detallada de los desafíos que enfrenta la profesión de enfermería mediante la exploración de diferentes enfoques y perspectivas (objetivo 1).

En la segunda fase, se realizó un estudio descriptivo transversal de adaptación transcultural y validación psicométrica del cuestionario SUSESO/ISTAS21 en una muestra de enfermeras españolas (objetivo 2).

Finalmente, en la tercera fase, se desarrollaron dos estudios descriptivos transversales basados en cuestionarios autoadministrados, dirigidos a evaluar los riesgos psicosociales y analizar su relación con variables sociodemográficas, laborales y de salud en profesionales de enfermería en España (objetivos 3 y 4).

3.1 Fase 1. Revisión y descripción de la evidencia disponible: análisis bibliográfico

3.1.1 Diseño del estudio

Para atender al objetivo 1, se planteó una revisión sistemática basada en un protocolo previamente elaborado con el fin de garantizar la transparencia del proceso y minimizar el riesgo de sesgo de publicación y de selección. La revisión se llevó a cabo siguiendo las directrices de la declaración PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). La estrategia de búsqueda se diseñó a partir de la formulación de la pregunta de investigación siguiendo el modelo CoCoPop (Munn et al., 2018). Las búsquedas se realizaron en las bases de datos electrónicas PubMed, Scopus, Web of Science y CINAHL, generando la ecuación de búsqueda final recogida en la Tabla 1.

Tabla 1. Formato CoCoPop: palabras clave.

Condición	Estrés
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Contexto	Trabajar en contextos anteriormente no experimentados
Población	Enfermeras noveles/enfermeras
Pregunta de investigación	<i>¿Cuál es la prevalencia del estrés en enfermeras noveles y enfermeras que trabajan en un contexto anteriormente no experimentado?</i>

A raíz de estas palabras clave se consultó al tesauro *Medical Subject Headings* (MeSH) arrojando los descriptores *Disabled Persons*, *barriers* y *universities*. Con el objetivo de mejorar la captación de estudios publicados acordes a la temática de estudio, se recurrió al uso de términos sinónimos capaces de completar la estrategia de búsqueda completar la misma en base a los descriptores MeSH, siendo unidos mediante los operadores booleanos *and* y *or*. La **Tabla 2** recoge la estrategia de búsqueda empleada, realizada el día 02 de marzo de 2024 para cada una de las bases de datos anteriormente citadas durante el proceso de búsqueda.

Tabla 2. Estrategia de búsqueda empleada para cada base de datos.

Base de datos	Estrategia de búsqueda	Resultados
Pubmed	(Psychological Stress[Title/Abstract] OR Life Stress[Title/Abstract] OR Psychological Distress[Title/Abstract] OR Emotional Distress[Title/Abstract] OR Emotional Stress[Title/Abstract] OR Job stress[Title/Abstract] OR Occupational Stress[Title/Abstract] OR Work-related Stress[Title/Abstract] OR Workplace Stress[Title/Abstract] OR Professional Stress[Title/Abstract] OR Job-related Stress[Title/Abstract]) AND (novice nurs*[Title/Abstract] OR new* graduate nurs*[Title/Abstract] OR junior nurs*[Title/Abstract] OR new nurs*[Title/Abstract])	109
Scopus	(TITLE-ABS-KEY ("novice nurs*" OR "new* graduated nurs*" OR "junior nurs*" OR "new nurs*") AND TITLE-ABS-KEY ("Psychologic* Stress*" OR "Life Stress*" OR "Psychological Distress" OR "Emotional Distress" OR "Emotional Stress*" OR "Job stress*" OR "Occupational Stress*" OR "Work-related Stress*" OR "Workplace Stress*" OR "Professional Stress*" OR "Job-related Stress*"))	101
Web Of Science	"novice nurs*" OR "new* graduated nurs*" OR "junior nurs*" OR "new nurs*" (Topic) AND "Psychologic* Stress*" OR "Life Stress*" OR "Psychological Distress" OR "Emotional Distress" OR "Emotional Stress*" OR "Job stress*" OR "Occupational Stress*" OR "Work-related Stress*" OR "Workplace Stress*" OR "Professional Stress*" OR "Job-related Stress*" (Topic)	136
CINAHL	AB ("Psychologic* Stress*" OR "Life Stress*" OR "Psychological Distress" OR "Emotional Distress" OR "Emotional Stress*" OR "Job stress*" OR "Occupational Stress*" OR "Work-related Stress*" OR "Workplace Stress*" OR "Professional Stress*" OR "Job-related Stress*") AND AB ("novice nurs*" OR "new* graduated nurs*" OR "junior nurs*" OR "new nurs*")	49
Fecha de búsqueda: 2 de marzo de 2.024		Total 395

3.1.2 Criterios de selección

Se utilizaron los siguientes criterios de selección para seleccionar los artículos:

Criterios de inclusión:

1. Idioma: Solo artículos originales publicados en inglés, español, francés o portugués.
2. Tipo: artículos originales, meta-análisis, revisiones sistemáticas, comunicaciones breves e informes de casos.
3. Población: enfermeras y enfermeras novatas que enfrentan situaciones no experimentadas previamente, considerando a las enfermeras novatas como aquellas con menos de 1 año de experiencia laboral en enfermería.
4. Artículos que midan cualquiera de los siguientes valores y/o efectos:
 - Nivel de estrés de enfermeras y enfermeras novatas en situaciones que no han experimentado antes.
 - Factores estresantes inherentes a la práctica de la enfermería.

Criterios de exclusión:

1. Se excluyeron los estudios que fueron clasificados como de baja calidad científico-técnica tras la aplicación de la herramienta de evaluación de calidad. Esta evaluación fue realizada por dos evaluadores de forma independiente, ambos determinaron la calidad metodológica de los estudios seleccionados.
2. Se excluyeron los artículos que no abordaban directamente la pregunta de investigación y aquellos que no estaban relacionados con los objetivos de la revisión, asegurando que todos los estudios incluidos hicieran una contribución significativa a la comprensión del estrés de las enfermeras novatas en nuevos entornos laborales.
3. Se excluyeron ciertos tipos de publicaciones, como artículos de opinión, editoriales y cartas al editor, ya que estos tipos de artículos no proporcionan datos empíricos que se ajusten a los objetivos de esta revisión.

3.1.3 Recolección y extracción de datos

Dos investigadores realizaron búsquedas independientes, eliminaron estudios duplicados y seleccionaron artículos para inclusión basándose en criterios previamente establecidos tras leer el resumen y el título. Posteriormente, el texto completo de los estudios potencialmente elegibles fue revisado por los mismos dos autores, y las decisiones de incluir o excluir estudios se tomaron por consenso. Cualquier discrepancia se resolvió por un tercer autor.

3.1.4 Evaluación de la calidad metodológica

La calidad metodológica de los estudios seleccionados fue determinada de manera independiente por dos revisores utilizando las Herramientas de Evaluación Crítica para Ensayos del Instituto Joanna Briggs (JBI) en la Universidad de Adelaida (16). Estas herramientas permiten la evaluación de la calidad metodológica de un estudio y la identificación de cualquier sesgo potencial en su diseño, realización y/o análisis. Para asegurar la consistencia y fiabilidad en la evaluación, los revisores se reunieron antes de comenzar el proceso para discutir y unificar criterios. Se utilizaron las versiones para estudios transversales cuantitativos (8 ítems), estudios cualitativos (10 ítems), revisiones sistemáticas (11 ítems) y estudios de cohorte (11 ítems), con un punto de corte de 6 para los dos primeros y 8 para los dos últimos para aceptar su inclusión en esta revisión. Este proceso de evaluación se detalla en el material suplementario, que también incluye una tabla que resume las puntuaciones de calidad para cada estudio incluido.

3.1.5 Limitaciones

A pesar de que esta investigación ha ayudado al conocimiento actual sobre el estrés de las enfermeras noveles, se identificaron en ella algunas limitaciones. La heterogeneidad en las responsabilidades de las enfermeras debido a la diversidad de países analizados ha generado dificultades para comparar los resultados de una manera equitativa. Las variaciones en contextos laborales, políticas de salud y recursos disponibles introducen sesgos potenciales y limitan la generalización de los hallazgos. Además, la obtención de estudios cualitativos en la búsqueda constituye otra limitación, ya que, aunque proporcionan una comprensión profunda, su naturaleza exploratoria dificulta la extrapolación de resultados a poblaciones más extensas. Finalmente, la categorización de la experiencia de una enfermera, determinando cuándo se considera novel y cuándo no, ha presentado un desafío adicional en el proceso de evaluar la idoneidad de incluir un estudio dentro de la población de interés.

3.2 Fase 2. Adaptación y estudio psicométrico del cuestionario SUSESO/ISTAS21 en enfermeras españolas

3.2.1 Diseño

Estudio descriptivo transversal de adaptación transcultural y validación psicométrica de un cuestionario previamente validado.

3.2.2 Instrumento

El cuestionario inicial utilizado para este estudio fue la versión breve del cuestionario adaptado y validado en Chile del Cuestionario COPSOQ-ISTAS21 (Candia et al, 2016).

Esta escala, que se basa en el Copenhagen Psychosocial Questionnaire desarrollado por el Instituto de Salud y Ambiente Laboral de Dinamarca, fue traducida y adaptada culturalmente para su uso en Chile (Candia et al, 2016). En esta validación la consistencia interna total, medida por el alfa de Cronbach, fue de 0.85, lo que indica una buena fiabilidad. Para las subescalas, los valores de alfa de Cronbach fueron de 0.80 para 'Demanda Psicológica', 0.83 para 'Control de Trabajo', 0.82 para 'Apoyo Social' y 0.79 para 'Inseguridad Laboral'. Además, los análisis factoriales confirmatorios (AFC) apoyaron la estructura de la escala, mostrando índices de ajuste satisfactorios (CFI = 0.92, TLI = 0.91, RMSEA = 0.05), lo que confirma la validez de constructo de la versión chilena.

La versión breve del cuestionario contiene 20 preguntas agrupadas en 5 dimensiones, que son:

- I. Exigencias psicológicas en el trabajo: engloba factores tanto cualitativos como cuantitativos en el ámbito laboral.
- II. Trabajo activo y desarrollo de habilidades: recoge elementos sobre la autonomía del trabajador.
- III. Apoyo social en la empresa y calidad del liderazgo: sobre el apoyo laboral recibido y elementos de liderazgo.
- IV. Compensaciones: elementos sobre el balance esfuerzo-recompensa.
- V. Doble presencia: recoge elementos sobre las tareas domésticas y las propias del trabajo.

El cálculo de puntuaciones del cuestionario SUSESO/ISTAS21 se lleva a cabo directamente con los puntos obtenidos, sin transformarlos en porcentajes. La sumatoria simple de los puntos totales obtenidos entrega el puntaje de cada dimensión. La escala de respuesta es de tipo Likert de 4 puntos, donde 0 es el valor más favorable y 4 el más desfavorable.

3.2.3 Participantes

Se consideró población de estudio a las 325.018 enfermeras españolas colegiadas en España (Instituto Nacional de Estadística, 2020) Para esta población se estimó una muestra necesaria de 384 enfermeras, con un error del 5%, una confianza del 95% y una heterogeneidad del 50%. No obstante, se recogieron datos de 2757 enfermeras.

Como criterios de inclusión se siguieron: i) enfermeras que desarrollan una labor asistencial en centros sanitarios, independiente de la naturaleza pública o privada de los mismos, ii) residentes en el territorio nacional (España), iii) enfermeras en activo y, iv) que hayan otorgado el consentimiento informado. Los criterios de exclusión fueron: i) cuestionarios no cumplimentados en su totalidad.

3.2.4 Procedimiento

3.2.4.1 Adaptación de la escala ISTAS

En primer lugar, se llevó a cabo una adaptación cultural de la escala mediante un panel de expertos mediante la técnica Delphi. La composición de los expertos seleccionados se hizo según su grado académico (máster para el caso de los titulados universitarios, estudios de secundaria para el alumnado y Grado de Doctor para la profesora de Universidad), área de experticia (enfermería, psicología, gestión y/o medicina preventiva), experiencia (más de 10 años para los ya titulados, sin experiencia para el alumnado y experiencia de 1 años a los recién egresados) y su relación con el área temática concreta. Los participantes del panel de expertos fueron identificados por su afiliación al Servicio Nacional de Salud, mediante consulta directa en el sitio web oficial del organismo. Se les envió un correo electrónico solicitando su participación, el cual incluía información sobre el proyecto y la solicitud expresa de participar como experto, bajo las premisas de confidencialidad y voluntariedad.

Se seleccionaron 2 psicólogos/as con amplios conocimientos en validación de escalas, 1 profesora de Bioestadística, 1 alumna de Grado de Enfermería de 4º y 1 alumno de Grado de Enfermería de 3º, 1 decano de Enfermería, 2 supervisoras de Enfermería, 2 recién egresados (Curso 22/23) y 1 enfermero egresado hacía 2 años. Este panel de expertos conformado por 6 mujeres y 6 hombres fue seleccionado con el fin de garantizar una representación adecuada para la validación de la escala en el contexto específico de estudio.

El panel de expertos revisó la escala original, la cual estaba redactada en español chileno, con el objetivo de evaluar su aptitud y relevancia cultural para el contexto al que se destina su aplicación. Durante la revisión, los expertos analizaron cada ítem de la escala en términos de claridad, pertinencia y adecuación cultural. Se llevó a cabo una reunión de consenso en julio de 2023, en la cual los expertos discutieron y evaluaron cada ítem, con el propósito de determinar si era necesario realizar modificaciones en la redacción.

3.2.4.2 Estudio de campo para la recogida de datos

Se llevó a cabo una prueba piloto del cuestionario en la que participaron diez sujetos. El objetivo de la prueba fue evaluar la comprensión del cuestionario, detectar posibles errores de escritura o ambigüedades en su formulación y conocer el tiempo total de cumplimentación de la herramienta. Los participantes fueron seleccionados para su participación voluntaria en el estudio a través del Colegio General de Enfermería de España, y representaron adecuadamente el perfil de la población objetivo.

Tras resultados de esta fase preliminar, se respaldó la decisión de proceder con la aplicación del cuestionario en el estudio empírico, por lo que se inició el estudio de campo para la recopilación de datos. Para ello, se creó un formulario en línea utilizando el software Google Forms © que contenía los ítems de la escala junto con variables sociodemográficas relevantes para el estudio. Antes de acceder a las preguntas del cuestionario, se requería que todos los sujetos participantes en el estudio leyesen y firmasen el consentimiento informado, confirmando que su participación es voluntaria. Se aseguró que los participantes estaban plenamente informados de que sus datos eran tratados de manera anónima y únicamente con fines de investigación.

La difusión del estudio se realizó a través de diversos medios y canales, incluyendo redes sociales, correos electrónicos dirigidos a profesionales del ámbito de la enfermería, sitios web especializados y colaboraciones con asociaciones y organizaciones profesionales de Enfermería relacionadas. La recogida de datos se llevó a cabo entre el 01 de agosto al 31 de octubre de 2023.

3.2.5 Variables

Se incluyeron variables sociodemográficas, y de escala. Así, se consideraron las variables de género (hombre, mujer, no binario o si prefiere no decirlo), edad, estado civil (soltero/a, casado/a, en pareja no convivientes, en pareja convivientes, separado/a, divorciado/a o viudo/a), puesto actual que ocupa, nivel de estudios cursados y finalizados, y provincia donde trabaja

En cuanto a las variables laborales, en primer lugar se incluyen aspectos como bajas por enfermedad (tipo y frecuencia), número de servicios donde ha trabajado, entidad y puesto actual que ocupa, tiempo en la unidad actual, relación laboral que presenta con el puesto de trabajo, tipo de contrato, horario laboral (y sus características específicas como rotaciones, frecuencia y aviso), el nivel de estrés y ansiedad que le produce dicha rotación, el nivel de competencia laboral y cómo le afecta dicha competencia a la seguridad laboral, si existen cambios en su jornada laboral, si trabaja en otro sitio y experiencias laborales previas (rechazo o aceptación de contratos debido a la experiencia), efectos de la falta de experiencia en el bienestar (alteraciones en el sueño, ansiedad o inseguridad).

En cuanto a las variables de salud se han incluido preguntas sobre la presencia de enfermedades crónicas, el grado de salud que presenta, el nivel de estrés, si se encuentra de baja por enfermedad, si es así, tipo de baja, la frecuencia de consumo de diferentes sustancias: alcohol, tabaco, cannabis, heroína, anfetaminas, benzodiacepinas y antidepresivos.

La recopilación de información sobre las variables de escala se realizó a través del Cuestionario SUSES/ISTAS21.

3.2.6 Análisis de los datos

Los análisis descriptivos univariados y bivariados se realizaron utilizando el software SPSS Statistics © v26 (27) (IBM Corporation, 2022). Se llevó a cabo la prueba de Kolmogorov-Smirnov, que arrojó un valor de $p < 0,005$, indicando una distribución no normal de los datos y la consiguiente aplicación de pruebas no paramétricas en el análisis de contraste bivariado, como H de Kruskal Wallis o Tau B de Kendall. Para explorar la estructura factorial de la escala ISTAS_Enfermería, se realizó un análisis factorial exploratorio utilizando el método de componentes principales.

Este método, apropiado para datos con distribución no normal y búsqueda de soluciones factoriales estables, empleó la rotación varimax para correlacionar los factores (29) (JCF de Winter & D. Dodou, 2012).

Tras ello, se ejecutó un análisis factorial confirmatorio mediante el software AMOS© (IBM Corp., 2022). Se evaluó la bondad de ajuste del modelo confirmatorio utilizando varios criterios, como el índice de Tucker-Lewis (TLI), el índice de ajuste normalizado (NFI), el índice de ajuste comparativo (CFI) (valores $\geq 0,90$ que sugieren un ajuste adecuado), el residuo cuadrático medio estandarizado (SRMR) (valores $\leq 0,08$ muestran un buen ajuste) y el error cuadrático medio de aproximación (RMSEA) (valores $\leq 0,08$ muestran un buen ajuste). (Dueber, 2017)

Para evaluar la confiabilidad, se calculó el coeficiente alfa de Cronbach y el coeficiente omega de McDonald's, este último recomendado como un indicador más robusto de la confiabilidad de la escala (33) (Z Zhang & KH Yuang, 2016). Finalmente, dado que no se utilizó ninguna escala como referencia estándar, no se calculó la curva ROC ni la validez predictiva para el estudio de la validez de criterio, aunque se identificaron niveles de riesgo psicosocial a partir del estudio de cuartiles y percentiles de la muestra.

3.2.7 Consideraciones éticas

El permiso para llevar a cabo este estudio fue otorgado por el Comité de Ética de Investigación Provincial de Huelva, con referencia 1520-N-23. Además, este estudio se adhiere a las directrices de la Declaración de Helsinki: Principios éticos para la investigación médica con sujetos humanos (35) (World Health Organization, 1964) en su última edición (Fortaleza, Brasil, 2013).

Para formar parte de este estudio, tanto en el panel de expertos como en el estudio de validación de la escala, los participantes tuvieron que confirmar su participación voluntaria y confidencial mediante un cuadro específico al que accedían para completar el cuestionario en línea.

3.2.8 Limitaciones

Este trabajo presenta algunas limitaciones que deben ser consideradas. En primer lugar, no se incluyó la validez de criterio del ISTAS_Enfermería mediante el uso de otra escala gold estándar ni curva ROC, por lo que no hay datos de validez predictiva. Asimismo, la muestra utilizada fue no probabilística y de conveniencia, lo cual podría afectar a la generalización de los resultados a toda la población de enfermeras en España. De igual forma, hacer encuestas en línea puede haber dejado fuera a algunas enfermeras con poco acceso a internet o menos habilidad con la tecnología.

En cuanto a la representatividad, la mayoría de la muestra de estudio estuvo compuesta por mujeres. Estudios previos han demostrado que las mujeres pueden percibir y experimentar el estrés laboral de manera diferente a los hombres, lo que sugiere la necesidad de explorar más a fondo estas diferencias de género en futuros estudios (López et al., 2021). Aunque el tamaño muestral alcanzado fue elevado y permitió realizar análisis estadísticamente robustos, resulta fundamental considerar que la sobrerrepresentación femenina podría introducir sesgos en la interpretación de determinados resultados, lo que justifica la necesidad de plantear estudios posteriores que contemplen una mayor diversidad en la composición de los participantes.

Por otro lado, deben mencionarse también limitaciones relacionadas con el diseño metodológico. Al tratarse de un estudio de tipo transversal, únicamente fue posible recoger datos en un momento concreto, lo que restringe la capacidad para establecer relaciones de causa y efecto entre las variables analizadas. De este modo, los hallazgos deben interpretarse como asociaciones y no como relaciones causales. Además, aunque la muestra total superó ampliamente el tamaño mínimo calculado, el procedimiento de muestreo no probabilístico por bola de nieve puede haber introducido sesgos de selección, afectando la representatividad nacional. En relación con la recogida de información, a pesar de que el cuestionario utilizado contaba con validación previa, el empleo de instrumentos de autoinforme supone un riesgo de sesgos derivados de la subjetividad y de la deseabilidad social en las respuestas.

Estos aspectos podrían haber influido en la precisión de los datos y deben tenerse en cuenta al valorar los resultados obtenidos.

Asimismo, aunque el tamaño de las submuestras permitió realizar comparaciones sólidas, la alta proporción de mujeres en la muestra (87,3 %) constituye una limitación añadida, ya que puede condicionar la interpretación de posibles diferencias de género. Este hecho no invalida los análisis, pero sí refuerza la necesidad de desarrollar investigaciones que aborden de forma específica la comparación entre hombres y mujeres en este ámbito. Además, se recomienda que futuros estudios incorporen metodologías complementarias, como aproximaciones cualitativas, que permitan explorar en mayor profundidad las experiencias y percepciones de las profesionales, así como diseños longitudinales que faciliten examinar la evolución de los fenómenos a lo largo del tiempo y su relación con diferentes variables de interés.

En relación con el análisis estadístico, otra limitación que merece atención es que el modelo aplicado consiguió explicar únicamente una parte de la variabilidad en la percepción de riesgos psicosociales (22,4 %). Este dato evidencia que existen otros factores, no contemplados en el análisis, que probablemente influyen en la manera en que los profesionales perciben los riesgos, lo cual refleja la complejidad del fenómeno y la necesidad de abordarlo desde una perspectiva multifactorial. Esta limitación se ve reforzada por el hecho de que, al tratarse de un estudio transversal, la recogida de datos en un único momento temporal no permite establecer con claridad la dirección de las asociaciones observadas. Así, aunque se identifique relación entre el estrés, el estado de salud o el uso de medicación con la percepción de riesgos psicosociales, no es posible determinar qué variable precede a las demás ni cómo se interrelacionan entre sí.

Finalmente, conviene tener presente que la participación en el cuestionario fue voluntaria y autoadministrada, lo que puede haber generado un sesgo de participación. Es probable que aquellas personas que se sintieran más afectadas por sus condiciones laborales hayan estado más motivadas para contestar, lo que podría haber influido en los resultados obtenidos y en la representatividad de la muestra. Aunque se contó con un número amplio de participantes procedentes de distintas regiones de España, la elevada proporción de mujeres (87,3 %) refleja en parte la realidad del sector, pero a la vez limita la extrapolación de los hallazgos a otros

entornos laborales o colectivos con una composición distinta. Además, debe destacarse que algunas preguntas abordaban aspectos sensibles, como el consumo de sustancias, lo que puede haber condicionado la veracidad o precisión de las respuestas, ya sea por olvido o por la dificultad de expresarse con total apertura en torno a este tipo de cuestiones. Este aspecto puede afectar a la fiabilidad de los datos y, por tanto, deberá ser tenido en cuenta en la interpretación de los resultados.

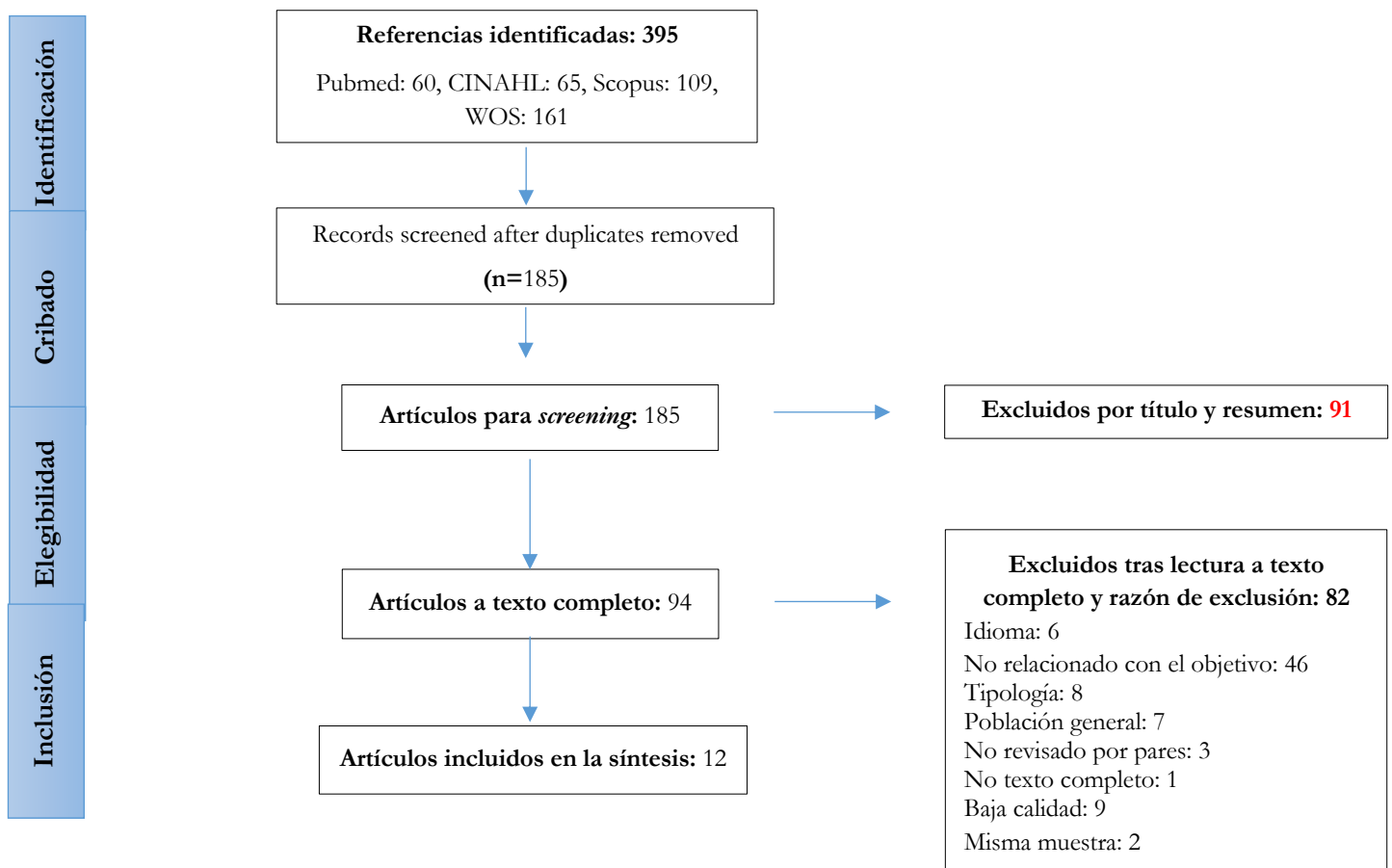
4. RESULTADOS

4.1 Resultados de la Fase 1. Revisión y descripción de la evidencia disponible: análisis bibliográfico

4.1.1 Resultados del objetivo 1. Proporcionar una visión completa y detallada de los desafíos que enfrenta la profesión de enfermería mediante la exploración de diferentes enfoques y perspectivas, con la intención de ofrecer información valiosa que contribuya a la formulación de políticas y prácticas más efectivas que se centren en el bienestar de los profesionales y la calidad de la atención al paciente.

Las estrategias iniciales de búsquedas identificaron un total de 395 referencias, las cuales fueron objeto de sucesivos cribados conforme al tópico de esta revisión. Se seleccionaron finalmente un total de 12 estudios (**Figura 1**), 8 de ellos eran estudios descriptivos de corte transversal, 2 eran estudios de cohortes, 2 estudios eran cualitativos y 1 era una revisión sistemática.

Figura 1. Resultados de la búsqueda (Diagrama de flujo - PRISMA).



Se encontraron 3 artículos realizados en China ((Fang et al., 2022); (Zhang et al., 2019); (Zhu et al., 2022)), 1 en Reino Unido (Halpin et al., 2017), 1 en Países Bajos (Hoeve et al., 2020), 1 en Omán (Labrague & McEnroe-Petitte, 2018), 1 en Estados Unidos (Feeg et al., 2022), 1 en Corea del Sur (An et al., 2022) y 1 en Sao Paulo (Alevi, 2023). Además, se añade a esta selección un artículo de revisión.

En 9 de los 12 estudios seleccionados (An et al., 2022; H. M. Chen et al., 2021; S. H. Chen et al., 2021; Fang et al., 2022; Zhang et al., 2019; Zhou et al., 2022; Feeg et al., 2022; Hoeve et al., 2020; (Alevi, 2023) la muestra estuvo conformada por enfermeras recién graduadas, mientras que en 1 los estudios seleccionados (Zhou et al., 2022) la muestra estuvo conformada por enfermeras con un año de experiencia. En otro de los artículos seleccionados (Halpin et al., 2017) la muestra estuvo conformada por enfermeras novatas al inicio de su trayectoria profesional, a los 6 meses y a los 12 meses. El último artículo que se incluye (Labrague & McEnroe-Petitte, 2018) se trata de una revisión integradora con 21 artículos de revisión incluidos.

Los estudios incluidos fueron valorados con la herramienta de evaluación crítica del JBI donde obtuvieron puntuaciones media-altas tanto en los estudios observacionales transversales y como en estudios cualitativos.

En la **Tabla 3** se muestran las características de cada uno de los 12 estudios incluidos en esta revisión. Estos fueron clasificados por autores y año de publicación, país, diseño y objetivo, participantes, instrumento y principales resultados; además, se añadió los resultados de la herramienta de evaluación crítica del JBI.

Tabla 3. Características de los estudios incluidos en la revisión sistemática.

Objetivo del estudio	Tipo de estudio	Participantes	Métodos	Principales hallazgos
Analizar los cambios en el estrés ocupacional en nuevas enfermeras durante el primer año de empleo.	Estudio analítico	Enfermeras nuevas contratadas (n=127)	NSS versión china	Los resultados mostraron que las nuevas enfermeras tenían de moderada a alto nivel de estrés en las cuatro etapas, con el nivel de estrés más alto a los 4 y 8 meses y el nivel de estrés más bajo a los 12 meses; las diferencias en las puntuaciones en los diferentes momentos fueron estadísticamente significativas ($p < 0,05$). Las tendencias en cada estresor variaron en los diferentes períodos. Los puntajes más altos fueron para la presión causada por la "asignación de tiempo y la carga de trabajo", que alcanzó su punto máximo en el mes 8. Se observó la misma tendencia para "atención al paciente" y "ambiente y equipo de trabajo". "Gestión de relaciones interpersonales" obtuvo la puntuación de estrés general más alta al comienzo y antes de disminuir. El puntaje de estrés más bajo fue de "ambiente y equipo de trabajo" al comienzo del empleo, y el más bajo fue de "dirección y relaciones interpersonales" a partir del mes 4 en adelante.
Investigar la transición en enfermeras recién graduadas explorando sus factores estresantes y experiencias de estrés durante los primeros 12 meses posteriores a la graduación.	Estudio de cohortes	Enfermeras recién graduadas: en el momento de la graduación (n=288), 6 meses después (n=107) y 12 meses después (n=86)	NSS	La carga de trabajo fue consistentemente el factor más estresante informado, y la gestión inadecuada, dando de explicación las múltiples demandas de roles en el lugar de trabajo fue un factor estresante notable. Por el contrario, ser parte de "un buen equipo" proporcionó un ambiente de trabajo civilizado, de apoyo y facilitador. Ingresar la educación de enfermería con experiencia en el cuidado de la salud tuvo un efecto mediador en la frecuencia reportada de estresantes.
Obtener información sobre los factores estresantes del trabajo organizacional más cruciales para las enfermeras novatas compromiso profesional y si los factores estresantes del trabajo están mediados por emociones	Estudio de cohortes	Enfermeras novatas (n=18)	Diario electrónico semiestructurado que evalúa: 1. Factores estresantes de trabajo organizacional 2. Emociones 3. Compromiso profesional: medido con la escala (RECS-E).	El análisis de pautas reveló que la falta de apoyo de los compañeros, las relaciones negativas con pacientes y confrontaciones con eventos existenciales fueron percibidas negativamente más fuertemente con el compromiso profesional a través de las relaciones negativas. Otros estresores laborales organizacionales relacionados indirecta y negativamente con el compromiso fueron complejidad del cuidado, falta de control y desequilibrio entre las demandas laborales contradictorias, y falta de control relacionado directamente con el compromiso profesional.
Evaluar y sintetizar la evidencia relacionada con las experiencias de estrés de las nuevas enfermeras durante el periodo de transición.	Revisión sistemática	21 artículos de revisión	PRISMA	Las nuevas enfermeras percibían niveles de estrés de bajos a moderados, principalmente debido a la gran carga de trabajo y la falta de competencia profesional de enfermeras. Las enfermeras exploraron los factores individuales y organizacionales que podrían causar experiencias de estrés.
Determinar las diferencias en los niveles de estrés laboral de las enfermeras recién graduadas en diferentes puntos de tiempo durante los primeros 3 años de práctica, identificar subgrupos potenciales de enfermeras que perciben diferentes niveles de estrés laboral a lo largo del tiempo y evaluar las diferencias en los subgrupos identificados sobre las características demográficas y relacionadas con el trabajo.	Estudio analítico	Enfermeras recién graduadas sin experiencia (n=152)	NSS	Toda la muestra de enfermeras recién graduadas experimentó una disminución en la ocupación estrés durante los primeros tres años. El modelo de trayectoria describió tres trayectorias distintas: estrés laboral bajo (19,1% de la muestra), estrés laboral medio (67,1%) y estrés laboral alto (13,8%). El subgrupo de estrés laboral bajo tenía la mayor proporción de enfermeras de Shanghái, y la mayoría estaban en contacto con enfermeras de contacto. En comparación, el subgrupo de estrés laboral alto tenía la mayor proporción de enfermeras de otras provincias (fuera de Shanghái), casi todos los participantes estaban empleados como enfermeros "bianzhi", y la mayoría de los participantes estaban asignados por turno.

Comprender las experiencias de los recién graduados de enfermería en su ambiente de trabajo y los factores estresantes percibidos durante su transición al rol de enfermera competente	Estudio cualitativo	Enfermeras recién graduadas (n=1456)	Encuesta de la NSNA	Los encuestados sintieron que una alta proporción enfermera/paciente no los pacientes en su cuidado. Los encuestados también sintieron que no podían dar atención completa a sus pacientes. Los encuestados sintieron que no había su tiempo para completar el cuidado del paciente. Después del primer análisis categórico, los investigadores discutieron en cuáles elementos individuales presentaron afirmaciones significativas o que los recién graduados trataban de encontrar el “equilibrio” en su trabajo, su expectativas e interacciones con los demás. Los temas que surgieron estaban relacionados con el "equilibrio" de los recién graduados, que reflejaba el estrés del entorno (“Mi carga de trabajo es demasiado”; expectativas sobre uno mismo (“No sé todo lo que necesito aprender”; interacciones con otros que los afectaron (“Mis relaciones con otros son difíciles”).
El estudio tuvo como objetivo explorar y comparar el estrés, el afrontamiento, la identidad profesional y el lugar de control laboral de las enfermeras recién graduadas en Shanghai, Hong Kong y Taipei.	Estudio analítico	Enfermeras con 1 año de experiencia en el hospital (n=591)	- Cuestionario PSS - Cuestionario de estilo de afrontamiento de rasgos chinos - Escala de identidad profesional de enfermería - Escala de lugar de control laboral	Las enfermeras recién graduadas en Shanghai tenían una puntuación de estrés significativamente más baja ($p < 0,05$) ($2,65 \pm 0,67$) en comparación con las de Hong Kong ($2,99 \pm 0,69$) y Taipei ($2,94 \pm 0,60$). Las enfermeras recién graduadas en Shanghai tendían a elegir un afrontamiento positivo para lidiar con situaciones de estrés, mientras que las de Hong Kong tenían más probabilidades de adoptar actitudes de evitación ($p < 0,05$). Las enfermeras recién graduadas en Taipei tenían el nivel más bajo de estrés profesional ($3,25 \pm 0,55$, $p < 0,05$) y su control laboral tendía a ser externo. En cambio, los de Shanghai ($52,75 \pm 6,04$) y Hong Kong ($59,41 \pm 7,29$) tenían controles más controlados internamente.
Examinar la intención de rotación e identificar los factores que afectan la intención de rotación de las enfermeras de la nueva Generación Z, centrándose en el estrés laboral y la alteración del sueño.	Estudio analítico	Nuevas enfermeras (n=133)	Cuestionario estructurado que incluye datos sobre estrés laboral, alteración del sueño e intención de rotación.	La mayoría de las enfermeras eran mujeres (91,7%) y aproximadamente la mitad trabajaban en la sala de cirugía (n = 61, 45,9%). La intención de rotación fue significativamente más alta que el control laboral promedio fue 40.11 y 90.7 y el sueño promedio perturbación fue 1.07 y 1.07. La intención de rotación de las enfermeras recién graduadas se asoció con el estrés laboral ($\beta = 1,07$, IC del 95 % = 1,02–1,12) y trastornos del sueño (OR = 1,19, IC del 95 % = 1,35), y este modelo explicó el 47,7% de la varianza. Los hallazgos del estudio sugieren que el estrés laboral y la alteración del sueño fueron predictores significativos de la intención de rotación en las nuevas enfermeras a la octava semana después de incorporarse.
Investigar posibles factores de estrés laboral que podrían influir en el comportamiento de las enfermeras recién contratadas para continuar o interrumpir su trabajo.	Estudio analítico	Enfermeras novatas de 20 hospitales chinos (n=564)	Cuestionario PSS.	Estimaron los efectos de seis estresores laborales de la escala de estrés percibido. Los resultados mostraron que cuatro estresores, el estrés por cuidar a los pacientes ($\beta = 0,111$, $p < .01$), estrés por roles y carga de trabajo ($\beta = 0,129$, $p < .001$), estrés por compañeros de trabajo y de la vida diaria ($\beta = 0,323$, $p < .001$) y estrés por conocimientos y habilidades profesionales ($\beta = 0,137$, $p < .001$), de la escala de estrés percibido tuvo un impacto significativo en la intención de rotación entre los novatos.
Desarrollar un Examen Clínico Estructurado Objetivo (OSCE) para evaluar la competencia clínica, el estrés laboral, la confianza y la satisfacción profesional de los enfermeros principiantes	Estudio Cuasi-experimental	Enfermeros novatos (n=55)	Cuestionario previo y posterior (modificado de un Cuestionario de Competencias de Enfermería, una escala de Estrés y una escala de Satisfacción con el Aprendizaje).	41 de los participantes (74,5 %) aprobaron el examen con una nota media de 61,3 y una tasa de aprobación significativamente mayor entre los enfermeros que trabajaban en salas médico-quirúrgicas (85,7 %) y en la unidad de cuidados intensivos de emergencia (77,8 %) en comparación con los enfermeros novatos que trabajaban en unidades. Todos los profesionales de enfermería novatos en la Estación de Emergencia mostraron un desempeño deficiente en la evaluación de pacientes con fiebre. El desempeño deficiente se asoció más con el nivel educativo y la unidad de trabajo que con el género. Los participantes mostraron aumentos estadísticamente significativos en la confianza en su competencia profesional, satisfacción con la práctica profesional y disminución del estrés laboral después del OSCE.
Explorar la competencia de las enfermeras novatas en el cuidado de enfermería y su intención de permanecer en su lugar de trabajo actual	Estudio analítico	Enfermeras novatas (n=333)	Cuestionario estructurado para evaluar los factores relacionados con la competencia de enfermería con base en los fundamentos de la educación de licenciatura para la práctica profesional de enfermería	Los resultados del presente estudio revelaron que la mayoría de los lugares de trabajo de las enfermeras novatas variaron significativamente entre el choque de trabajo y la competencia. Las enfermeras novatas tenían competencia para brindar cuidados de calidad y respetar la ética del paciente, los cuidados al final de la vida y la prevención de riesgos. Las enfermeras novatas obtuvieron el puntaje promedio más bajo en "utilización de la práctica adecuada en la conducción de equipos de atención", lo que indica una falta de práctica adecuada en la conducción de equipos de atención. Los resultados del estudio sugieren que las enfermeras novatas que tomaron cursos relacionados con el cuidado de pacientes y los programas de licenciatura en enfermería estaban más familiarizadas con los conceptos relevantes y tenían mayor conciencia de los conceptos relacionados con el cuidado de pacientes. Los resultados indicaron que los participantes estaban dispuestos a permanecer en su lugar de trabajo de enfermería actual y que la competencia de cuidado se correlacionó significativamente con la intención de permanecer. La intención de quedarse se correlacionó significativamente con el estrés clínico. El análisis de regresión por pasos reveló los siguientes factores significativos de intención de permanencia: estrés clínico, frecuencia de cuidado de pacientes y competencia de cuidado de pacientes.

					infecciosos en el lugar de trabajo, recibir cursos de enfermería en el campo, frecuencia de cuidado de pacientes en carreras profesionales de enfermería.
	Describir la prevalencia de enfermeras recién graduadas como segundas víctimas de eventos adversos y conocer las condiciones de apoyo recibidas en las instituciones de salud.	Estudio Analítico	Enfermeros (n=138)	Cuestionario online sobre las características de los participantes, la institución y eventos adversos	Se obtuvieron 240 respuestas, de las cuales 138 fueron consideradas par mayoría de los participantes eran mujeres, recién graduadas en enfermería significativo había trabajado como auxiliares o técnicos de enfermería ante Muchos estaban estudiando especializaciones o residencias profesionales. contratada sin recibir capacitación institucional y desconocían el término "se Alrededor del 27% estuvo involucrado en eventos adversos, principalmente con medicamentos. Después de estos eventos, la mayoría reportó sentimientos inseguridad, pero solo el 59.5% sintió que recibió apoyo. Algunos participantes penalizados. No se encontraron diferencias significativas entre aquellos comentarios sobre su período de capacitación y contratación y los que no, participación en eventos adversos.

NSS = The Nursing Stress Scale; RECS-E = Escala de Compromiso y Exploración Repetida en el dominio de Educación; PRISMA = Elementos preferenciales para informar sobre revisiones sistemáticas y metanálisis; NSNA = Asociación Nacional de Estudiantes de Enfermería; PSS = Perceived Stress Scale; OSCE = Examen Clínico Estructurado Objetivo

4.2 Resultados de la Fase 2. Adaptación transcultural y validación psicométrica del cuestionario SUSESO/ISTAS21 en una muestra de enfermeras españolas.

4.2.1 Resultados del objetivo 2. Adaptar y realizar el estudio psicométrico del cuestionario SUSESO/ISTAS21 en enfermeras españolas.

4.2.1.2 Estudio descriptivo: análisis de los datos obtenidos.

La muestra estuvo formada por 2764 sujetos, todos Enfermeras en activo, mayores de 18 años y residentes en España. Del total de la muestra, el 87,3% eran mujeres, con una media de edad del 40.82 años (DE=10.677), y el 12,3% eran hombres, con una media de edad de 41.21 años (DE=10.979).

En cuanto al estado civil, el 42.9% de los encuestados estaban casados/as y el 27.1% estaban conviviendo en pareja (Tabla 4).

La puntuación media de los sujetos para la escala ISTAS_Enfermería es de 1.78 puntos. El estudio de la correlación entre esta puntuación y la edad muestra que, a más de edad de la muestra, se da 0.12 veces menos niveles percibidos de riesgos psicosociales medidos con la escala ISTAS_Enfermería. Así mismo, aquellos sujetos que están divorciados o separados presentan menores puntuaciones medias para la escala de forma significativa; y los sujetos que desarrollan actividad asistencial, así como en docencia a investigación también presentan mayores niveles de riesgos psicosocial percibidos de forma significativa (Tabla 4).

Tabla 4. Resultados análisis descriptivo.

Variables	Muestra total (n=2764)	Puntuación media ISTAS21 ($\bar{x}$ /SD)	Contraste de hipótesis
SEXO			
Masculino	341 (12.3%)	1.792 (SD=0.562)	P=0.50 ^a
Femenino	2414 (87.3%)	1.779 (SD=0.494)	
No binario	1 (0.0%)	1.200 (SD=0)	
Prefiero no decir	9 (0.3%)	1.874 (SD=0.590)	
Media		1.78 (SD=0.503)	
EDAD			
Media	40.87 años	1.78 (SD=0.5)	Tau b^b= -0.12 (p 0.001)
ESTADO CIVIL			
Casado/a	1186 (42.9%)	1.722 (SD=0.494)	0.001^a

Divorciado/a	117 (4.2%)	1.751 (SD=0.500)
En pareja (conviviendo)	748 (27.1%)	1.840 (SD=0.517)
En pareja (sin convivir)	242 (8.8%)	1.828 (SD=0.484)
Separado/a	41 (1.5%)	1.824 (SD=0.561)
Soltero/a	422 (15.3%)	1.819 (SD=0.492)
Viudo/a	9 (0.3%)	1.814 (SD=0.546)
Media		1.781 (SD=0.503)
PUESTO ACTUAL		
Enfermero/a asistencial	2287 (82.7%)	1.804 (SD=0.493)
Enfermero/a residente (EIR)	37 (1.3%)	1.690 (SD=0.551)
Enfermero/a responsable de unidad o servicio sin cargo de gestión reconocido	139 (5%)	1.711 (SD=0.477)
Supervisor/a de área o unidad sólo con funciones de gestión	93 (3.4%)	1.465 (SD=0.455)
Supervisor/a de unidad con asistencia directa a pacientes además de actividades de gestión	84 (3%)	1.590 (SD=0.517)
Enfermero/a especialista	29 (1%)	1.671 (SD=0.602)
Enfermero/a escolar	11 (0.4%)	1.636 (SD=0.598)
Docencia e investigación	9 (0.3%)	1.837 (SD=0.501)
Media		1.780 (SD=0.502)

$\bar{x}$ Mean score
SD Standard deviation
a H de Kruskal Wallis
b Tau Be de Kendall

4.2.1.3 Análisis psicométrico

Previo al análisis factorial exploratorio (AFE) se obtuvo una medida de Kaiser-Meyer-Olkin de 0.773 y un nivel de significancia de <0.001 en la prueba de esfericidad de Barlett. Con estos resultados se implementó el AFE, bajo los criterios de factorización axial principal y rotación varimax, el cual arrojó una solución factorial de 5 dimensiones y 15 ítems (Tabla 4). Se han eliminado los ítems 1, 5, 6, 7 y 12 de la escala SUSESO/ISTAS21 original (Candia et al, 2016) por cargas factoriales inferiores a 0.4. La solución final es una estructura de 5 factores, con 15 ítems, que explican el 63,6% de la varianza. (Tabla 5).

Así mismo, cada uno de los factores que conforman la escala fue nombrado de la siguiente forma:

1. **Factor 1 - Apoyo laboral:** Este factor se refiere al respaldo y la colaboración que una persona recibe en su entorno laboral. Incluye el apoyo directo de los superiores, la ayuda mutua entre compañeros y la capacidad de resolver conflictos por parte de los jefes inmediatos. También abarca el reconocimiento que se otorga a los empleados por su trabajo.
2. **Factor 2 - Satisfacción laboral:** Este factor describe el nivel de contento y gratificación que una persona experimenta en su trabajo. Incluye la oportunidad de aprender y desarrollarse profesionalmente, la percepción de la importancia de las tareas asignadas, el sentido de pertenencia a la empresa o institución y la claridad en cuanto a las responsabilidades laborales.
3. **Factor 3 - Bienestar emocional en el trabajo:** Este factor hace referencia al equilibrio emocional y al manejo del estrés en el ambiente laboral. Éste incluye la capacidad de tomar decisiones difíciles, el nivel de desgaste emocional experimentado en el trabajo y la necesidad de suprimir emociones en el entorno laboral.
4. **Factor 4 - Inseguridad laboral:** En este factor se describe la preocupación y la incertidumbre que una persona puede experimentar con respecto a su estabilidad laboral. Incluye el temor al despido o a la no renovación del contrato y la preocupación por cambios no deseados en las responsabilidades laborales.
5. **Factor 5 - Doble presencia:** Este factor se refiere a la conciliación entre las demandas laborales y las responsabilidades familiares y domésticas. En él se incluye la tendencia a pensar en asuntos familiares mientras se está en el trabajo y la necesidad ocasional de estar presente tanto en el trabajo como en el hogar para atender situaciones familiares urgentes.

Tabla 5. Ítems de la escala y estructura factorial.

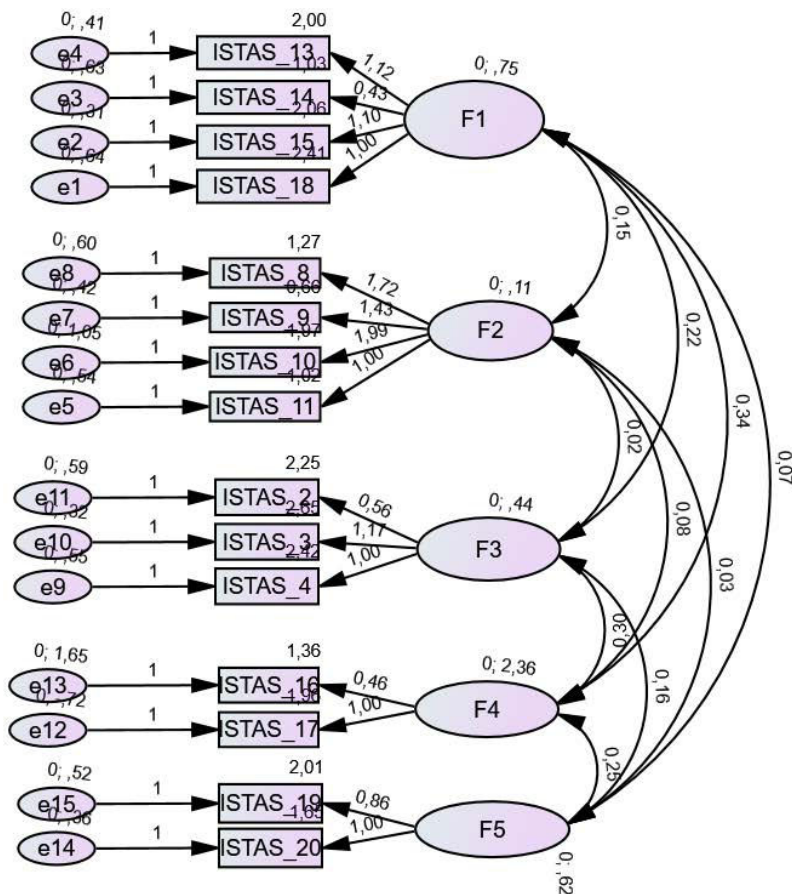
ITEMS	Factores				
	F1-Apoyo laboral	F2-Satisfacción laboral	F3-Bienestar emocional en el trabajo	F4-Inseguridad laboral	F5-Doble presencia
ISTAS_2			,703		
ISTAS_3			,783		
ISTAS_4			,768		
ISTAS_8		,703			
ISTAS_9		,834			
ISTAS_10		,501			
ISTAS_11		,473			

ISTAS_13	,876				
ISTAS_14	,450				
ISTAS_15	,879				
ISTAS_16				,895	
ISTAS_17				,821	
ISTAS_18	,800				
ISTAS_19					,872
ISTAS_20					,865

También se realizó un estudio de fiabilidad de la escala, que arrojó un valor α de Cronbach global de 0,764, y un valor de omega de McDonald de 0,741. Así mismo, el valor de α de Cronbach obtenido para cada factor fue de: 0.80 para Apoyo laboral, 0.7 para Satisfacción Laboral, 0.76 para Bienestar emocional en el trabajo, 0.72 para Inseguridad laboral, y 0.70 para Doble Presencia.

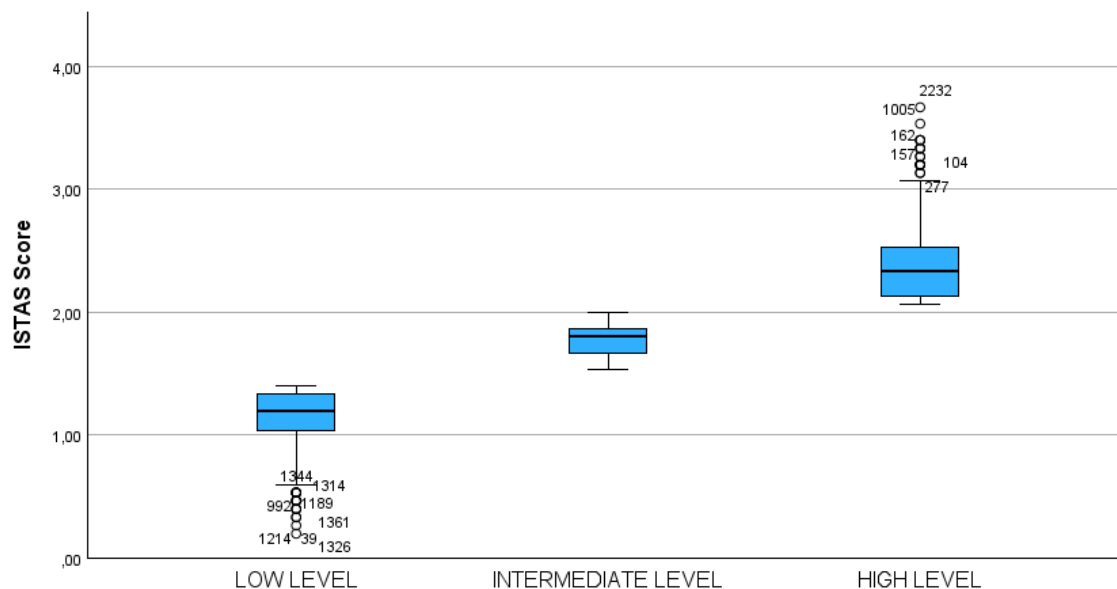
Posteriormente se realizó un análisis factorial confirmatorio (AFC) para el estudio de validez de constructo, el cual arrojó los siguientes resultados obteniéndose así valores de ajuste óptimos: NFI = 0,926; TLI = 0,912; CFI = 0,933; RMSEA= 0,057; y SRMR= 0.068 (Figura 2).

Figura 2. Estructura factorial de la escala.



Por otro lado, el estudio de los percentiles y cuartiles con respecto a la distribución de las puntuaciones medias de las escalas permitió identificar tres niveles indicados de riesgo psicosocial en enfermeras de España, mediante un diagrama de caja y bigotes. Se identificó un nivel bajo, con puntajes de 0 a 1,46 puntos de media, un nivel intermedio con puntajes de 1,47 a 2 puntos de media, y un nivel alto, por encima de 2 puntos de media (Figura 3). La significación estadística de las varianzas entre cada par de niveles analizados siempre dio un valor de $p < 0.05$, confirmado con el estadístico U de Mann-Whitney; por lo que se puede confirmar que existen diferencias significativas entre los niveles identificados y su relevancia.

Figura 3. Gráfico de niveles de riesgo psicosocial en enfermeras de España.



4.3 Resultados de la Fase 3. Evaluación y análisis de los riesgos psicosociales con variables sociodemográficas, laborales y de salud en profesionales de enfermería en España.

4.3.1 Resultados del objetivo 3. Evaluar los riesgos psicosociales en una muestra de enfermeras de España.

4.3.1.1 Análisis descriptivo

La muestra estaba compuesta por 2765 enfermeras/os de toda España, con una media de edad de 40.87 años. Del total de la muestra, el 87.3% eran mujeres, mientras que el 12.3% fueron hombres y un pequeño porcentaje se identificó como no binario o prefirió no declarar su género. La puntuación media del ISTAS21 fue de 1.78 (SD=0.503), sin diferencias significativas entre géneros ($p=0.503$). Las tablas 6 y 7 describen los principales resultados del análisis descriptivo bivariado respecto a las variables sociodemográficas y laborales.

Tabla 6. Variables sociodemográficas.

Variables	Muestra total (n=2765)	Puntuación media ISTAS21 (δ /SD)	Contraste de hipótesis
SEXO			
Masculino	341 (12.3%)	1.792 (SD=0.562)	$P=0.503^a$

Femenino	2414 (87.3%)	1.779 (SD=0.494)	
No binario	1 (0.0%)	1.200 (SD=0)	
Prefiero no decir	9 (0.3%)	1.874 (SD=0.590)	
EDAD			
Media	40.87 años	1.78 (SD=0.5)	Tau b^b= -0.12 (p 0.001)
ESTADO CIVIL			
Casado/a	1186 (42.9%)	1.722 (SD=0.494)	0.001^a
Divorciado/a	117 (4.2%)	1.751 (SD=0.500)	
En pareja (conviviendo)	748 (27.1%)	1.840 (SD=0.517)	
En pareja (sin convivir)	242 (8.8%)	1.828 (SD=0.484)	
Separado/a	41 (1.5%)	1.824 (SD=0.561)	
Soltero/a	422 (15.3%)	1.819 (SD=0.492)	
Viudo/a	9 (0.3%)	1.814 (SD=0.546)	
ESTUDIOS			
Grado	588 (21.3%)	1.809 (SD=0.480)	0.007^a
Licenciatura	42 (1.5%)	1.820 (SD=0.550)	
Diplomatura	704 (25.5%)	1.722 (SD=0.464)	
Doctorado	59 (2.1%)	1.714 (SD=0.641)	
Especialidad	397 (14.4%)	1.751 (SD=0.532)	
Máster	664 (24%)	1.831 (SD=0.522)	
Experto	298 (10.8%)	1.803 (SD=0.504)	
FP	13 (0.5%)	1.764 (SD=0.493)	

δ Mean score

SD Standard deviation

a H de Kruskal Wallis

b Tau Be de Kendall

c Mann-Whitney

Los resultados muestran que para las variables de estado civil, nivel educativo y provincia de trabajo existen diferencias significativas respecto a las puntuaciones ISTAS_Enfermería y sus diferentes categorías de la variable. Las personas casadas y quienes poseen doctorado o diplomatura presentan las puntuaciones más bajas que aquellas que tienen máster. La edad muestra una relación negativa y significativa con las puntuaciones (Tau b=-0.12, P<0.001), sugiriendo una menor percepción de riesgos con el incremento de la edad. Por otro lado, no se encontraron diferencias significativas en función del sexo (P=0.503), aunque las mujeres representan la mayor parte de la muestra (87.3%).

Tabla 7. Variables laborales.

Variables	Muestra total (n=2765)	Puntuación media ISTAS21 (δ/SD)	Contraste de hipótesis
RELACIÓN LABORAL			
Soy funcionario/a, estatutario/a	911 (32,9%)	1,640 (SD= 0.466)	0.001^a
Soy interino/a	713 (25,8%)	1,859 (SD= 0.496)	
Soy fijo (tengo un contrato indefinido,...)	466 (16,9%)	1,740 (SD= 0.486)	
Soy fijo/a discontinuo/a	43 (1,6%)	1,965 (SD= 0.605)	
Soy temporal con contrato formativo (contrato temporal para la formación)	41 (1,5%)	1,660 (SD= 0.576)	
Soy temporal (contrato por obra y servicio, circunstancias de la producción)	561 (20,3%)	1,920 (SD= 0.499)	
Sin contrato	30 (1,1%)	2,164 (SD= 0.512)	
TIPO DE CONTRATO			
A tiempo completo	2403 (86,9%)	1,777 (SD= 0.508)	0.614 ^a
A tiempo completo con reducción de jornada (maternidad, paternidad, estudios, discapacidad)	193 (7,0%)	1,806 (SD= 0.454)	
A tiempo parcial	113 (4,1%)	1,788 (SD= 0.500)	
A tiempo parcial con reducción de jornada maternidad/paternidad, estudios, discapacidad)	56 (2,0%)	1,839 (SD= 0.429)	
NÚMERO DE SERVICIOS			
Menos de 5 servicios diferentes	564 (23.7%)	1.672 (SD= 0.489)	0.001^a
Entre 5 y 10 servicios diferentes	1025 (37.1%)	1.750 (SD= 0.495)	
Más de 10 servicios diferentes	1084 (39.2%)	1.876 (SD= 0.502)	
ÁREA DE TRABAJO			
Urgencias y emergencias	21 (0.8%)	1.920 (SD= 0.437)	0.001^a
Gerencias	3 (0,1%)	1,155 (SD= 0.443)	
Gestión, dirección y administración	7 (0,3%)	1,714 (SD= 0.707)	

Ámbito escolar	18 (0,7%)	1,844 (SD= 0.698)	
Atención Primaria	570 (20,8%)	1,729 (SD= 0.534)	
Docencia e investigación	12 (0,4%)	1,522 (SD= 0.620)	
Hospital público	1710 (62,3%)	1,785 (SD= 0.481)	
Hospital privado	199 (7,3%)	1,764 (SD= 0.497)	
Varias entidades	135 (4,9%)	1,923 (SD= 0.530)	
Hospital concertado	20 (0,7%)	1,730 (SD= 0.397)	
Otras entidades no relacionadas con enfermería	5 (0,2%)	2,053 (SD= 0.536)	
Organismos públicos	8 (0,3%)	1,675 (SD= 0.560)	
No trabajo actualmente	36 (1,3%)	2,085 (SD= 0.557)	
PUESTO ACTUAL			
Enfermero/a asistencial	2287 (82.7%)	1.804 (SD=0.493)	0.001^a
Enfermero/a residente (EIR)	37 (1.3%)	1.690 (SD=0.551)	
Enfermero/a responsable de unidad o servicio sin cargo de gestión reconocido	139 (5%)	1.711 (SD=0.477)	
Supervisor/a de área o unidad sólo con funciones de gestión	93 (3.4%)	1.465 (SD=0.455)	
Supervisor/a de unidad con asistencia directa a pacientes además de actividades de gestión	84 (3%)	1.590 (SD=0.517)	
Enfermero/a especialista	29 (1%)	1.671 (SD=0.602)	
Enfermero/a escolar	11 (0.4%)	1.636 (SD=0.598)	
Docencia e investigación	9 (0.3%)	1.837 (SD=0.501)	
TIEMPO UNIDAD ACTUAL			
Estoy en paro	32 (1,2%)	2,143 (SD= 0.498)	0.001^a
Menos de 30 días	193 (7,0%)	1,969 (SD= 0.501)	
Entre 1 y 6 meses incluidos	446 (16,1%)	1,848 (SD= 0.528)	
Entre 6 meses y 2 años incluidos	570 (20,6%)	1,803 (SD= 0.505)	
Entre 2 y 5 años incluidos	615 (22,2%)	1,765 (SD= 0.496)	
Entre 5 y hasta 10 años incluidos	337 (12,2%)	1,744 (SD= 0.486)	

Más de 10 años	572 (20,7%)	1,662 (SD= 0.461)	
BAJA POR ENFERMEDAD			
No he tenido ninguna baja en el último año	1444 (52.3%)	1.689 (SD= 0.494)	0.001^a
He tenido UNA baja en el último año	1028 (37.2%)	1.842 (SD= 0.484)	
He tenido DOS O MÁS bajas en el último año	280 (10.1%)	2.027 (SD= 0.507)	
Baja prolongada/larga duración (más de un año)	9 (0.3%)	1.837 (SD= 0.433)	
Excedencia	2 (0.1%)	1.766 (SD= 0.141)	
TIPO DE BAJA			
Baja por accidente de trabajo	46 (3.9%)	1.891 (SD= 0.551)	0.991 ^a
Baja por enfermedad profesional	102 (8.6%)	1.883 (SD= 0.481)	
Baja por paternidad/maternidad	97 (8.2%)	1.854 (SD= 0.483)	
Baja por enfermedad común	940 (79.3%)	1.895 (SD= 0.496)	

δ Mean score

SD Standard deviation

a H de Kruskal Wallis

b Tau Be de Kendall

c Mann-Whitney

La puntuación media del ISTAS_Enfermería muestran diferencias significativas según relación laboral, número de servicios, área de trabajo, puesto actual, tiempo en la unidad y bajas por enfermedad ($p=0.001$). Destacan valores más altos en quienes trabajan sin contrato ($\bar{x} = 2,164$), están en paro ($\bar{x} = 2,143$), o han tenido dos o más bajas en el último año ($\bar{x} = 2,027$), mientras que las puntuaciones más bajas se asocian a funcionarios/estatutarios ($\bar{x} = 1,640$), gerencias ($\bar{x} = 1,155$), y quienes llevan más de 10 años en la misma unidad ($\bar{x} = 1,662$). No hubo diferencias significativas según el tipo de contrato ni el motivo de la baja.

4.3.1.2 Análisis de regresión multivariante

Se llevó a cabo un análisis de regresión categórica, utilizando como variable dependiente la puntuación total de la escala ISTAS_Enfermería y como predictores

las variables Edad, Estado civil, Estudios, Relación laboral, Número de servicios, Puesto actual, Servicio actual, Tiempo en la unidad actual y Baja por enfermedad. El modelo mostró un coeficiente de determinación $R^2=0,095$ (ajustado $R^2=0,089$) y una significancia global de $p<0,001$, lo que indica que el modelo tiene una capacidad explicativa baja pero significativa.

Las variables que contribuyeron significativamente al modelo fueron Edad, Estudios cursados, Relación laboral, Número de servicios, Puesto actual, Tiempo en la unidad actual y Baja por enfermedad (Tabla 8), mientras que Estado civil ($p=0,436$) y Servicio actual ($p=0,137$) no alcanzaron niveles de significancia estadística ($p>0,05$).

Tabla 8. Ajuste del modelo y significancia del análisis de regresión.

$R^2=0,095^a$ Fisher's $F=32.13$ $p<0.001$				
Variable	Coeficiente (β)	Grados de libertad	Estadístico F	Valor de p
Edad	-0.124	2	28.915	< 0.001
Estudios	0.064	2	7.448	< 0.001
Relación Laboral	0.063	1	4.179	0.041
Número de servicios	-0.095	1	9.185	0.002
Puesto actual	-0.065	2	10.857	< 0.001
Tiempo en la unidad actual	0.053	3	3.656	0.012
Baja por enfermedad	-0.162	2	72.631	< 0.001

^a Coeficiente de regresión; ^b Test de Fisher; ^c Valor de p.

La variable Baja por enfermedad mostró un efecto negativo significativo ($\beta=-0,162$), indicando que esta variable tiene un impacto en la puntuación total de ISTAS_Enfermería.

A pesar de la baja capacidad explicativa del modelo, los resultados revelan relaciones significativas entre varias variables independientes y la puntuación en la escala ISTAS_Enfermería, destacando la importancia de factores sociodemográficos y laborales en la evaluación realizada.

4.3.2 Resultados del objetivo 4. Analizar la relación entre la percepción de riesgos psicosociales y diversas variables sociodemográficas, laborales y de salud en profesionales de enfermería en España.

4.3.2.1 Análisis descriptivo

La investigación contó con la participación de 2.765 profesionales de enfermería procedentes de diversas regiones de España, con una edad media de 40,87 años. En cuanto a la distribución por género, el 87,3 % de los encuestados eran mujeres, el 12,3 % hombres y una proporción muy reducida se identificó como no binaria. La media obtenida en el cuestionario ISTAS21 fue de 1,78 (DE = 0,503), sin que se observaran diferencias estadísticamente significativas entre los géneros ($p = 0,503$). Los resultados principales del análisis descriptivo bivariado, en relación con variables sociodemográficas y laborales, se presentan en las Tablas 9 y 10.

Tabla 9. Variables sociodemográficas.

Variables	Muestra total (n=2765)	Puntuación media ISTAS21 ($\bar{x}$ /SD)	Contraste de hipótesis
SEXO			
Masculino	341 (12.3%)	1.792 (SD=0.562)	P=0.503 ^a
Femenino	2414 (87.3%)	1.779 (SD=0.494)	
No binario	10 (0.4%)	1.874 (SD=0.503)	
EDAD			
Media	40.87 años	1.78 (SD=0.5)	Tau b^b = -0.12 (p 0.001)
ESTADO CIVIL			
Casado/a	1186 (42.9%)	1.722 (SD=0.494)	0.001^a
Divorciado/a	117 (4.2%)	1.751 (SD=0.500)	

Variables	Muestra total (n=2765)	Puntuación media ISTAS21 ($\bar{x}$ /SD)	Contraste de hipótesis
En pareja (conviviendo)	748 (27.1%)	1.840 (SD=0.517)	
En pareja (sin convivir)	242 (8.8%)	1.828 (SD=0.484)	
Separado/a	41 (1.5%)	1.824 (SD=0.561)	
Soltero/a	422 (15.3%)	1.819 (SD=0.492)	
Viudo/a	9 (0.3%)	1.814 (SD=0.546)	
ESTUDIOS			
Grado	588 (21.3%)	1.809 (SD=0.480)	0.007^a
Licenciatura	42 (1.5%)	1.820 (SD=0.550)	
Diplomatura	704 (25.5%)	1.722 (SD=0.464)	
Doctorado	59 (2.1%)	1.714 (SD=0.641)	
Especialidad	397 (14.4%)	1.751 (SD=0.532)	
Máster	664 (24%)	1.831 (SD=0.522)	
Experto	298 (10.8%)	1.803 (SD=0.504)	
FP	13 (0.5%)	1.764 (SD=0.493)	

$\bar{x}$ Mean score

SD Standard deviation

^a H de Kruskal Wallis

Los hallazgos indican que existen diferencias estadísticamente significativas en las puntuaciones del ISTAS_Enfermería en función del estado civil y el nivel de estudios alcanzado. En particular, las personas casadas y aquellas con formación de doctorado o diplomatura obtuvieron puntuaciones más bajas en comparación con quienes cuentan con un máster. Asimismo, se identificó una correlación negativa y significativa entre la edad y las puntuaciones ($\text{Tau-b} = -0.12$, $p < 0.001$), lo que sugiere que la percepción de riesgos psicosociales tiende a disminuir a medida que aumenta la edad. En cambio, no se observaron diferencias significativas según el sexo ($p = 0.503$), a pesar de que las mujeres constituyen la mayoría de la muestra (87,3 %).

Tabla 10. Variables laborales.

Variables	Muestra total (n=2765)	Puntuación media ISTAS21 ($\bar{x}$ /SD)	Contraste de hipótesis
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ENFERMEDAD CRÓNICA			
No	1972 (71.3%)	1.757 (SD= 0.497)	0.001 ^c
Sí	793 (28.7%)	1.841 (SD= 0.513)	
GRADO DE SALUD			
Mala	13 (0.5%)	2.292 (SD= 0.543)	0.001 ^a
Regular	276 (10%)	2.064 (SD= 0.511)	
Buena	1265 (45.8%)	1.797 (SD= 0.471)	
Muy buena	1027 (37.1%)	1.706 (SD= 0.491)	
Excelente	184 (6.7%)	1.632 (SD= 0.575)	
NIVEL DE ESTRÉS			
Media	6.86	1.781 (SD= 0.503)	Tau b ^b = 0,318 (p 0.001)
BAJA POR ENFERMEDAD			
No he tenido ninguna baja en el último año	1444 (52.3%)	1.689 (SD= 0.494)	0.001 ^a
He tenido UNA baja en el último año	1028 (37.2%)	1.842 (SD= 0.484)	
He tenido DOS O MÁS bajas en el último año	280 (10.1%)	2.027 (SD= 0.507)	
Baja prolongada/larga duración (más de un año)	9 (0.3%)	1.837 (SD= 0.433)	
Excedencia	2 (0.1%)	1.766 (SD= 0.141)	
TIPO DE BAJA			
Baja por accidente de trabajo	46 (3.9%)	1.891 (SD= 0.551)	0.991 ^a
Baja por enfermedad profesional	102 (8.6%)	1.883 (SD= 0.481)	
Baja por paternidad/maternidad	97 (8.2%)	1.854 (SD= 0.483)	
Baja por enfermedad común	940 (79.3%)	1.895 (SD= 0.496)	

FRECUENCIA CONSUMO DE ALCOHOL			
Nunca	672 (24.3%)	1.826 (SD= 0.532)	0.054 ^a
De forma esporádica	1969 (71.2%)	1.767 (SD= 0.490)	
Habitualmente	124 (4.5%)	1.769 (SD= 0.526)	
FRECUENCIA CONSUMO DE TABACO			
Nunca	2225 (80.5%)	1.774 (SD= 0.505)	0.243 ^a
De forma esporádica	238 (8.6%)	1.820 (SD= 0.476)	
Habitualmente	302 (10.9%)	1.802 (SD= 0.507)	
FRECUENCIA CONSUMO DE CANNABIS			
Nunca	2695 (97.5%)	1.779 (SD= 0.504)	0.062 ^a
De forma esporádica	60 (2.2%)	1.833 (SD= 0.454)	
Habitualmente	10 (0.4%)	2.066 (SD= 0.309)	
FRECUENCIA CONSUMO DE HEROÍNA			
Nunca	2758 (99.7%)	1.781 (SD= 0.503)	0.566 ^a
De forma esporádica	5 (0.2%)	1.573 (SD= 0.314)	
Habitualmente	2 (0.1%)	1.833 (SD= 0.047)	
FRECUENCIA CONSUMO DE ANFETAMINAS			
Nunca	2749 (99.4%)	1.780 (SD= 0.502)	0.343 ^a
De forma esporádica	14 (0.5%)	2.009 (SD= 0.617)	
Habitualmente	2 (0.1%)	1.900 (SD= 0.471)	
FRECUENCIA CONSUMO DE BENZODIACEPINAS			
Nunca	2426 (87.7%)	1.760 (SD= 0.498)	0.001 ^a

De forma esporádica	322 (11.6%)	1.929 (SD= 0.512)	
Habitualmente	17 (0.6%)	2.031 (SD= 0.597)	
FRECUENCIA CONSUMO DE ANTIDEPRESIVOS			
Nunca	2653 (95.9%)	1.772 (SD= 0.498)	0.001^a
De forma esporádica	73 (2.6%)	1.958 (SD= 0.527)	
Habitualmente	39 (1.4%)	2.095 (SD= 0.611)	

$\bar{x}$ Mean score

SD Standard deviation

a H de Kruskal Wallis

b Tau Be de Kendall

c Mann-Whitney

Las puntuaciones medias del ISTAS_Enfermería muestran diferencias estadísticamente significativas en función de la presencia de enfermedad crónica, el grado de salud autopercebido, el nivel de estrés, las bajas por enfermedad y el consumo de diferentes sustancias tóxicas ($p = 0.001$). Se observan valores más elevados en profesionales con enfermedad crónica ($\bar{x} = 1.841$), en quienes valoran su salud como mala ($\bar{x} = 2.292$) o regular ($\bar{x} = 2.064$), y en aquellos que han tenido dos o más bajas en el último año ($\bar{x} = 2.027$). Además, se registra una correlación positiva entre el estrés percibido y las puntuaciones del ISTAS_Enfermería (Tau-b = 0.318, $p = 0.001$). En cuanto al consumo de psicofármacos, destacan puntuaciones más altas entre quienes consumen benzodiacepinas habitualmente ($\bar{x} = 2.031$) y antidepresivos de forma habitual ($\bar{x} = 2.095$). No se encontraron diferencias significativas según el tipo de baja, ni en relación con el consumo de alcohol, tabaco, cannabis, heroína o anfetaminas.

4.3.2.2 Análisis de regresión multivariante

Se llevó a cabo un análisis de regresión categórica, utilizando como variable dependiente la puntuación total de la escala ISTAS_Enfermería y como predictores, aquellas variables que mostraron diferencias significativas en el análisis bivariado (ver

Tablas 9 y 10). A continuación, se muestran los resultados del análisis de regresión (Tabla 11):

Tabla 11. Ajuste del modelo y significancia del análisis de regresión.

El modelo de regresión ejecutado es significativo y explica el 29,6% de la variabilidad de los datos.

R ² =0,296 ^a Fisher's F=24,037 p< 0.001				
Variable	Coefficiente (β)	Grados de libertad	Estadístico F	Valor de p
Estado civil	0.072	2	14,316	< 0.001
Estudios	0.104	2	30,811	< 0.001
Enfermedad crónica	0.021	2	1,045	0.352
Grado de salud	0.149	1	6,991	0.008
Baja por enfermedad	-0.135	1	39,622	< 0.001
Frecuencia consumo benzodiazepinas	-0.079	2	14,945	< 0.001
Frecuencia consumo antidepresivos	-0.063	2	7,476	0.06

Así, las Enfermeras que conviven en pareja ($\bar{x}$ = 1.840) presentan una percepción 0.072 veces mayor de los riesgos psicosociales que aquellas que están casadas ($\bar{x}$ = 1.722), solteras ($\bar{x}$ = 1.819), separadas ($\bar{x}$ = 1.824) o viudas ($\bar{x}$ = 1.814). Esto indica que el estado civil influye significativamente en la percepción del entorno laboral, siendo el convivir sin estar casado una condición asociada con mayor percepción de riesgos.

En cuanto al nivel de estudios, las Enfermeras con Máster ($\bar{x}$ = 1.831) o Grado ($\bar{x}$ = 1.809) presentan una percepción de riesgos psicosociales 0.104 veces mayor que aquellas con Diplomatura ($\bar{x}$ = 1.722) o Doctorado ($\bar{x}$ = 1.714), mostrando una relación

significativa entre el nivel formativo y la percepción del entorno laboral: cuanto más técnico o académico el nivel, menor parece ser la percepción de riesgo.

En cuanto a la baja por enfermedad, las Enfermeras que han tenido una baja en el último año ($\bar{x} = 1.842$) o dos o más ($\bar{x} = 2.027$) perciben más riesgos que aquellas que no han tenido ninguna ($\bar{x} = 1.689$). Sin embargo, el modelo muestra una asociación negativa ($\beta = -0.135$; $p < 0.001$), lo que indica que, de forma global, quienes han tenido bajas perciben 0.135 veces menos riesgos psicosociales.

Respecto al consumo de benzodiacepinas, las Enfermeras que las consumen habitualmente ($\bar{x} = 2.031$) perciben mayores riesgos que aquellas que lo hacen esporádicamente ($\bar{x} = 1.929$) o nunca ($\bar{x} = 1.760$). No obstante, el modelo indica que este grupo percibe 0.079 veces menos riesgos psicosociales ($\beta = -0.059$; $p < 0.001$).

Por último, aunque el consumo de antidepresivos no es estadísticamente significativo ($\beta = -0.063$; $p = 0.006$), se observa una tendencia similar: las profesionales que los consumen habitualmente ($\bar{x} = 2.095$) reportan más percepción de riesgos que aquellas que lo hacen de forma esporádica ($\bar{x} = 1.958$) o nunca ($\bar{x} = 1.772$). Aun así, el modelo sugiere que, en promedio, quienes los consumen tienen una percepción 0.063 veces menor.

6. DISCUSIÓN

La presente investigación pone de manifiesto la gran complejidad de los riesgos psicosociales en el ámbito de la enfermería, confirmando que se trata de un fenómeno de naturaleza multifactorial, en el que intervienen tanto variables individuales como factores sociodemográficos, organizacionales y contextuales.

Los resultados evidencian que este fenómeno es particularmente intenso en las etapas tempranas de la carrera profesional, donde el paso de la universidad al entorno clínico supone un periodo crítico marcado por la inseguridad, la falta de experiencia y el incremento de la presión asistencial. Esta transición de la universidad al entorno clínico supone un periodo especialmente vulnerable, en el que la falta de experiencia genera inseguridad y ansiedad (Feeg et al., 2022). Esta etapa inicial se caracteriza

por la dificultad para gestionar las expectativas profesionales y la presión derivada de la responsabilidad asistencial, lo que incrementa los niveles de estrés y compromete el bienestar (S. H. Chen et al., 2021). Aunque con el paso del tiempo la experiencia reduce parcialmente la percepción de estos estresores, los primeros meses laborales siguen representando un momento crítico en la construcción de la identidad profesional (Halpin et al., 2017).

Entre los factores que más inciden en el malestar se encuentra la carga de trabajo. Una asignación excesiva de pacientes o una organización deficiente de las tareas conduce a mayor agotamiento y eleva el riesgo de abandono de la profesión durante los primeros doce meses (Halpin et al., 2017). Estos hallazgos refuerzan la importancia de garantizar una distribución equitativa de tareas y un dimensionamiento adecuado de las plantillas para proteger tanto la salud de las enfermeras como la calidad asistencial.

Las relaciones interpersonales y la pertenencia a equipos colaborativos surgen como elementos de protección frente al estrés. El apoyo social recibido en el entorno laboral amortigua el impacto de la sobrecarga de trabajo y contribuye a una mejor adaptación al puesto (Hoeve et al., 2020). Cuando existe cohesión grupal y un clima de apoyo, disminuyen los efectos de los estresores vinculados a la escasez de recursos y a la presión asistencial (Zhou et al., 2022). Asimismo, las dinámicas positivas en los equipos facilitan la construcción de resiliencia y aumentan la satisfacción laboral (Labrague & McEnroe-Petitte, 2018). Por el contrario, ambientes laborales caracterizados por conflictos interpersonales generan mayor vulnerabilidad psicológica y menor motivación para permanecer en el puesto (Blomberg et al., 2016).

La competencia profesional y la resiliencia se consolidan como factores determinantes en la retención del personal de enfermería. Una preparación sólida en competencias clínicas y éticas, junto con un nivel educativo más alto, se asocia con mayor intención de permanencia en la profesión (H. M. Chen et al., 2021). En contraste, la carencia de formación en gestión de equipos o en toma de decisiones incrementa la vulnerabilidad al abandono (Zhang et al., 2019). Estos hallazgos evidencian que la capacitación continua y la supervisión adecuada no solo favorecen la calidad asistencial, sino que también fortalecen la motivación y el compromiso con la organización.

El análisis de los riesgos psicosociales mediante la adaptación del cuestionario SUSESO/ISTAS21 al contexto español refuerza la relevancia de estas dimensiones. La validación mostró una fiabilidad adecuada y una estructura factorial que, si bien guarda semejanzas con la versión chilena, presenta diferencias notables en la organización de las dimensiones (Mendoza Llanos & Moyano Díaz, 2019). Estas variaciones ponen de manifiesto la necesidad de realizar adaptaciones culturales y contextuales en los instrumentos de medición, ya que los factores psicosociales adquieren matices distintos según el entorno en el que se aplican (Renn & Rohrmann, 2000).

Un hallazgo destacable es la ausencia de diferencias significativas por sexo en la percepción del estrés laboral, lo que coincide con la evidencia previa (Bardhan et al., 2019). En cambio, variables como la edad y el estado civil resultaron determinantes. Las enfermeras jóvenes y solteras reportaron niveles más altos de riesgos psicosociales, lo que confirma la vulnerabilidad de los profesionales en etapas iniciales y la función protectora que ejerce el apoyo social derivado de las relaciones de pareja o familiares (Giménez-Espert et al., 2020). El hecho de que las enfermeras casadas presenten menor percepción de riesgo sugiere que el soporte emocional y práctico de la vida en pareja contribuye a un afrontamiento más eficaz de las demandas laborales (Ali et al., 2022).

También se observaron diferencias en función del puesto. Mientras los supervisores presentaron menor exposición a riesgos, las enfermeras dedicadas a la docencia o investigación obtuvieron puntuaciones más elevadas, probablemente debido a la menor autonomía percibida en estas áreas (Beh & Loo, 2012). Este hallazgo refuerza la idea de que los riesgos psicosociales no solo dependen de factores individuales, sino también de las características organizativas y del rol desempeñado. La consistencia interna del cuestionario adaptado, comparable o superior a otros estudios realizados en España, lo convierte en una herramienta válida para evaluar riesgos psicosociales en este colectivo (Moncada, 2014).

El análisis de riesgos en el contexto de la pandemia de COVID-19 añade una capa de complejidad. Se han reportado niveles elevados de agotamiento y ansiedad en los profesionales de enfermería durante este periodo (Cohen et al., 2023). La puntuación media obtenida en el ISTAS_Enfermería reflejó un riesgo bajo a moderado, aunque

variables como el tipo de contrato, el estado civil, el nivel de estudios, el número de servicios asignados, el tiempo en la unidad y las bajas laborales introdujeron diferencias significativas (Giménez-Espert et al., 2020).

El modelo explicativo obtenido mostró baja capacidad predictiva, lo que sugiere que además de las variables sociodemográficas deben considerarse dimensiones organizacionales como el liderazgo, la cohesión de los equipos y la justicia laboral (Çay et al., 2023). La edad volvió a emerger como un factor central, con los profesionales más jóvenes percibiendo mayores niveles de riesgo, lo que confirma su mayor vulnerabilidad frente al estrés y al agotamiento en las etapas iniciales (Hsu, 2019).

En relación con el estado civil, aunque los resultados no son uniformes en todos los contextos, se observa una tendencia a que el matrimonio se asocie con menor percepción de riesgos psicosociales (Holt-Lunstad et al., 2008). Los niveles educativos más altos, sin embargo, se vinculan a mayores exigencias y percepción de presión, lo que refleja la complejidad de esta variable en la experiencia laboral (Salimzadeh et al., 2021). En cuanto a las condiciones contractuales, la precariedad laboral y la asignación de múltiples servicios se relacionan con mayores niveles de estrés y malestar (McVicar, 2016). Este hallazgo coincide con investigaciones que destacan la importancia de la estabilidad laboral en la salud ocupacional del personal de enfermería (Beltrán Salazar & Arévalo Marco, 2023). La diversidad de tareas y la inestabilidad contractual dificultan la adaptación y aumentan el riesgo de agotamiento (Acosta-Romo et al., 2022).

Otros factores organizativos, como el área de trabajo, también influyen. Las unidades de urgencias, caracterizadas por un alto nivel de presión y exposición a situaciones críticas, generan mayor desgaste psicológico (García-Tudela et al., 2022). Asimismo, las bajas por enfermedad refuerzan el vínculo entre entornos de alta presión y deterioro de la salud ocupacional (Anderson et al., 2020). En el contexto español, se ha documentado que los profesionales con mayor número de bajas presentan diferencias significativas en la percepción de riesgo, lo que resalta la interacción entre la salud individual y las condiciones del entorno (García-Maroto et al., 2021).

En cuanto a los factores de salud y estilos de vida, los resultados indican que la presencia de enfermedades crónicas se asocia con mayor percepción de riesgos psicosociales (Sarafis et al., 2016). La autopercepción negativa del estado de salud también se vincula con un incremento en las puntuaciones de riesgo (Fang et al., 2018). Además, el nivel de estrés percibido aparece como un factor transversal que influye de manera directa sobre el bienestar laboral, confirmando su papel central en la salud ocupacional (Romanov et al., 1996).

El consumo de psicofármacos ofrece resultados ambivalentes. Por un lado, se asocia con mayores puntuaciones de riesgo en los análisis descriptivos; por otro, en los modelos ajustados aparece vinculado con una menor percepción de estresores, lo que podría interpretarse como un efecto compensatorio derivado de la medicación (Martos Martínez et al., 2021). Por el contrario, el consumo de alcohol y tabaco no mostró diferencias significativas en la percepción de riesgos, en línea con investigaciones previas (Milner et al., 2019).

El análisis de las bajas laborales aporta una lectura interesante. Lejos de incrementar la percepción de riesgo, los profesionales con más bajas reportaron puntuaciones más bajas en los modelos multivariantes, lo que podría explicarse como un mecanismo adaptativo o como resultado de los apoyos institucionales posteriores a dichas ausencias (Kerr et al., 2020). Esta interpretación coincide con investigaciones que sugieren que las bajas pueden ofrecer oportunidades de recuperación y disminuir temporalmente la exposición a estresores (Lagerveld et al., 2012).

En conjunto, los resultados de esta investigación confirman que la percepción de riesgos psicosociales en enfermería está modulada por un entramado de variables sociodemográficas, de salud y organizacionales. La edad y el estado civil aparecen como factores consistentes, con los jóvenes y solteros mostrando mayor vulnerabilidad, mientras que los casados y con formación doctoral presentan menor riesgo (Rudman et al., 2020). Las condiciones de salud, como la presencia de enfermedades crónicas, y el estrés percibido también se consolidan como predictores fundamentales del bienestar laboral (Cañadas-De la Fuente et al., 2018).

Pese a las limitaciones metodológicas comunes a los distintos estudios —diseños transversales, muestras de conveniencia y predominio femenino—, las implicaciones

prácticas son claras. En el ámbito asistencial, se recomienda implementar programas de apoyo psicológico y de manejo del estrés. En la gestión, se subraya la necesidad de planificar recursos humanos que consideren la edad, el estado civil, la formación y las condiciones de salud de las enfermeras. En el terreno educativo, se refuerza la importancia de formar a los futuros profesionales en competencias de autocuidado, resiliencia y afrontamiento.

7. CONCLUSIONES

El objetivo general de esta tesis doctoral fue analizar los riesgos psicosociales en enfermeras en España a través de la validación del cuestionario SUSESO/ISTAS21 y de su asociación con variables personales, laborales y de salud. Los resultados alcanzados a lo largo de los cuatro estudios que la integran permiten obtener una visión integral y fundamentada de los principales desafíos que enfrenta el colectivo, así como de las herramientas disponibles para su evaluación y de las implicaciones prácticas y teóricas que se derivan de ello.

En primer lugar, los hallazgos ponen de manifiesto que la enfermería es una profesión sometida a múltiples fuentes de riesgo psicosocial que afectan tanto a la experiencia subjetiva de los profesionales como a su permanencia en el sector. La carga de trabajo excesiva, las dificultades de adaptación al entorno laboral, las altas expectativas profesionales y las tensiones en las relaciones interpersonales se identifican como elementos clave en la aparición de estrés y malestar. Estas dimensiones son especialmente relevantes en las etapas iniciales de la carrera, cuando las enfermeras novatas se enfrentan a un proceso de integración complejo. La evidencia sugiere que el acompañamiento, la formación continua y las estrategias de apoyo institucional resultan fundamentales para reducir la vulnerabilidad en este grupo y contribuir a la retención de talento en el sistema sanitario.

En segundo lugar, la tesis aporta un avance metodológico con la adaptación y validación del cuestionario SUSESO/ISTAS21 para la población de enfermeras españolas. El instrumento, en su versión adaptada, ha demostrado adecuadas propiedades psicométricas y una estructura de cinco factores que explican una proporción elevada de la varianza. Este resultado confirma la pertinencia de la escala

como herramienta válida y fiable para evaluar riesgos psicosociales en este colectivo. Su disponibilidad permite no solo la detección temprana de riesgos en entornos clínicos y organizacionales, sino también su integración en la formación de futuros profesionales y en la investigación aplicada. De este modo, se abre la posibilidad de realizar estudios longitudinales y comparativos entre distintos contextos, además de facilitar la extensión de la herramienta a otros profesionales del sector salud.

En tercer lugar, los análisis realizados confirman que la percepción de riesgos psicosociales está estrechamente asociada a factores sociodemográficos y laborales. Se ha identificado que los profesionales más jóvenes, aquellos con contratos temporales o sin estabilidad laboral, así como quienes desempeñan funciones asistenciales con elevada rotación de servicios, son los que muestran mayor vulnerabilidad frente al estrés laboral. Además, la presencia de bajas laborales reiteradas constituye un indicador adicional de exposición a riesgos. Estos resultados refuerzan la importancia de diseñar políticas que favorezcan la estabilidad en el empleo, reduzcan la precariedad contractual y promuevan condiciones laborales que faciliten la continuidad y la satisfacción profesional.

En cuarto lugar, los resultados también evidencian que las características personales y de salud ejercen un papel modulador en la percepción de riesgos. Variables como la edad, el estado civil, el nivel educativo, la autopercepción del estado de salud, la presencia de estrés laboral y el consumo de psicofármacos se relacionan significativamente con mayores niveles de riesgo psicosocial. Este hallazgo subraya la necesidad de un abordaje integral de la salud laboral en enfermería, que no se limite a las condiciones organizacionales, sino que incorpore programas de promoción del bienestar individual, apoyo psicológico, formación en estrategias de afrontamiento y medidas de conciliación laboral y personal.

De forma global, los resultados de esta tesis muestran que los riesgos psicosociales en enfermería en España constituyen un fenómeno complejo y multidimensional, resultado de la interacción entre factores individuales, organizacionales y de salud. Su abordaje exige, por tanto, estrategias multidisciplinarias que combinen acciones en el plano institucional con apoyos específicos a los profesionales más vulnerables. La evidencia generada refuerza la necesidad de incorporar la perspectiva psicosocial en las políticas sanitarias y de priorizar intervenciones orientadas a la mejora de las

condiciones de trabajo, la estabilidad contractual y el bienestar emocional de las enfermeras.

En conclusión, esta tesis no solo proporciona una herramienta validada para la evaluación de riesgos psicosociales en enfermería, sino que también identifica los principales factores asociados y aporta recomendaciones para la práctica profesional, la formación y la investigación futura. Atender a estos riesgos de manera integral contribuirá no solo a mejorar la salud y la satisfacción laboral de las enfermeras, sino también a garantizar una atención de mayor calidad y un sistema sanitario más sostenible y humano.

7.1 CONCLUSIONS

The general aim of this doctoral thesis was to analyze psychosocial risks among nurses in Spain through the validation of the SUSESO/ISTAS21 questionnaire and its association with personal, occupational, and health-related variables. The results obtained across the four studies that comprise this work provide an integrated and well-founded view of the main challenges faced by this professional group, as well as of the tools available for their assessment and the practical and theoretical implications that arise from them.

First, the findings highlight that nursing is a profession exposed to multiple sources of psychosocial risk that significantly affect both the subjective experience of professionals and their retention in the sector. Excessive workload, difficulties in adapting to the work environment, high professional expectations, and interpersonal tensions were identified as key elements in the emergence of stress and distress. These dimensions are particularly relevant during the initial stages of a nursing career, when novice nurses face a complex process of integration. The evidence suggests that mentoring, continuous training, and institutional support strategies are essential to reduce vulnerability in this group and to contribute to retaining talent within the healthcare system.

Second, this thesis makes a methodological contribution through the adaptation and validation of the SUSESO/ISTAS21 questionnaire for the population of Spanish nurses. The adapted instrument demonstrated adequate psychometric properties and

a five-factor structure that explains a substantial proportion of the variance. This result confirms the relevance of the scale as a valid and reliable tool to assess psychosocial risks in this professional group. Its availability enables not only the early detection of risks in clinical and organizational settings, but also its integration into the training of future professionals and into applied research. Consequently, it opens the possibility of conducting longitudinal and comparative studies in different contexts, and facilitates the extension of the tool to other healthcare professionals.

Third, the analyses confirm that the perception of psychosocial risks is closely associated with sociodemographic and occupational factors. It was identified that younger professionals, those with temporary or unstable contracts, as well as those working in care positions with high service rotation, are more vulnerable to work-related stress. Furthermore, the presence of repeated sick leaves constitutes an additional indicator of exposure to risks. These results underscore the importance of designing policies that promote job stability, reduce contractual precariousness, and encourage working conditions that foster continuity and professional satisfaction.

Fourth, the results also show that personal and health-related characteristics play a moderating role in risk perception. Variables such as age, marital status, educational level, self-perceived health status, occupational stress, and psychotropic medication use are significantly associated with higher levels of psychosocial risk. This finding emphasizes the need for a comprehensive approach to occupational health in nursing, one that does not focus exclusively on organizational conditions but also incorporates programs to promote individual well-being, psychological support, training in coping strategies, and measures to improve work–life balance.

Overall, the results of this thesis show that psychosocial risks in nursing in Spain represent a complex and multidimensional phenomenon, resulting from the interaction between individual, organizational, and health-related factors. Addressing them therefore requires multidisciplinary strategies that combine institutional actions with specific support for the most vulnerable professionals. The evidence generated reinforces the need to integrate a psychosocial perspective into health policies and to prioritize interventions aimed at improving working conditions, contractual stability, and the emotional well-being of nurses.

In conclusion, this thesis not only provides a validated tool for the assessment of psychosocial risks in nursing, but also identifies the main associated factors and offers recommendations for professional practice, education, and future research. Addressing these risks comprehensively will contribute not only to improving the health and job satisfaction of nurses, but also to ensuring higher-quality care and a more sustainable and human healthcare system.

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9. ANEXOS



Junta de Andalucía

Consejería de Salud y Familias

DICTAMEN DEL COMITÉ DE ÉTICA DE LA INVESTIGACIÓN PROVINCIAL DE HUELVA

D^a. María Dolores Santos Rubio, Secretaria del
Comité de Ética de la Investigación Provincial de Huelva

CERTIFICA

Que este Comité, en virtud de lo previsto en la Ley 14/2007, de 3 de julio, de Investigación Biomédica y el Decreto 8/2020, de 30 de enero, por el que se regulan los órganos de ética asistencial y de la investigación biomédica en Andalucía, ha evaluado la propuesta de **D. Juan Gómez Salgado** como investigador principal del *Proyecto de Investigación* titulado: *Estudio para evaluar la aparición de estrés en profesionales de enfermería en situaciones clínicas no experimentadas previamente*, con código de solicitud: **CCNEP**, con código interno (PEIBA): **1520-N-23**, Protocolo versión 3 de fecha **08-01-2024**, HIP versión 1 de fecha **27-09-2023** y CI versión 1 de fecha **27-09-2023**.

Y CONSIDERA QUE:

Se cumplen los requisitos necesarios de idoneidad del protocolo en relación con los objetivos del estudio y se ajusta a los principios éticos aplicables a este tipo de estudios y recogidos en la Declaración de Helsinki.

El tratamiento de los datos de carácter personal de los participantes se ajusta a lo dispuesto en el Reglamento (UE) 2016/679 del Parlamento Europeo y del Consejo de 27 de abril de 2016 y en la Ley Orgánica 3/2018, de 5 de diciembre de Protección de Datos Personales y garantía de los derechos digitales y de igual forma se ajusta a las normas de buena práctica clínica.

Están justificados los riesgos y molestias previsibles para los participantes. Es adecuado el procedimiento para obtener el consentimiento informado.

Por todo lo anterior:

El *Comité de Ética de la Investigación Provincial de Huelva*, en su reunión del día 16 de enero de 2024 (Acta 01/24) tras la evaluación del citado Proyecto de Investigación emite un **DICTAMEN FAVORABLE**.

Dicho Comité, está constituido y actúa de acuerdo con la normativa vigente y las directrices de la Conferencia Internacional de Buena Práctica Clínica.

Al ejecutar este proyecto, el investigador contrae una serie de compromisos con respecto al Comité, que se detallan en el Anexo I

Lo que firmo, en **Huelva** a **17 de enero** de **2024**

Firmado:


D^a. María Dolores Santos Rubio
Secretaria del CEI Provincial de Huelva

Área Hospitalaria Juan Ramón Jiménez

Ronda Norte, s/n. 21005 Huelva
Teléf. 959 01 60 00





Junta de Andalucía

Consejería de Salud y Familias

ANEXO I

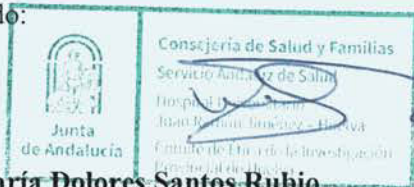
COMPROMISOS CONTRAÍDOS POR EL INVESTIGADOR CON RESPECTO AL COMITÉ DE ÉTICA DE LA INVESTIGACIÓN

Se recuerda al investigador que la ejecución del proyecto de investigación le supone los siguientes compromisos con el Comité:

- Ejecutar el proyecto con arreglo a lo especificado en el protocolo, tanto en los aspectos científicos como en los aspectos éticos.
 - Notificar al Comité todas las modificaciones o enmiendas en el proyecto y solicitar una nueva evaluación de las enmiendas relevantes.
 - Enviar al Comité un informe final al término de la ejecución del proyecto. Este informe deberá incluir los siguientes apartados:
 - Indicación del número de registro del proyecto en bases de datos públicas de proyectos de investigación, si procede;
 - la memoria final del proyecto, semejante a la que se envía a las agencias financiadoras de la investigación;
 - la relación de las publicaciones científicas generadas por el proyecto;
 - el tipo y modo de información transmitida a los sujetos del proyecto sobre los resultados que afecten directamente a su salud y sobre los resultados generales del proyecto, si procede;
- El Comité, dentro del ejercicio de sus funciones, podría realizar el seguimiento aleatorio de los proyectos durante su ejecución o al finalizar el mismo.

Lo que firmo, en **Huelva** a **17** de **enero** de **2024**

Firmado:



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Junta de Andalucía

Consejería de Salud y Familias

ANEXO II

COMPOSICIÓN DEL CEI PROVINCIAL DE HUELVA

Presidenta: D^a. Clara Rosso Fernández

Vicepresidente: D. Francisco Javier Carrasco Sánchez

Secretaria: D^a. María Dolores Santos Rubio

Vocales: D^a. Amelia Jiménez Heffernan

D^a. Esperanza Begoña García Navarro

D. Juan Alguacil Ojeda

D. Manuel García de la Vega Sosa

D^a. Raquel Remesal Cobreros

D. David Morales Pancorbo

D. Juan Víctor Lorente Olazábal

D^a. Carlota Méndez del Barrio

D. Manuel Trujillo Lara

D^a. Sonia María Pastor Montero

D^a. Yolanda Arco Prados

D. Francisco Manuel Miguela Borrero

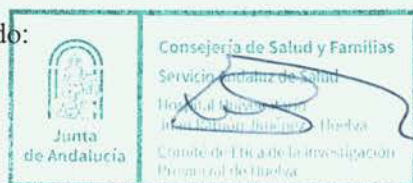
D. Dalmiro Prados Jiménez

D^a. María Auxiliadora Reyes Burgos

D^a. Ana Moreno Ballesteros

Lo que firmo, en **Huelva** a **17 de enero** de **2024**

Firmado:



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Secretaria del CEI Provincial de Huelva

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Publicación 1:

Título

Stress in novice nurses in new work environments:
a systematic review

Referencia

Narbona-Gálvez Á, García-Iglesias JJ, Ayuso-Murillo D, Fontán-Vinagre G, Gómez Salgado J, Allande-Cussó R, Fagundo-Rivera J, Macías-Toronjo I and Ruiz-Frutos C. Stress in novice nurses in new work environments: a systematic review. *Front. Public Health*. 2024. 12:1463751. doi: 10.3389/fpubh.2024.1463751

Datos de la revista

Título: Frontiers in Public Health

Título abreviado: Front. Public Health

Idioma: Inglés

Factor de Impacto (2024): 3.4

Ranking (JCR): SCIE PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH

Q1 (78/419)

Copia del artículo



OPEN ACCESS

EDITED BY

Carla Viegas,
Instituto Politécnico de Lisboa, Portugal

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RECEIVED 12 July 2024

ACCEPTED 18 October 2024

PUBLISHED 30 October 2024

CITATION

Narbona-Gálvez Á, García-Iglesias JJ,
Ayuso-Murillo D, Fontán-Vinagre G,
Gómez-Salgado J, Allande-Cussó R,
Fagundo-Rivera J, Macías-Toronjo I and
Ruiz-Frutos C (2024) Stress in novice nurses
in new work environments: a systematic
review.
Front. Public Health 12:1463751.
doi: 10.3389/fpubh.2024.1463751

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Stress in novice nurses in new work environments: a systematic review

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Background: Inexperienced nursing care can compromise the quality of care and the well-being of patients. The aim of this study was to assess the main sources of stress encountered by nurses and novice nurses in a setting not previously experienced.

Methods: A systematic review was conducted following the PRISMA format in Pubmed, Scopus, Web of Science, and CINAHL electronic databases in March 2024. A total of 395 studies were identified, of which 16 met the inclusion criteria. Selection was made on the basis of topic relevance and methodological quality, assessed using the critical tools of the Joanna Briggs Institute (JBI).

Results: A total of 16 studies were included in this review. Of the 16 selected, 10 were cross-sectional studies, 3 were cohort studies, 2 were qualitative, and 1 was a systematic review. The studies revealed that the main stressors for novice nurses included time management, workload, and interpersonal relationships. The results underline that organizational factors, such as lack of support and high work demands, play a key role in generating stress.

Conclusion: Identifying and addressing the key challenges faced by novice nurses, such as workload, adjustment to the environment, professional expectations, and interpersonal relationships, is crucial to sustain their professional engagement and ensure the quality of health care. This understanding is essential for creating efficient policies and practices that enhance the occupational well-being and stability of nurses in the workforce.

Systematic review registration: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42024520651, CRD42024520651.

KEYWORDS

nurses, occupational stress, professional burnout, psychological adaptation, mental health, clinical competence

Introduction

The nursing profession is an essential part of the health care system, but faces significant challenges that threaten its stability, such as work-related stress, high staff turnover, and the complexity for newly graduated nurses in adapting to the workplace. These problems need to be urgently explored and addressed (1).

Stress among nursing staff is a widespread phenomenon that affects not only the physical and mental health of professionals, but also the quality of the care they provide (2). This is compounded by high expectations, overwhelming responsibilities, and limited empowerment in their daily work (3). Alarming, attrition rates in nursing are more than twice as high as in other health professions, which represents a significant gap (3).

The transition of newly graduated nurses from the academic environment to the world of work is a difficult process that brings mental and psychological pressures (4). Upon entering clinical practice, these professionals experience strains ranging from difficulty in communication to ethical dilemmas and overwhelming workloads (5). Lack of adequate skills and guidance contribute to increased stress and often to the onset of emotional exhaustion and burnout (4).

The COVID-19 pandemic has worsened the existing human resource shortage in the nursing profession and has increased the pressure on novice nurses, who face a more demanding and challenging work environment (6). It is crucial to understand how job stress during the first year of employment impacts on nurses' health and on the quality of patient care. This study seeks to relate the results obtained to organizational and environmental factors that may intensify or reduce stress, with the aim of providing a deeper insight into how these factors influence the adaptation of novice nurses.

Recently, the study of job stress in nursing has gained more importance, especially through Bakker and Demerouti's Job Demands-Resources model (7). This theory analyses how the specific demands of nursing work, such as emotional distress and its intensity, are related to the resources available to cope with these demands. Understanding this makes it possible to identify the causes of work-related stress in nursing, highlighting the importance of managing these demands and promoting resources that enhance nurses' well-being (7). This theoretical approach will serve as a basis for exploring how the demands and available resources may influence the experience of novice nurses when entering the workplace, which is one of the main objectives of the study. In this regard, another possible problem for newly graduated nurses is the gap that may exist between the theoretical contents learnt so far at university and the reality shock that, in some cases, comes with the need to carry out a task in a short period of time (8).

The theory by Benner (9) on Nursing Competence Development highlights that as nurses gain experience and skills, they are faced with increased responsibilities, which can in turn raise their stress levels. The transition from novice to expert nurse involves taking on more complex roles and making important decisions, which adds to the emotional and psychological burden. Therefore, strategies to manage stress and provide support during their career are essential (9).

Lack of nursing experience can affect both the quality of care and the well-being of patients. Novice nurses often find it difficult to handle complex situations or to deal with patients with pathologies they are unfamiliar with or have not dealt with before, which can affect their decisions and their performance. In addition, unfamiliarity with the hospital environment and protocols generates anxiety and

uncertainty, further complicating their work. It is essential to provide training and mentoring programs to support nurses as they move into more specialized roles (10).

Newly graduated nurses may experience insecurities related to their lack of experience, difficulties in integrating into work teams, and in understanding their professional role (11). These factors can make nurses more vulnerable and turn them into "second victims" after an adverse patient care event, a term coined by Wu (12) which describes the emotional distress suffered by health professionals after experiencing such a situation. It is estimated that almost half of them could go through this experience at some point in their careers, which seriously compromises their well-being and job performance (13).

The specific aim of this study is to investigate the relationship between stressors affecting novice nurses and their transitions in various work settings. In doing so, it seeks to provide a holistic view of the factors that increase vulnerability to stress, and also to identify possible interventions to facilitate a smoother transition and minimize the negative effects of stress on the quality of care provided to patients.

Overall, this study represents an analytical journey aimed at assessing the main sources of stress experienced by nurses and novice nurses in a setting new to them. The objective of this review is to provide a comprehensive and detailed overview of the challenges faced in the nursing profession by exploring different approaches and perspectives, with a view to providing valuable insights that will contribute to the formulation of more effective policies and practices that focus on the well-being of professionals and the quality of patient care.

Methods

Study design

A systematic review was conducted following the guidelines of the PRISMA statement (Preferred Reporting Items for Systematic reviews and Meta-Analyses) (14).

Databases and search strategy

The search was carried out in the Pubmed, Scopus, Web of Science, and Cumulative Index to Nursing and Allied Health Literature (CINAHL) electronic databases on the basis of the key words that the research question yielded, following the CoCoPop strategy (15) (Table 1). These databases were selected on the basis of their relevance and wide recognition in the field of health sciences and Nursing, thus ensuring a comprehensive and representative review.

The Medical Subject Headings (MeSH) thesaurus was consulted using these keywords, yielding the descriptors Disabled Persons, Barriers, and Universities. To improve the search strategy and ensure relevant

TABLE 1 CoCoPop format: keywords (Spain, 2024).

Condition	Stress
Context	Working in settings not previously experienced
Population	Novice nurses/nurses
Research question	<i>What is the prevalence of stress in novice nurses and nurses working in a new setting not previously experienced?</i>

TABLE 2 Search strategy used for each database (Spain, 2024).

Database	Search strategy	Results
Pubmed	(novice nurs*[Title/Abstract] OR newl* graduate nurs*[Title/Abstract] OR junior nurs*[Title/Abstract] OR newl* nurs*[Title/Abstract]) AND (Psychological Stress[Title/Abstract] OR Life Stress[Title/Abstract] OR Psychological Distress[Title/Abstract] OR Emotional Distress[Title/Abstract] OR Emotional Stress[Title/Abstract] OR Job stress[Title/Abstract] OR Occupational Stress[Title/Abstract] OR Work-related Stress[Title/Abstract] OR Workplace Stress[Title/Abstract] OR Professional Stress[Title/Abstract] OR Job-related Stress[Title/Abstract]) Filters: from 2014–2024	109
Scopus	(TITLE-ABS-KEY (“novice nurs*” OR “new* graduated nurs*” OR “junior nurs*” OR “new nurs*”) AND TITLE-ABS-KEY (“Psychologic* Stress*” OR “Life Stress*” OR “Psychological Distress” OR “Emotional Distress” OR “Emotional Stress*” OR “Job stress*” OR “Occupational Stress*” OR “Work-related Stress*” OR “Workplace Stress*” OR “Professional Stress*” OR “Job-related Stress*”)) AND PUBYEAR >2013 AND PUBYEAR <2025	101
Web Of Science	“novice nurs*” OR “new* graduated nurs*” OR “junior nurs*” OR “new nurs*” (Topic) AND “Psychologic* Stress*” OR “Life Stress*” OR “Psychological Distress” OR “Emotional Distress” OR “Emotional Stress*” OR “Job stress*” OR “Occupational Stress*” OR “Work-related Stress*” OR “Workplace Stress*” OR “Professional Stress*” OR “Job-related Stress*” (Topic) and 2024 or 2023 or 2022 or 2021 or 2020 or 2019 or 2018 or 2017 or 2016 or 2015 or 2014 (Publication Years)	136
CINAHL	AB (“Psychologic* Stress*” OR “Life Stress*” OR “Psychological Distress” OR “Emotional Distress” OR “Emotional Stress*” OR “Job stress*” OR “Occupational Stress*” OR “Work-related Stress*” OR “Workplace Stress*” OR “Professional Stress*” OR “Job-related Stress*”) AND AB (“novice nurs*” OR “new* graduated nurs*” OR “junior nurs*” OR “new nurs*”). Filters: from 2014 to 2024	49
Total		395

studies were captured, synonymous terms were also included using Boolean operators *AND* and *OR*. Table 2 shows the search strategy applied during the search process performed on 02 March 2024 for each of the above databases. The search strategy was limited from 2014 to 2024.

3 Certain types of publications, such as opinion articles, editorials, and letters to the editor were excluded, as these types of articles do not provide empirical data that conforms to the objectives of this review.

Selection criteria

The following criteria were used to select the articles:
Inclusion criteria:

- 1 Language: Only original articles published in English, Spanish, French, or Portuguese.
- 2 Type: original articles, meta-analysis, systematic reviews, short communication, and case reports.
- 3 Population: nurses and novice nurses facing situations not previously experienced, considering novice nurses as those with less than 1 year of nursing work experience.
- 4 Articles measuring any of the following values and/or effects:

- Stress level of nurses and novice nurses in situations they have not experienced before.
- Stressors inherent to the nursing practice.

Exclusion criteria:

- 1 Studies that were classified as being of low scientific-technical quality after application of the quality assessment tool were excluded. This assessment was carried out by two reviewers independently, both of whom determined the methodological quality of the selected studies.
- 2 Articles that did not directly address the research question and those that were not related to the objectives of the review were excluded, ensuring that all included studies made a meaningful contribution to understanding the stress of novice nurses in new work settings.

Data collection and extraction

Two researchers conducted independent searches, eliminated duplicate studies, and selected articles for inclusion based on previously established criteria after reading the abstract and title. Subsequently, the full text of potentially eligible studies was reviewed by the same two authors, and decisions to include or exclude studies were made by consensus. Any discrepancies were resolved by a third author.

Methodological quality assessment

The methodological quality of the selected studies was independently determined by two reviewers by using the Critical Appraisal Tools for Trials of the Joanna Briggs Institute (JBI) at the University of Adelaide (16). These tools enable the assessment of a study’s methodological quality and the identification of any potential bias in its design, conduct, and/or analysis. To ensure consistency and reliability in the assessment, the reviewers met before starting the process to discuss and unify criteria. The versions for quantitative cross-sectional studies (8 items), qualitative studies (10 items), systematic reviews (11 items), and cohort studies (11 items) were used, with a cut-off point of 6 for the first two and 8 for the last two to accept their inclusion in this review. This evaluation process is detailed in the [Supplementary material](#), which also includes a table summarizing the quality scores for each included study.

Results

A total of 395 references were identified by applying the initial search strategies, which were then screened according to the topic of

this review. Finally, 16 studies were selected (Figure 1), of which 10 were descriptive cross-sectional studies, 3 were cohort studies, 2 were qualitative studies, and 1 was a systematic review.

Four articles were found to have been conducted in China (1, 3, 17, 18), 2 in Taiwan (6, 19), 1 in the UK (2), 1 in the Netherlands (20), 1 in Oman (4), 1 in the United States (5), 1 in South Korea (21), 1 in Brazil (13), 2 in Canada (22, 23), 1 in Denmark (24), and 1 in Jordania (25).

In 10 of the 16 selected studies (1, 3, 5, 6, 13, 17, 19–21, 24), the sample consisted of newly graduated nurses, while in 1 of the selected studies (17) the sample consisted of nurses with 1 year of experience. In another selected article the sample consisted of novice nurses at the beginning of their career, at 6 months, and at 12 months. In another study, the sample consisted of nurses with less than 2 years of experience (22), and another study involved nurses with less than 3 years' experience (23). The last article to be included (4) was an integrative review including 21 review articles.

Among the interventions, the NSS scale was used (1–3), and also the PSS (17, 18) in some of the studies, while self-structured questionnaires were utilized in other investigations (3, 6, 13, 19, 21, 25). Another study used both the PSS questionnaire and the CD-RISC-25 (25). The NWI-R (23) and CERQual (24) questionnaires were also used in other articles.

The JBI critical appraisal tool was used to assess the included studies, which scored medium-high for both cross-sectional observational studies and qualitative studies.

Table 3 shows the characteristics of each of the 16 studies included in this review. The studies were classified by their authors, year of publication, country, design and objective, participants, instrument, and main results. Additionally, the results of the JBI critical appraisal tool were included.

Discussion

In various studies, such as the one by Fang et al. (3), multiple stages in which new nurses experience varying levels of work-related stress have been identified. Prominent factors include time management, workload, and interpersonal relationships. These findings are consistent with previous research, such as the one conducted by Feeg et al. (5), which emphasizes the significance of time management and adaptation to the work environment as sources of stress. The analysis highlights the inherent complexity of the nursing work environment, where time management, management skills, and interpersonal relationships play a crucial role in emotional well-being and professional performance (5). This approach is consistent with the stress model proposed by Lazarus and Folkman (26), which suggests that the way people view work demands and their ability to cope with those demands are key to understanding how they deal with stress (26). Therefore, understanding these factors is essential in order to develop effective support and training strategies to help new nurses face and overcome challenges throughout their careers (5).

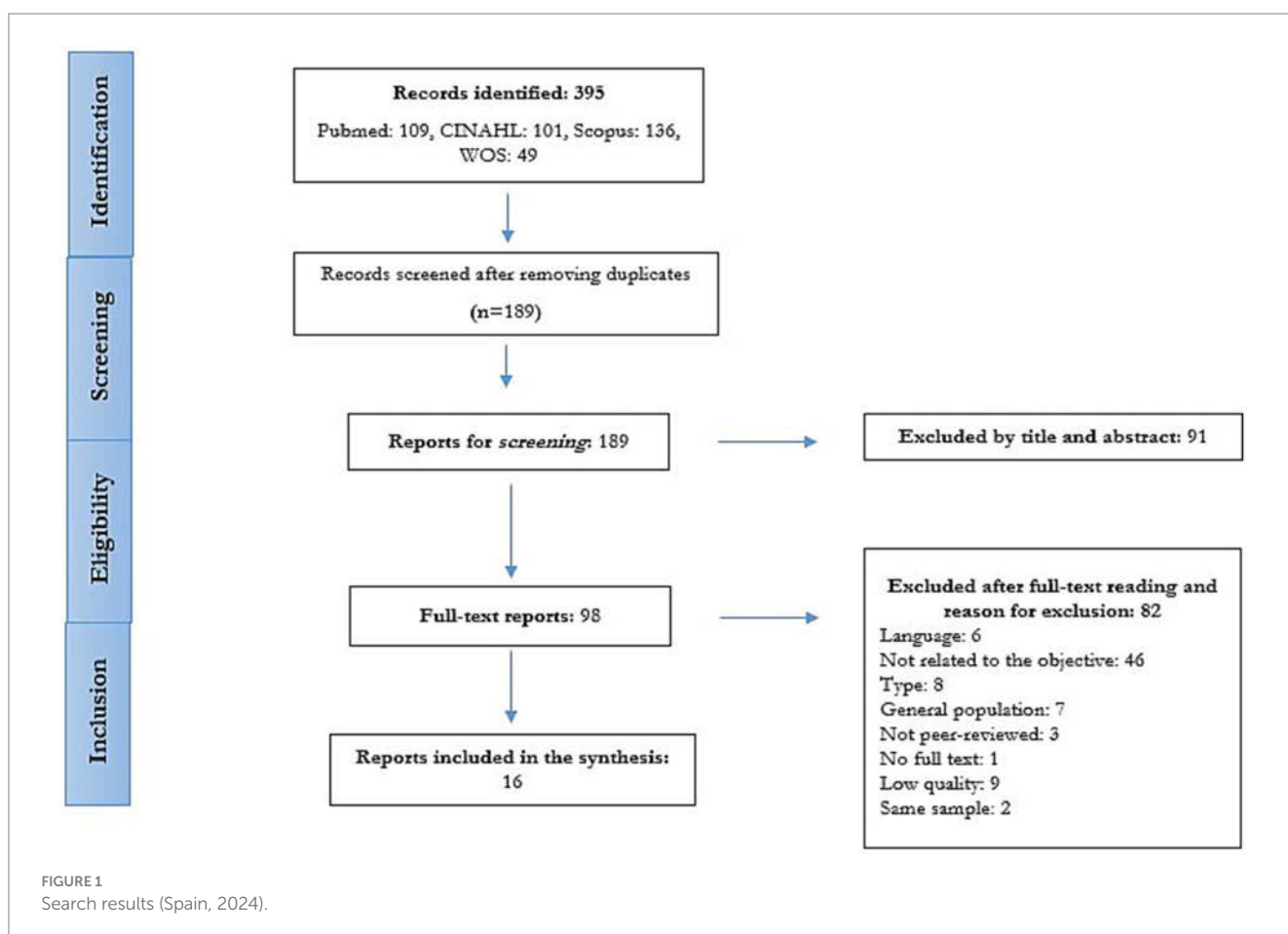


TABLE 3 Characteristics of the studies included in the systematic review (Spain, 2024).

Studies	Context	Study objective	Type of study	Participants	Methods	Main findings	Quality of studies
Fang et al. (3)	Fujian (China)	To analyze changes in occupational stress in new nurses during the first year of employment	Analytical study	Recruited new nurses ($n = 127$)	NSS Chinese version	The results showed that new nurses had moderate to high levels of stress in all four stages, with the highest stress level at 4 and 8 months of employment and the lowest stress level at 12 months; the differences in stress scores at different time points were statistically significant (). The trends in each stressor dimension varied across different periods. The highest scores were for pressure caused by “time allocation and workload,” which peaked in month 8. The same trend was observed for stress from “patient care” and “work environment and equipment.” “Management and interpersonal relationships” scored the highest overall stress score at the start of employment before declining. The lowest stress score was from “work environment and equipment” at the start of employment, and the lowest was from “management and interpersonal relationships” from month 4 onward	6/8
Halpin et al. (2)	London (United Kingdom)	To investigate transition in newly qualified nurses through an exploration of their stressors and stress experiences during their first 12 months post-qualifying	Cohort study	Newly graduated nurses: at the time of qualification ($n = 288$), 6 months later ($n = 107$) and 12 months later ($n = 86$)	NSS	Workload was consistently the highest reported stressor with inadequate staffing and managing multiple role-demands given as explanations. Incivility within the workplace was a noted stressor. Conversely, being part of “a good team” provided a civil, supportive, facilitative work environment. Entering nurse education with previous healthcare experience had a mediating effect on the reported frequency of stressors	8/11
Hoeve et al. (20)	Groningen (The Netherlands)	Getting insight in the most crucial organizational job stressors for novice nurses’ professional commitment and whether the job stressors are mediated through negative emotions	Cohort study	Novice nurses ($n = 18$)	Semi-structured electronic diary that assesses: 1. Organizational job stressors 2. Emotions 3. Work commitment: measured using the scale (RECS-E)	Path modeling revealed that lack of support from colleagues, negative experiences with patients and confrontations with existential events were most strongly negatively related to professional commitment through negative emotions. Other indirectly and negatively related organizational job stressors to commitment were complexity of care, lack of control and work-life imbalance; only conflicting job demands, and lack of control related to professional commitment directly	8/11
Labrague and McEnroe-Petitte (4)	Masqat (Oman)	To appraise and synthesize evidence relating to new nurses’ stress experiences during the transition period	Systematic review	21 review articles	PRISMA	New nurses perceived low to moderate levels of stress mainly from heavy workloads and lack of professional nursing competence. Individual and organizational factors that might contribute to their stress experiences were rarely explored	9/11

(Continued)

TABLE 3 (Continued)

Studies	Context	Study objective	Type of study	Participants	Methods	Main findings	Quality of studies
Zhang et al. (1)	Shanghai (China)	To determine differences in occupational stress levels of newly graduated nurses at different time points during the first 3 years of practice; to identify potential subgroups of nurses who perceive different occupational stress levels over time; and to evaluate differences in identified subgroups based on demographic and work-related characteristics	Analytical study	Newly graduated nurses with no experience ($n = 152$)	NSS	The entire sample of newly graduated nurses experienced a significant decrease in occupational stress during the first 3 years. The best-fitting group-based trajectory model described three distinctive trajectories: low occupational stress (19.1% of sample); medium occupational stress (67.1%) and high occupational stress (13.8%). The low occupational stress subgroup had a higher proportion of nurses from Shanghai, and the majority were employed as contact-based nurses. In comparison, the high occupational stress subgroup had the largest proportion of nurses from other provinces (outside of Shanghai), almost half of participants were employed as “bianzhi” nurses, and the majority reported to be assigned preceptor by shift	6/8
Feeg et al. (5)	New York (United States)	To understand the experiences of new nursing graduates in their work environment and the perceived stressors during their transition to the role of a competent nurse	Qualitative study	Newly graduated nurses ($n = 1,456$)	NSNA survey	Respondents felt that a high nurse/patient ratio was not safe for the patients under their care. Respondents also felt that they could not provide complete care to their patients. Respondents felt that there was not enough time to complete patient care After the first categorical analysis, the researchers elaborated on how individual items revealed meaningful statements or how new graduates were trying to find “balance” in their work, their expectations, and their interactions with others. The topics that emerged related to respondents’ overall “balance,” reflecting environmental stress (“My workload is higher than I expected”); expectations about oneself (“I do not know everything I need to know”); and interactions with others that affected them (“My relationships with others are difficult”)	9/10
Zhu et al. (18)	Shanghai, Hong Kong and Taipei (China)	to explore and compare stress, coping, professional identity and work locus of control of new graduate nurses among Shanghai, Hong Kong and Taipei.	Analytical study	Nurses with 1-year experience in the hospital ($n = 591$)	• PSS Questionnaire • Chinese trait coping style questionnaire • Nurse professional identity scale • Work locus of control scale (Chinese version)	The newly graduated nurses in Shanghai had significantly lower ($p < 0.05$) work stress score (2.65 ± 0.67) compared with their counterparts in Hong Kong (2.99 ± 0.69) and Taipei (2.94 ± 0.60). Newly graduated nurses in Shanghai tended to choose positive coping to deal with stressful situations, whereas those in Hong Kong would be more likely to adopt negative attitudes ($p < 0.05$). The newly graduated nurses in Taipei had the lowest level of professional identity (3.25 ± 0.55 , $p < 0.05$), and their work control tended to be external (46.13 ± 6.20). In contrast, those in Shanghai (52.75 ± 6.04) and Hong Kong (59.41 ± 7.29) tended to be controlled internally	6/8

(Continued)

TABLE 3 (Continued)

Studies	Context	Study objective	Type of study	Participants	Methods	Main findings	Quality of studies
An et al. (21)	Gwangju (South Korea)	To examine turnover intention levels and identify the factors affecting turnover intention of new Generation Z nurses, focusing on job stress and sleep disturbance	Analytical study	New nurses ($n = 133$)	Structured questionnaire including data on job stress, sleep disturbance, and turnover intention	Most nurses were women (91.7%) and approximately two-thirds worked in the surgical ward ($n = 61$, 45.9%). Turnover intention was 12.8%, average job stress was 40.11 ± 90.7 , and average sleep disturbance was 42.39 ± 15.27 . New graduate nurses' turnover intention was associated with job stress ($OR = 1.07$, 95% $CI = 1.02-1.12$) and sleep disturbance ($OR = 1.19$, 95% $CI = 1.05-1.35$), and this model explained 47.7% of the variance. Study findings determine that job stress and sleep disturbance were significant predictors of turnover intention in new nurses at the eighth week after joining the hospital	8/8
Zhou et al. (17)	Jiangsu, Zhenjiang (China)	To investigate some possible job stress factors that could influence newly recruited nurses' behavior to either continue or discontinue their job with their organization	Analytical study	Novice nurses in 20 Chinese hospitals ($n = 564$)	PSS Questionnaire.	The effects of six job stressors from the perceived stress scale were estimated. The results showed that four stressors, stress from taking care of patients ($\beta = 0.111$, $p < 0.01$), stress from roles and workload ($\beta = 0.129$, $p < 0.001$), stress from co-workers and daily life ($\beta = 0.323$, $p < 0.001$) and stress from lack of professional knowledge and skills ($\beta = 0.137$, $p < 0.001$), from the perceived stress scale had a significant impact on turnover intention among nurses	8/8
Chen et al. (19)	Keelung (Taiwan)	To develop an Objective Structured Clinical Exam (OSCE) to evaluate novice nursing practitioners' clinical competency, work stress, professional confidence, and career satisfaction	Quasi-experimental study	Novice nurses ($n = 55$)	Pre-post questionnaire (modified from a Nursing Competency Questionnaire, a Stress scale, and Satisfaction with Learning scale)	Among the novice nursing practitioners, 41 of them (74.5%) passed the exam with a mean score of 61.38 ± 8.34 . There was a significantly higher passing rate among nurses who were working in medical-surgical wards (85.7%) and the intensive care unit-emergency department (77.8%) compared to novice nursing practitioners working in other units. All the novice nursing practitioners at Station A had poor performance in assessing patients with a fever. OSCE performance was more associated with educational attainment and work unit, rather than the gender. Finally, the participants showed statistically significant increases in their clinical competency, confidence in their professional competence, satisfaction with the clinical practice, and decreased work stress after the OSCE	9/9

(Continued)

TABLE 3 (Continued)

Studies	Context	Study objective	Type of study	Participants	Methods	Main findings	Quality of studies
Chen et al. (6)	Chang Gung, Chiayi (Taiwan)	To explore registered nurses' competence in nursing care and their intention to stay in their current workplace	Analytical study	Novice nurses (n = 333)	Structured questionnaire to assess factors related to nursing competence based on the essentials of baccalaureate education for professional nursing practice	The results of the present study revealed that the majority of the novice nurses' workplaces varied significantly among the transition shock. The novice nurses had the competence to provide quality care related to patient ethics, end-of-life care, and risk prevention. However, the novice nurses had the lowest average score in "utilization of care models, implementation, and leadership in the team," indicating a lack of adequate practicum experience in leading care teams. The results indicated that the novice nurses who took infection care related courses in baccalaureate nursing programs were more familiar with relevant concepts and had greater awareness of care related concepts. The results indicated that the participants were willing to stay in their current nursing workplace and that care competence was positively correlated with intention to stay. Intention to stay was negatively correlated with clinical stress. The stepwise regression analysis revealed the following significant predictors of intention to stay: clinical stress, frequency of caring for infectious patients in the workplace, receiving nursing courses in the work field, and the frequency of care for patients in professional nursing careers	7/8
Alevi et al. (13)	São Paulo (Brazil)	To describe the prevalence of newly graduated nurses as second victims of adverse events and to know the conditions of support received in health institutions	Analytical Study	Nurses (n = 138)	Online questionnaire on the characteristics of the participants, the institution, and adverse events	A total of 240 responses were obtained, of which 138 were considered for analysis. Most of the participants were women, recent nursing graduates. A significant percentage had worked as nursing assistants or technicians before graduating. Many were studying in specialization or professional residency. Most of them had no institutional onboarding training when hired and did not know the term "second victim." Around 27% had been involved in adverse events, mainly related to medication. After these events, the majority reported negative feelings and insecurity, but only 59.5% felt they had received support. Some participants had received punishment. No significant differences were found between those who had received feedback on their training and recruitment period and those who had not, in terms of being involved in adverse events	6/8

(Continued)

TABLE 3 (Continued)

Studies	Context	Study objective	Type of study	Participants	Methods	Main findings	Quality of studies
Dames (22)	Canada	To analyse how life experiences and university education influence newly graduated nurses' ability to manage stress, maintain emotional congruence, and thrive in their work, to reduce the risk of burnout and achieve career success	Qualitative study	Female nurses under the age of 40, with less than 2 years of work experience, in British Columbia, Canada ($n = 8$)	Three 60-90-min interviews with each participant. The first two interviews were conducted 1–2 weeks apart, and the third interview, 3–4 weeks later	The most influential themes that emerged from the undergraduate factors, which interplay to impact congruence and one's ability to thrive in their novice nurse role were frequent self-care, receiving practicum and job placement advice that promoted congruence and identity formation, curriculum components that felt personally and professionally relevant. The importance of setting authentic goals, the ability to act as change agents and the development of self-compassion were also highlighted. However, self-care was perceived as a symbolic rather than a practical concept, and some participants felt pressure to follow career paths that did not align with their preferences, leading to stress and dissonance. Emotional management and personal-professional congruence emerged as key elements in mitigating burnout	8/10
Laschinger et al. (23)	Canada	To investigate factors influencing new graduate nurses' successful transition to their full professional role in Canadian hospital settings and to determine predictors of job and career satisfaction and turnover intentions over a one-year time period in their early employment	Cohort study	Newly graduated nurses in Canada with less than 3 years of experience ($n = 406$)	NWI-R	Authentic leadership, perceptions of structural empowerment, and person-job fit were moderate at both time points, decreasing significantly over time. At both time points, new graduates felt that their work environment was supporting, maintaining high rates of job and career satisfaction, as well as low turnover intentions. Significant correlations were found between person-job fit and psychological capital (Pscap) with job satisfaction. In addition, cynicism and Pscap were identified as significant predictors of job satisfaction and turnover intentions	7/11
Al Hadid et al. (25)	Salt (Jordanian)	To examine the impact of caring for patients with COVID-19 on career decisions, resilience, and perceived self-efficacy among newly hired nurses in Jordan. It also tested whether stress, resilience, and other factors would predict intentions to stay among new nurses who care for patients with COVID-19	Analytical study	Newly hired nurses ($n = 300$)	- Demographic characteristics - PSS - CD-RISC-25	most newly hired nurses reported low to moderate levels of occupational stress, and only around half of them showed low to moderate resilience. In addition, the majority picked nursing as their preferred job, expressing a high level of autonomy in decision-making as well as existing work conditions that were unfavorable and as a result affected their decision to continue in nursing. Only financial return was a significant predictor to stay in nursing among nurses in this study. Examining the influence of caring for COVID-19 patients on newly hired nurses' career decisions is suggested as well as the development of interventional programs to improve their well-being	7/8

(Continued)

TABLE 3 (Continued)

Studies	Context	Study objective	Type of study	Participants	Methods	Main findings	Quality of studies
Kaldal et al. (24)	Aalborg (Denmark)	To summarize existing research syntheses reporting newly graduated registered nurses' experiences of providing direct care in hospital settings, in order to develop evidence-based recommendations for clinical practice and research	Analytical study	44 review articles	CERQual	Newly graduated registered nurses face multiple challenges in the transition from student nurse to practicing nurse. Many experience a marked lack of competence in areas such as communication with patients and colleagues, leading to insecurity and stress. They also suffer from emotional distress and low self-confidence, which affects their ability to provide adequate care. The need for support is crucial to their professional development, as they rely on colleagues and mentors to acquire skills and manage stress. However, the work culture can negatively influence their experience, with judgmental behaviors limiting their willingness to seek help. The review emphasizes the urgency of implementing educational and organizational strategies that address these needs, as well as the importance of considering the professional identity of these nurses, as this impacts on the quality of patient care and on their job satisfaction	6/8

NSS, The Nursing Stress Scale; RECS-E, Repeated Exploration and Commitment Scale in the domain of Education; PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses; NSNA, National Student Nurses' Association; PSS, Perceived Stress Scale; OSCE, Objective Structured Clinical Examination; NWI-R, Nursing Work Index - Revised; CD-RISC-25, The Connor-Davidson Resilience Scale.

Feeg et al. (5) and Chen et al. (19) address the stress derived from professional expectations among newly graduated nurses, highlighting the feeling of “not knowing everything they should know” as a significant source of stress. This pressure reflects the challenging transition from formal education to clinical practice, with resulting insecurities and anxieties. According to Benner’s transition model (1984) (9), novice nurses go through different phases in their professional development, and their sense of lack of competence is greatest in the early stages. This has been supported by recent research highlighting the importance of adequate training (9). Lack of experience, identified by Halpin et al. (2), also contributes to initial stress. However, the research by Chen et al. (19) showed that stress levels decrease with training and experience, highlighting the significance of continuous training and professional development to mitigate stress and enhance adaptation to work challenges for newly graduated nurses.

The research by Halpin et al. (2) highlighted lack of experience as a stressor in nurses, emphasizing the importance of previous experience in health care in adapting to work stress. Experienced professionals show greater confidence and effectiveness in difficult situations, which reduces their vulnerability to stress. These findings emphasize the importance of experience and ongoing education in reducing work-related stress among nurses. They also highlight the need to manage professional expectations appropriately to promote well-being and effectiveness in the clinical setting.

Hoeve et al. (20) and Zhou et al. (17) explored different stressors in the nursing work environment. Hoeve et al. (20), on the one hand, highlighted the importance of sharing experiences among newly graduated nurses and belonging to a collaborative team to reduce stress (17). The social support theory by Uchino (27) backs up this idea, indicating that support networks can help reduce the impact of work-related stress on the mental health of professionals. Underpinning this idea, Uchino’s social support theory indicates that support networks can mitigate the impact of work-related stress on the mental health of professionals (27). These findings underline the key role of peer social support as a protective factor against work-related stress. Additionally, Zhou et al. (17) assessed work-related stressors, such as caregiving stress, workload, and peer stress. To support stress management, it is crucial to understand the interpersonal dynamics in the nursing work environment and how they affect the psychological well-being of professionals. A work environment that fosters open communication and mutual support can make a significant contribution to the emotional well-being of nursing professionals (17). Also, Kandal et al. (24) emphasize the need for a supportive working environment and collaborative strategies between education and the health sector, concluding that it is essential to address unmet needs to ensure safe and quality care for patients (24).

The findings by Zhou et al. (17) and Labrague and McEnroe-Petitte (4) on work stressors for nurses reflect the complexity of the work environment. Zhou et al. (17) identified caregiving stress, role and workload stress, and peer stress and professional skills as stressors. On the other hand, Labrague and McEnroe-Petitte (4) The study analyzed the impact that the unit to which newly graduated nurses were assigned had on their perceptions of workload and stress. The findings suggest that the work context can affect the experience of stress (28). This relates to Bakker and Demerouti’s Job Demands-Resources model (2007) (7), which states that a demanding and

under-resourced work environment can lead to burnout and dissatisfaction (7). For instance, Blomberg et al. (28) found high levels of stress in novice nurses, particularly in medical or surgical units, which was attributed to excessive workloads. Yeh and Yu (29) found lower levels of stress in nurses working in medical facilities, indicating that organizational interventions can reduce stress. Zhou et al. (17) also identified understaffing and multiple responsibilities as significant challenges, indicating the need to address workload at the institutional level to improve nurses' retention. These findings underscore the importance of interventions that tackle both individual and systemic challenges related to workload and job support to promote nurse retention.

Halpin et al. (2) identified workload as a common stressor, especially during the first 12 months of employment, suggesting that novice nurses are more prone to job stress, which may influence their intention to leave. This phenomenon is exacerbated by the aging workforce, as the decline in younger workers creates a generational imbalance that increases pressure on newly graduated nurses. Tett and Meyer's model on turnover intentions (1993) (30) reinforces this idea by pointing out that job dissatisfaction and stress contribute to the intention to leave. In addition, An et al. (21) examined the relationship between work-related stress, sleep disorders, and turnover intention among novice nurses, highlighting the importance of addressing these problems from the beginning of the career to avoid high staff turnover. This implies that stress and sleep management should be part of the initial training, as they can significantly influence the decision to change jobs (21). In this context, the study by Laschinger et al. (23) emphasizes that job dissatisfaction, influenced by unfavorable working conditions and lack of support, is one of the main causes of high turnover among novice nurses. This study also underlines that fostering positive work environments, with supportive and effective relationships, is key to improving satisfaction and reducing turnover (23).

The study by Chen et al. (6) highlights the competence of novice nurses in ethical and risk prevention areas, but points to deficiencies in team management. The positive correlation between educational level, competence in care, and intention to stay in the profession highlights the importance of continuing education for staff retention. Resilience emerges as a critical factor, particularly during the COVID-19 pandemic, where greater resilience was associated with greater intention to stay in the profession (6). A study in Jordan examined the impact of perceived stress in caring for patients with COVID-19 on nursing career decisions, finding that although many nurses chose this career voluntarily, they expressed dissatisfaction with working conditions and lack of adequate training. The pandemic has exacerbated staff shortages, generating high levels of stress and psychological trauma, particularly among inexperienced nurses. These findings indicate the need for interventions to improve nurses' well-being, given that perception of financial income has been identified as a significant predictor of the intention to remain in the profession (25). This is related to the resilience model by Windle et al. (31), which emphasizes how coping skills can protect against the negative effects of stress in health professionals (31). These findings highlight the importance of addressing training, stress management, and resilience building to enhance the retention and well-being of novice nurses (6).

Understanding the importance of interventions that reduce work-related stress and frustration, as well as the role of nurse managers in

providing support and enhancing professional competence, are key to promoting staff retention and improving quality of care (6).

The study by An et al. (21) focuses on the relationship between work-related stress, sleep disorders, and turnover intention, whereas Chen et al. (6) explore the relationship between competence, clinical stress, and intention to retain the job. Both studies highlight the need for early interventions and support to reduce turnover intention and improve retention of novice nurses. The lack of support and opportunities for skills development can demotivate novice nurses, affecting the stability of the healthcare team and leading to significant costs for healthcare organizations. Nurse leaders can promote the professional development, well-being, and engagement of novice nurses through early intervention and appropriate support, thereby contributing to the quality of care and stability of the nursing team (1).

In order to achieve well-being and satisfaction of newly graduated nurses, it is necessary to find congruence between the 'real self' and the 'ideal self', as stated in the study by Dames (22). This study highlights that discrepancies between expectations formed during university training and the reality of work may increase the risk of burnout, affecting retention in the profession. Integrating self-care and self-compassion practices into the nursing training curriculum can facilitate the adaptation of novice nurses and help them to manage work-related stress. Therefore, fostering an environment that promotes congruence and emotional management is essential for success and stability in the health care team (22).

Limitations

Although this research has contributed to current knowledge about the stress faced by novice nurses, some limitations have been identified. Firstly, when analyzing data from different countries, great diversity in nurses' responsibilities was found, which makes it difficult to establish an objective comparison of the results. This heterogeneity not only affects the interpretation of the data, but may also have implications for direct clinical practice, as stress management strategies may need to be adapted to specific country contexts.

Second, differences in work settings, health policies, and available resources may have the potential to introduce biases and limit the generalisability of results. It is therefore essential that future research focuses on more homogenous settings or incorporates comparative analyses.

Moreover, the inclusion of qualitative studies in the search is another limitation. This is because their exploratory nature may make it difficult to extrapolate the results.

Finally, determining when a nurse is considered a novice presented an additional challenge in assessing the included studies. This lack of clarity suggests that there is a need to standardize definitions and criteria in future research, which would not only facilitate comparison across studies, but also enrich knowledge in this field.

Conclusion

In conclusion, this study has highlighted the various challenges faced by novice nurses in new work environments, such as workload, adaptation to the environment, professional expectations, and

relationship dynamics in the team. By focusing on these aspects, a major need in the literature has been addressed, clarifying how these factors affect the intention of these professionals to remain in the profession, a topic that has been little addressed so far.

Therefore, proactive interventions, such as mentoring programs and structured training, that facilitate the adaptation of novice nurses and encourage improved teamwork are recommended. Future research would also benefit from evaluating the effectiveness of these initiatives, accounting for potential biases and the context of each setting, and from examining the role of leadership in stress reduction.

These actions seek to enhance the experience of novice nurses and also contribute to the stability of the profession, thereby ensuring quality patient care and promoting a healthier work environment. Recognizing and addressing these biases is essential to enrich understanding and strengthen the nursing practice.

Data availability statement

The original contributions presented in the study are included in the article/[Supplementary material](#), further inquiries can be directed to the corresponding authors.

Author contributions

ÁN-G: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. JG-I: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. DA-M: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. GF-V: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. JG-S: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original

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Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpubh.2024.1463751/full#supplementary-material>

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Publicación 2:

Título

Assessment of occupational risks in nurses in Spain.

Preliminary psychometric analysis of the ISTAS_Enfermería Scale.

Referencia

Narbona-Gálvez Á, Allande-Cussó R, Ruiz-Frutos C, Ayuso-Murillo D, Fontán-Vinagre G, García-Iglesias JJ, Navarro-Abal Y, Fagundo-Rivera J, Climent-Rodríguez JA, Gómez-Salgado J. Assessment of occupational risks in nurses in Spain: Preliminary psychometric analysis of the ISTAS_Enfermería scale. *Medicine* 2025;104:1(e41113).

Datos de la revista

Título: Medicine

Título abreviado: Medicine

Idioma: Inglés

Factor de Impacto (2024): 1.4

Ranking (JCR): SCIE MEDICINE, GENERAL & INTERNAL

Q2 (144/332)

Copia del artículo

Assessment of occupational risks in nurses in Spain

Preliminary psychometric analysis of the ISTAS_Enfermería scale

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Abstract

To adapt and evaluate the psychometric properties of the SUSES/ISTAS21 questionnaire for nurses in Spain. Cross-sectional study for the cross-cultural adjustment and psychometric validation of the COPSOQ-ISTAS21 scale. Descriptive analyses were conducted, and data was correlated. A confirmatory factor analysis was performed, thus assessing the reliability and criterion validity. The sample consisted of 2757 Spanish nurses. The exploratory factor analysis identified a 5-factor structure with 15 items, which explained 63.6% of the variance. The factors were named: Support at work; Job satisfaction; Work-related emotional well-being; Job insecurity; and Double presence. The internal consistency of the questionnaire, measured by Cronbach alpha and McDonald omega coefficient, was adequate, with values of 0.764 and 0.741, respectively. The results of the confirmatory factor analysis indicated a good model fit. Three levels of psychosocial risk (low, intermediate, and high) were identified based on percentiles and quartiles of mean scores. The adapted version of the SUSES/ISTAS21 questionnaire showed reliable psychometric properties in Spanish nurses, making it a valid and robust tool for assessing psychosocial risks in this group.

Abbreviations: CFI = comparative fit index, COPSOQ = Copenhagen Psychosocial Questionnaire, EFA = exploratory factor analysis, ISTAS = Instituto Sindical de Trabajo, Ambiente y Salud, RMSEA = root mean square error of approximation, SUSES = Superintendencia de Seguridad Social, TLI = Tucker-Lewis index.

Keywords: factor analysis, nurses, psychosocial risks, scales, Spain, statistical, validation study, workplace stress

1. Introduction

Psychosocial risks in the work environment are defined as a set of factors that can be detrimental to the mental and physical health of workers.^[1] These risks range from work overload and high intensity of emotional demands, to lack of work autonomy, insufficient peer support, and abusive working conditions in the work environment.^[2] Psychosocial risks are particularly prevalent in healthcare professions, given the demanding and stressful nature of the jobs, which are characterized by long working hours, high pressure, and constant contact with human suffering.^[3]

In particular, nurses face specific psychosocial risks that can affect both their personal well-being and the quality of care they provide to patients.^[4] These include work overload, role conflicts, lack of clearly defined responsibilities, harassment at work, and insufficient organizational support.^[5] These factors not only directly influence the mental health of nurses, but can also affect their professional practice and, consequently, the quality of care provided.^[6] Several recent studies highlight how psychosocial risks in the workplace negatively affect nurses' mental health and performance. Conditions such as burnout, work overload, and lack of organizational support have been found to be related to high levels of stress and symptoms of

Permission to conduct this study was granted by the Huelva Provincial Research Ethics Committee, reference 1520-N-23.

The authors have no conflicts of interest to disclose.

All data generated or analyzed during this study are included in this published article [and its supplementary information files].

Supplemental Digital Content is available for this article.

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How to cite this article: Narbona-Gálvez Á, Allande-Cussó R, Ruiz-Frutos C, Ayuso-Murillo D, Fontán-Vinage G, García-Iglesias JJ, Navarro-Abal Y, Fagundo-Rivera J, Climent-Rodríguez JA, Gómez-Salgado J. Assessment of occupational risks in nurses in Spain: Preliminary psychometric analysis of the ISTAS_Enfermería scale. *Medicine* 2025;104:1(e41113).

Received: 10 August 2024 / Received in final form: 3 December 2024 / Accepted: 10 December 2024

<http://dx.doi.org/10.1097/MD.00000000000041113>

anxiety and depression.^[7] These situations not only impact on the personal well-being of nurses, but also increase the likelihood of errors during care and compromise patient safety.^[8] Indeed, an unfavorable working environment in terms of support and management of stress may contribute to a decrease in patient satisfaction, as well as to a higher incidence of adverse events.^[9] This evidence highlights the importance of interventions in the work environment that promote a safe and supportive environment for healthcare workers, as improved psychosocial conditions have the potential to positively impact both the health of professionals and the quality of care they provide.^[7]

As outlined, the above psychosocial risks not only affect nurses, but also have an impact on patients, as their perceived quality of care may decrease when nurses experience high levels of stress and emotional exhaustion.^[10] In addition, patient satisfaction is closely linked to nurses' well-being. Recent studies have shown that a positive working environment for nurses translates into higher levels of patient satisfaction.^[11] On the other hand, the presence of psychosocial risks may lead to an increased incidence of adverse events, such as medication errors or an increased risk of falls, thus compromising patient safety.^[12] Therefore, addressing these risks is considered crucial not only to improve the health of nurses, but also to ensure safe and quality care for patients.

To address and measure these risks, several scales and questionnaires have been developed to assess different dimensions of this construct. These include the Job Content Questionnaire, the Effort-Reward Imbalance Questionnaire, and the Copenhagen Psychosocial Questionnaire (COPSOQ), which are widely recognized for their psychometric properties and their ability to provide useful data on psychosocial risks in various work contexts.^[13]

The first of these, the Job Content Questionnaire, assesses aspects such as job demands, control over work, and social support at work.^[14] This questionnaire has been widely used in international research and has been translated into Spanish and validated.^[15]

The second questionnaire, the Effort-Reward Imbalance Questionnaire, focuses on the relationship between effort invested at work and rewards received, thus addressing the imbalance between effort and reward perceived by the employee.^[16] The Spanish version has also been validated and used in several studies, showing a reliability with Cronbach alphas of 0.85 for the effort scale, 0.88 for the reward scale, and 0.78 for the imbalance scale.^[17]

Finally, the COPSOQ assesses a wide range of psychosocial factors at work, including job demands, influence and possibilities for development at work, interpersonal relations at work, and emotional demands at work.^[18] This questionnaire also has a validated version in Spanish,^[13] with such validation showing adequate internal consistency, making it a very useful tool for assessing psychosocial risks in a variety of work contexts.

Among these scales, the SUSESO/ISTAS21 questionnaire stands out as a robust and effective tool for assessing psychosocial risks.^[13] This questionnaire was developed in Chile by the Social Security Superintendency (SUSESO [Superintendencia de Seguridad Social] in Spanish) in collaboration with the Spanish Trade Union Institute for Work, Environment, and Health (ISTAS [Instituto Sindical de Trabajo, Ambiente y Salud] in Spanish), based on the second version of the COPSOQ.^[18] Its adapted and validated version for the Chilean context has proven to be reliable and valid for assessing psychosocial risks in a wide variety of work settings in Chile. In addition, it is a brief scale that facilitates its use in mass assessments, which makes it a valuable tool for identifying risk factors and planning specific interventions in the workplace.^[15] The SUSESO/ISTAS21 scale is organized into 5 main factors: psychological demands at work, which assesses both quantitative and qualitative demands in the work environment, with a total of 5 items; active work and skill development, which measures autonomy and ability to develop

skills, also with 5 items; social support and quality of leadership, which addresses the social support received and the quality of leadership, consisting of 5 items; compensation, which assesses the balance between effort and reward, with 3 items; and double presence, which considers the additional burden of domestic tasks, assessed with 2 items.^[19]

Many studies have used the SUSESO/ISTAS21 questionnaire to identify risk factors and plan specific interventions.^[13] However, a comprehensive study of its psychometric properties in nurses in Spain has not yet been carried out.

In this context, this article aims to adapt and evaluate the psychometric properties of the SUSESO/ISTAS21 questionnaire in nurses in Spain. The relevance of this research lies in the need for a validated and reliable tool to measure psychosocial risks in the Spanish context, especially in a vulnerable population such as nurses. This study will not only contribute to knowledge about psychosocial risk factors in this professional group, but could also help to develop preventive strategies and labor policies that improve the mental health and well-being of nurses in Spain, in turn promoting higher quality of care for patients.

2. Methods

2.1. Design

A cross-sectional and descriptive study was designed for the cross-cultural adjustment and psychometric validation of the COPSOQ-ISTAS21 scale.

2.2. Field of study

Spanish registered nurses working in health care centers in the Spanish territory.

2.3. Study population and sample

The study population consisted of 325,018 nurses registered in Spain.^[20] Specific data on the number of registered nurses were obtained from the General Council of Nursing in Spain. For this population group, a necessary sample of 384 nurses was estimated, with an error of 5%, a confidence of 95%, and a heterogeneity of 50%. However, eventually, data were collected from 2757 nurses. Since a simple random sampling method was used, the design effect was not considered, as no complex sampling procedures requiring statistical adjustments for clustering or stratification were applied. This sampling approach assumed independence between observations, fulfilling the assumptions necessary for the statistical analyses performed.

The inclusion criteria were: (i) nurses working in health care centers, regardless of their public or private nature; (ii) residents in the national territory (Spain); and (iii) active nurses. The exclusion criteria were: (i) questionnaires not completed in their totality; (ii) questionnaires completed in anomalous times (too short or too long); and (iii) questionnaires in which an unusually high consistency of responses was detected, which could indicate a lack of attention in the response process.

2.4. Instrument

The initial questionnaire used for this study was the short version of the COPSOQ-ISTAS21 questionnaire adapted and validated in Chile.^[19]

This scale, which is based on the Copenhagen Psychosocial Questionnaire developed by the Danish Institute for Health and Work Environment, was translated and culturally adapted for use in Chile.^[19] In this validation, the overall internal consistency, as measured by Cronbach alpha, was 0.85, indicating good reliability. For the subscales, Cronbach alpha values were 0.80 for "Psychological demands"; 0.83 for "Control over

work”; 0.82 for “Social support”; 0.79 for “Job insecurity” and 0.75 for “Double presence.” In addition, confirmatory factor analyses supported the structure of the scale, showing satisfactory fit indices (comparative fit index [CFI] = 0.92; Tucker-Lewis index [TLI] = 0.91; root mean square error of approximation [RMSEA] = 0.05), which confirms the construct validity of the Chilean version.

The short version of the questionnaire contains 20 questions grouped into 5 dimensions:

- I. *Psychological demands at work*: encompassing both qualitative and quantitative factors in the workplace.
- II. *Active labor and skills development*: collecting elements of employee autonomy.
- III. *Social support and leadership quality*: concerning job support received and elements of leadership.
- IV. *Compensation*: elements concerning the effort-reward balance.
- V. *Double presence*: including elements on domestic chores and work-related tasks.

The dimensions and specific items of the SUSESO/ISTAS21 Questionnaire initially analyzed are shown in Table S1, Supplemental Digital Content, <http://links.lww.com/MD/O250>. The calculation of scores in the SUSESO/ISTAS21 questionnaire is directly performed with the points obtained, without transforming them into percentages. The simple summation of the total points obtained gives the score for each dimension. The response scale is a 4-point Likert-type scale, where 0 is the most favorable value and 4 the most unfavorable.

2.5. Procedure

2.5.1. Adaptation of the ISTAS scale. First, a cross-cultural adaptation of the scale was carried out by a panel of experts using the Delphi technique. The experts were selected according to their academic degree (master’s degree for university graduates, secondary school for students, and PhD for the university professor), area of expertise (nursing, psychology, management, and/or preventive medicine), experience (>10 years for graduates, no experience for students, and one-year experience for recent graduates) and their relationship with the specific subject area. The members of the panel of experts were identified by their affiliation to the Spanish National Health Service, through direct consultation on the agency’s official website. They were sent an email requesting their participation, which included information about the project and an express request to participate as an expert, under the premises of confidentiality and voluntariness.

Two psychologists with extensive knowledge of scale validation (female, PhD in Psychology, 43 years old, with 15 years of experience; and female, PhD in Psychology, 45 years old, with 19 years of experience), one professor of Biostatistics (male, PhD in Health Sciences, 54 years old, 27 years of experience), one 4th year undergraduate nursing student (21-year-old woman with no experience) and one 3rd year undergraduate nursing student (22-year-old man with no experience), one dean of nursing (male, PhD in Health Sciences, 63 years old, with 39 years of experience), 2 nursing supervisors (female, MSc, 58 years old, with 35 years of experience; and male, MSc, 49 years old, with 27 years of experience), 2 recent graduates (year 22/23) (female, MSc, 23 years old, with 1 year of experience; and male, MSc, 25 years old, with half a year of experience) and 2 nurses who graduated 2 years earlier (female, MSc, 26 years old, with 2 years of experience) were selected. The composition of the panel of experts (5 men and 6 women) was designed to provide adequate representation for the validation of the scale in the specific context of the study.

In this process, the expert panel assessed areas such as psychometrics, linguistics, and the specific subject matter of the scale and its items. This procedure was carried out in several rounds of anonymous questionnaires that were answered independently by the experts. The panel of experts reviewed the original scale, which was written in Chilean Spanish, in order to assess its suitability and cultural relevance for the context in which it was intended to be applied (see Table S1, Supplemental Digital Content, <http://links.lww.com/MD/O250>). During the review, the experts analyzed each item of the scale in terms of clarity, relevance, and cultural appropriateness. At this point, each item was given a score by each expert ranging from 0 to 15 (clarity: 0–5 points; relevance: 0–5 points; and cultural appropriateness: 0–5 points) and a comment box was provided. The maximum total score for each item was therefore 15 points. The first consensus meeting was held in July 2023, in which the experts discussed and evaluated each item with the purpose of determining whether modifications to the wording were necessary. The consensus session began by welcoming the participants and informing them about how the session would be carried out. After asking the participants to score each item, a discussion was opened for each item whenever the median score was <10 points (indicating a lack of consensus that needed to be addressed) or if there were any observations, clarifications, or suggestions for improvement). The session lasted 40 minutes and the responses were analyzed. A summary of opinions and suggestions was made and sent back to the experts for the second round until agreement was reached on the items and appropriate language. The items in the final tool received a final expert consensus median score of 15 points.

2.6. Data collection

A pilot test of the questionnaire was carried out involving ten participants (6 registered female nurses and 4 registered male nurses, contacted individually, from 10 different provinces and aged between 23 and 63 years, with a mean of 43 years, and with different years of experience (between 1 and 39 years of experience with a mean of 19.4 years). The aim of the test was to assess the comprehension of the questionnaire, to detect possible typing errors or ambiguities in its drafting, and to ascertain the total time taken to complete the tool. The participants were selected for voluntary participation in the study through the General Council of Nursing of Spain, and adequately represented the profile of the target population. Following this, the evaluation of the questionnaire began.

For the general purpose, an online survey was created with Google Forms © software containing the scale items along with socio-demographic variables relevant to the study. Before accessing the questions in the questionnaire, all subjects participating in the study were required to read and sign the informed consent form, confirming that their participation was voluntary.

The dissemination of the study was conducted through various means and channels, including social media, emails to registered nursing professionals, specialized websites, and collaborations with professional nursing associations and organizations. Data collection took place between 01 August and October 31, 2023.

2.7. Variables

Socio-demographic and scale variables were included. Thus, the variables considered were sex (male, female, nonbinary, or rather not stated), age, marital status (single, married, cohabiting, not cohabiting, separated, divorced, or widowed), and current position held.

The data collection on the scale variables was done through the SUSESO/ISTAS21 Questionnaire.

Table 1
Results of the descriptive analysis.

Variables	Total sample (n = 2764)	ISTAS21 mean score (X/SD)	Hypothesis test*
Sex			
Male	341 (12.3%)	1.792 (SD = 0.562)	<i>P</i> = .50**
Female	2414 (87.3%)	1.779 (SD = 0.494)	
Nonbinary	1 (0.0%)	1.200 (SD = 0)	
Rather not say	9 (0.3%)	1.874 (SD = 0.590)	
Mean		1.78 (SD = 0.503)	
Age			
Mean	40.87 years	1.78 (SD = 0.5)	Tau-b*** = -0.12 (<i>P</i>.001)
Marital status			
Married	1186 (42.9%)	1.722 (SD = 0.494)	.001**
Divorced	117 (4.2%)	1.751 (SD = 0.500)	
With a partner (cohabiting)	748 (27.1%)	1.840 (SD = 0.517)	
With a partner (not cohabiting)	242 (8.8%)	1.828 (SD = 0.484)	
Separated	41 (1.5%)	1.824 (SD = 0.561)	
Single	422 (15.3%)	1.819 (SD = 0.492)	
Widowed	9 (0.3%)	1.814 (SD = 0.546)	
Mean		1.781 (SD = 0.503)	
Current position			
Auxiliary nurse	2287 (82.7%)	1.804 (SD = 0.493)	
Resident Nurse	37 (1.3%)	1.690 (SD = 0.551)	
Nurse in charge of a unit or service without recognized management position	139 (5%)	1.711 (SD = 0.477)	
Area or unit supervisor with management functions only	93 (3.4%)	1.465 (SD = 0.455)	
Unit supervisor with direct patient care as well as management activities	84 (3%)	1.590 (SD = 0.517)	
Specialist nurse	29 (1%)	1.671 (SD = 0.602)	
School nurse	11 (0.4%)	1.636 (SD = 0.598)	
Teaching and research	9 (0.3%)	1.837 (SD = 0.501)	
Mean		1.780 (SD = 0.502)	

Bold values indicate statistically significant results: *P* < .05.

SD = standard deviation, X = mean score.

* The Kolmogorov–Smirnov test showed a *P*-value of *P* < .005 indicating a non-normal distribution of the data.

** Kruskal–Wallis H.

*** Kendall Tau-b.

2.8. Data analysis

The descriptive analyses were performed using SPSS Statistics © v26 software,^[21] licensed by the University of Huelva. The Kolmogorov–Smirnov test showed a *P*-value of *P* < .005 indicating a non-normal distribution of the data, thus, nonparametric tests were considered, such as Kruskal Wallis' H test or Kendall Tau-b test.

To assess the reliability of the ISTAS_Nursing scale, Cronbach alpha coefficient and McDonald omega coefficient were calculated, the latter being recommended as a more robust indicator of scale reliability.^[22] In both cases, a reliability value > 0.7 was used as an indication of adequate scale consistency.^[23]

Next, the factor structure of the scale was studied by means of an exploratory factor analysis (EFA), using the principal components method. This method, suitable for data with non-normal distribution and for the search for stable factorial solutions, used a varimax rotation to correlate the factors.^[24]

Subsequently, a confirmatory factor analysis was carried out using AMOS© software.^[25] The goodness of fit of the confirmatory model was assessed using several criteria, such as the TLI, the normalized fit index, the CFI (values ≥ 0.90 indicate adequate fit), the standardized root mean square residual (values ≤ 0.08 indicate good fit), and the RMSEA (values ≤ 0.08 show good fit).^[26]

Finally, since no standard reference scale was used, neither ROC curve nor predictive validity were calculated for the assessment of criterion validity, although levels of psychosocial risk were identified based on the study of quartiles and percentiles of the sample.

2.9. Ethical aspects

This study was approved by the Huelva Provincial Research Ethics Committee, with code 1520-N-23. In addition, this

study adheres to the guidelines of the Declaration of Helsinki (Fortaleza, Brazil, 2013).^[27]

All participants (including the experts) gave their acceptance to participate in the study by clicking on the appropriate box in the online survey, after reading the pertinent information on the study and the informed consent document. Strict measures were taken to guarantee the privacy and confidentiality of the participants, in accordance with the Organic Law on Data Protection and Guarantee of Digital Rights (Law 3/2018),^[28] with storage of the information in a secure database and access limited to the research team only.

3. Results

3.1. Descriptive analysis

The sample consisted of 2764 subjects, all active nurses, over 18 years of age, and residing in Spain. Of the total sample, 87.3% were women, with a mean age of 40.82 years (SD = 10.677), and 12.3% were men, with a mean age of 41.21 years (SD = 10.979). The 42.9% of respondents were married and 27.1% were cohabiting, and 15.3% were single. Smaller percentages corresponded to divorced (4.2%), separated (1.5%), and widowed (0.3%) persons (Table 1).

The mean score of the participants for the ISTAS_Enfermería scale was 1.78 points (SD = 0.503). The study of the correlation between this score and age showed that the older the age of the sample, the lower the perceived levels of psychosocial risks measured with the ISTAS_Enfermería scale by 0.12 times. Looking at marital status, divorced (mean = 1.751, SD = 0.500) and separated (mean = 1.824, SD = 0.561) individuals showed higher scores compared to married individuals (mean = 1.722, SD = 0.494), suggesting that being married may be associated with lower psychosocial risk perception.

Similarly, single nurses (mean = 1.819, SD = 0.492) and those living with a partner (mean = 1.840, SD = 0.517) also showed higher scores, indicating significant differences by marital status ($P = .001$).

In addition, the analysis of job positions revealed a remarkable variability in perceived psychosocial risks. Area or unit supervisors with exclusively managerial functions reported the lowest scores (mean = 1.465, SD = 0.455), which could indicate a perception of lower risk, possibly due to greater job autonomy. In contrast, nurses engaged in teaching and research had the highest scores (mean = 1.837, SD = 0.501), reflecting higher perceived psychosocial demands (Table 1).

3.2. Psychometric study

Before performing the EFA, Bartlett test of sphericity and the Kaiser-Meyer-Olkin measure of sampling adequacy were applied, obtaining a value of 0.773 in the Kaiser-Meyer-Olkin measure and a significance of $P < .001$. This confirmed the suitability of the data for the factor analysis. The EFA (through principal axial factorization and varimax rotation) granted a factorial solution of 5 dimensions and 15 items (Table 1). Items 1, 5, 6, 7, and 12 of the original SUSESO/ISTAS21 scale have been removed (Candia et al^[19]) for factor loadings below 0.4, a criterion supported by previous studies suggesting this threshold for measuring behaviors.^[29] The final solution is a 5-factor structure, with 15 items, explaining 63.6% of the variance. Specifically, Factor 1 explains 18.025% of the variance; Factor 2, 12.244%; Factor 3, 12.069%; Factor 4, 10.895%; and Factor 5, 10.405%, with a cumulative variance percentage of 63.638% (Table 2).

Likewise, each of the factors that conform the scale were named as follows:

- Factor 1 – Support at work:** This factor refers to the support and cooperation a person receives in their work environment. It includes direct support from superiors, mutual help between colleagues, and the ability to resolve conflicts by line managers. It also refers to the recognition given to employees for their work.
- Factor 2 – Job satisfaction:** This factor describes the level of satisfaction and fulfillment that a person experiences in their work. It includes the opportunity to learn and develop professionally, the perceived importance of the tasks assigned, the sense of belonging to the company or institution, and the clear understanding of work responsibilities.

- Factor 3 – Emotional well-being at work:** This factor refers to emotional balance and stress management in the work environment. It includes the ability to make difficult decisions, the level of emotional exhaustion experienced at work, and the need to manage emotions in the work environment.
- Factor 4 – Job insecurity:** This factor describes the concern and uncertainty that a person may experience with regard to their work stability. It includes fear of dismissal or nonrenewal of contract and concern about unwanted changes in job responsibilities.
- Factor 5 – Double presence:** This factor refers to the balance between work demands and family and domestic responsibilities. It includes the tendency to think about family matters while at work and the occasional need to be present both at work and at home to attend to urgent family situations.

The scale reliability yielded a Cronbach α value of 0.764, and a McDonald omega value of 0.741. Likewise, the Cronbach α value obtained for each factor was: 0.80 for Support at work, 0.7 for Job satisfaction, 0.76 for Emotional well-being at work, 0.72 for Job insecurity, and 0.70 for Double presence.

Then, confirmatory factor analyses for the construct validity study yielded a CFI of 0.933, a TLI of 0.912, a normalized fit index of 0.926, a RMSEA of 0.057 and a standardized root mean square residual of 0.068 (Fig. 1).

The study of the mean score in the scales showed 3 levels of psychosocial risk for nurses in Spain (Low level: 0 to 1.46; Intermediate level: 1.47 to 2; High level: above 2) that were identified and depicted in a box-and-whisker plot. (Fig. 2). Significant differences between each pair of level were identified ($P < .05$) and checked with the Mann-Whitney U test. In the comparisons made between the 3 levels, the following was obtained: the comparison between the low level and the intermediate level produced a Mann-Whitney U value of 0.000, with a P value $< .001$; the comparison between the intermediate level and the high level showed a U value of 0.000 and $P < .001$; and, finally, the comparison between the low level and the high level also gave a U value of 0.000 with $P < .001$. These results indicate statistically significant differences across the levels.

4. Discussion

Considering the increasing workload and emotional pressures faced by nurses in Spain, the assessment and reduction of

Table 2
Scale items and factor structure.

Factor	% of variance	% accumulated	ITEMS	F1 – Support at work	F2 – Job satisfaction	F3 – Emotional well-being at work	F4 – Job insecurity	F5 – Double presence
1	18.025	18.025	ISTAS_13	.876				
			ISTAS_14	.450				
			ISTAS_15	.879				
			ISTAS_18	.800				
2	12.244	30.269	ISTAS_8		.703			
			ISTAS_9		.834			
			ISTAS_10		.501			
			ISTAS_11		.473			
3	12.069	42.338	ISTAS_2			.703		
			ISTAS_3			.783		
			ISTAS_4			.768		
4	10.895	53.233	ISTAS_16				.895	
			ISTAS_17				.821	
5	10.405	63.638	ISTAS_19					.872
			ISTAS_20					.865

Bold values indicate statistically significant results: $P < .05$.

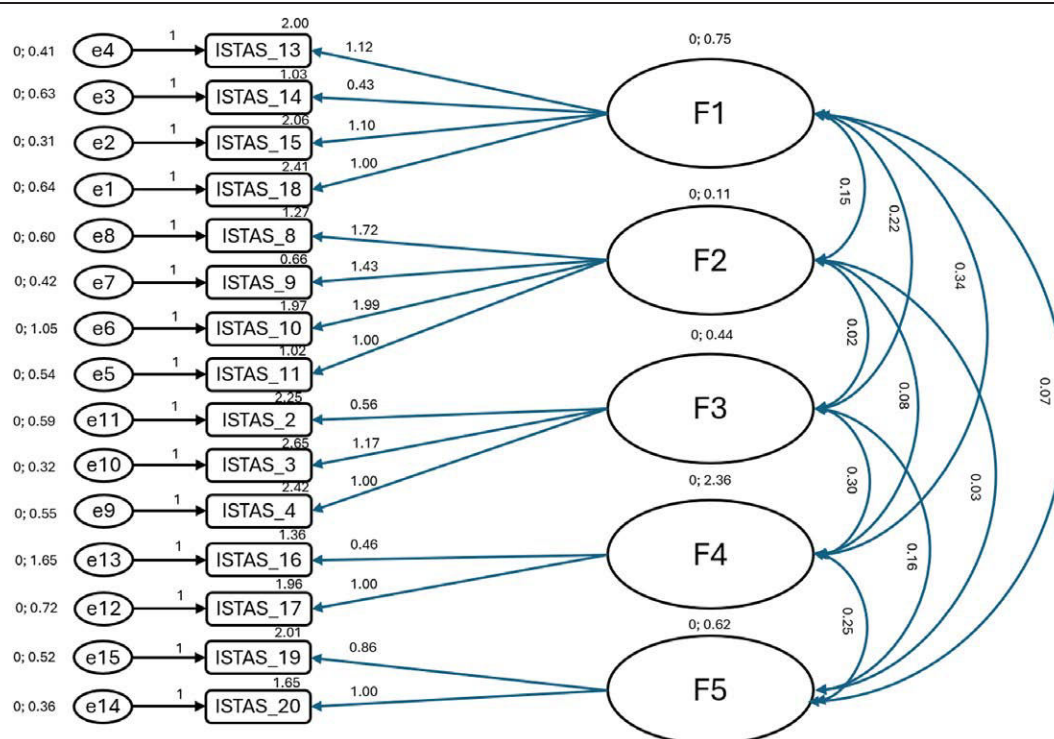


Figure 1. Factor structure of the scale.

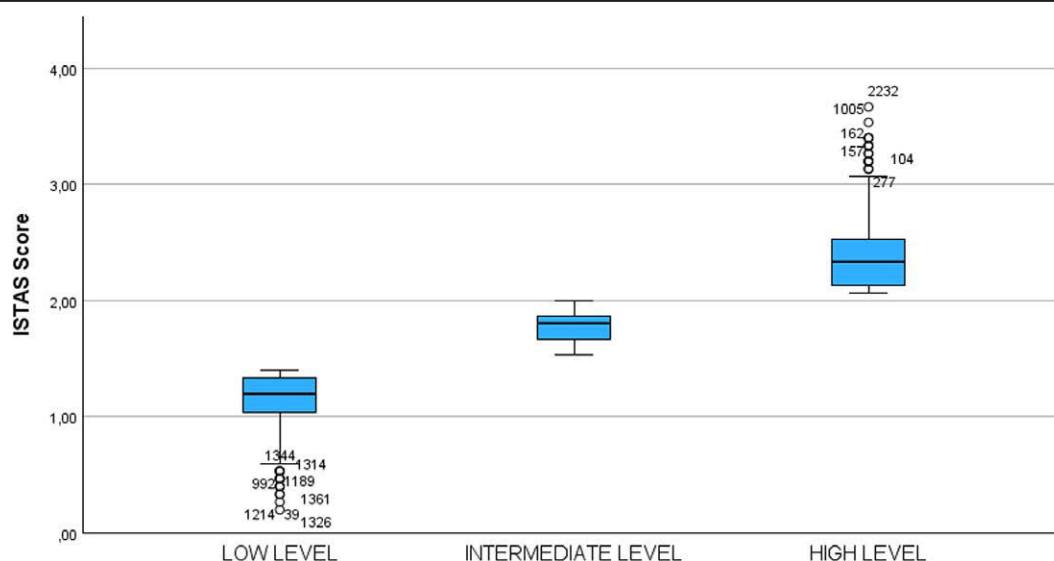


Figure 2. Psychosocial risk levels in nurses in Spain.

psychosocial risks in their daily work is essential. In this context, the main objective of this study was the adaptation and initial psychometric validation of the SUSESO/ISTAS21 questionnaire for nurses in Spain. The study sought to create a reliable tool to help improve both the health of nurses and the quality of care they provide to their patients. The results obtained indicate that the adapted SUSESO/ISTAS21 questionnaire presents adequate validity and reliability indices.

This study has significant implications for clinical practice, teaching, and research. In the clinical setting, the adapted SUSESO/ISTAS21 questionnaire allows the identification of psychosocial risk factors in nurses in order to develop preventive and supportive interventions. In the field of education, this tool can be integrated into training programs to increase the

awareness of future professionals about psychosocial risks and how to manage them. In terms of research, this validated questionnaire facilitates longitudinal and comparative studies on the psychosocial well-being of nurses. Overall, these findings confirm the validity of the ISTAS_Enfermería as a tool for detecting and assessing psychosocial risks in the nursing environment in Spain.

Recent studies show that the sustained stress to which nurses are exposed, especially in high-pressure clinical settings, can trigger significant symptoms of post-traumatic stress disorder. Implementing structured support programmes and strategies to improve the mental health of nursing staff becomes essential to ensure both their well-being and their ability to provide quality care. It has been shown that interventions based on emotional

de-escalation and peer support can be particularly effective in reducing work-related stress and strengthening resilience.^[30]

The bivariate analyses performed show that there were no significant differences in mean ISTAS_Enfermería scores by sex, with similar scores between female and male nurses ($P = .50$). This finding is consistent with previous studies showing no significant differences in work stress scores between female and male nurses, and supports the idea that sex differences relating to stress may not be as pronounced in nursing as in other work contexts, even considering sex differences within the profession.^[31] It is worth noting that although this study did not find significant differences between sexes, recent studies such as that by Costa (2021) highlight that, in high-stress situations, these differences may become more noticeable. This could indicate that in situations of overload or high-stress events, female nurses may experience higher levels of stress than their male counterparts, due to a combination of biological and social factors. Exploring these differences in future qualitative and quantitative studies would help to better understand the impact of sex on the perception of psychosocial risk in high-demand settings.^[32]

Conversely, a significant negative correlation was observed between age and ISTAS21 score ($\text{Tau-}b^b = -0.12$, $P = .001$), suggesting that the older the nurse, the lower the perception of psychosocial risks. This trend has been observed in other studies, which argue that younger nurses tend to experience higher levels of stress and psychosocial risk due to their reduced experience in managing work demands. This, in turn, indicates that youth and lack of experience may be significant factors contributing to the perception of psychosocial risk in nursing.^[33] In this regard, the implementation of mentoring programmes in which more experienced nurses can guide younger nurses is essential to strengthen confidence and resilience among young nurses. Hoover et al. (2020) note that these programmes not only improve resilience and confidence in clinical skills, but also create a supportive environment, which can mitigate the perception of stress and facilitate adaptation to the work environment in the early years of the profession.^[34]

Effective management of work-related stress benefits greatly from approaches that promote autonomy and professional development. Work environments where nurses feel they have control over their tasks and opportunities for growth can mitigate the negative effects of stress. Tools such as the ISTAS_Enfermería should not only measure psychosocial risk, but also identify key areas for intervention. Incorporating ongoing education strategies and personalized stress management training can be crucial, particularly in high-demand clinical settings, to maximize the positive impact on staff well-being.^[35]

Furthermore, regarding the marital status category, the present study showed significant differences ($P = .001$), with married nurses having lower scores (1.722) compared to other marital statuses, such as those in a non-cohabiting relationship (1.828) and single nurses (1.819). This may be related to the fact that married people often report higher levels of social support, which may act as a protective factor against work-related stress.^[36]

As regards the current position, area or unit supervisors with purely managerial functions had the lowest scores (1.465), while teaching and research nurses had the highest scores (1.837). This may be due to a greater perception of control and autonomy in their roles, factors that are associated with lower levels of stress and psychosocial risk.^[37]

With respect to the reliability results obtained by means of Cronbach alpha, in the sample of the present study, they showed an adequate internal consistency, with an overall value of 0.764, slightly higher than the value reported in the Chilean version, which was 0.758 (95% CI: 0.719–0.794).^[38] This finding suggests that the ISTAS_Enfermería may be offering greater overall reliability in the specific context of nurses in Spain.

Regarding the factor structure of the ISTAS_Enfermería, all the dimensions assessed showed better reliability scores than those reported in the Chilean version of the SUSESO/ISTAS21.

In particular, the dimensions “Support at work” ($\alpha = 0.80$), “Job satisfaction” ($\alpha = 0.70$), “Emotional well-being at work” ($\alpha = 0.76$), “Job insecurity” ($\alpha = 0.72$) and “Double presence” ($\alpha = 0.70$) showed higher alpha coefficients compared to their Chilean equivalents, suggesting a higher reliability in the Spanish sample.^[38]

These differences in factor structure suggest that the perception of psychosocial risks varies depending on the cultural context. While both questionnaires maintain a five-factor structure, the ISTAS_Enfermería has significantly reconfigured the items and factors in response to the specific context of nurses in Spain. The present study identified 5 work factors with structural differences with respect to the Chilean version. The first factor, “Support at work,” does not have an exact equivalent in the Chilean questionnaire, but is similar to “Social support and leadership quality.” The second factor, “Job satisfaction,” did not have a direct correspondence either, yet similar aspects are found in the categories “Active labor and skills development” and “Compensation.” The third factor, “Emotional well-being at work,” is not represented in the Chilean version. The fourth factor, “Job insecurity,” also differs, although some aspects are related to the “Compensation” factor. The fifth factor, “Double presence,” is similar in both versions, reflecting the reconciliation of work and family responsibilities.

In the Chilean version, the factor “Psychological demands” was eliminated due to low factor loadings. The factor “Active labor and skills development” was redistributed in the ISTAS_Enfermería. The factors “Social support and leadership quality” and “Compensation” showed differences in the structure of the ISTAS_Enfermería.

These differences in the dimensional structure and item distribution between the ISTAS_Enfermería and the Chilean version reflect variations in the perception and relevance of psychosocial risk factors in different cultural and occupational contexts.^[39] While both versions maintain a five-factor structure, the ISTAS_Enfermería has resulted in a significant reconfiguration of items and factors, underlining the importance of cultural and context-specific adaptation in psychosocial risk assessment.

Additionally, it is relevant to compare the present results with those of studies such as the one by,^[13] who also validated the SUSESO/ISTAS21 in a sample of workers in Spain. In the said study, the “Psychological demands” dimension obtained a Cronbach alpha of 0.79, while in the present study this same dimension had an alpha of 0.82. The “Job insecurity” dimension in Moncada study obtained an alpha of 0.70, while in this study an alpha of 0.72 was obtained. Finally, the “Social support” dimension had an alpha of 0.85 in the Moncada study,^[13] compared to 0.84 in the present study. These similarities and slight improvements suggest good internal consistency and robust reliability in different work contexts.

That said, this study also has some limitations that should be considered. Firstly, the criterion validity of the ISTAS_Enfermería using another gold standard scale or ROC curve was not included, so there are no data on predictive validity. Also, the sample used was non-probabilistic and of convenience, which could affect the generalizability of the results to the entire population of nurses in Spain. Similarly, the dissemination methods used were broad and based on social networks, specialized nursing websites in Spain, and e-mails to registered nurses through official media, so it was not possible to know the response rate or the total reach of this dissemination. Also, the use of online surveys may have left out some nurses with little access to the internet or less proficiency with technology. Also, the majority of the study sample was made up of women. In this regard, previous studies have shown that women may perceive and experience work-related stress differently from men, suggesting the need to further explore these differences between the sexes in future studies.^[40] Although the sample size is large and the distribution by sex is similar to that of the Spanish nursing population, the need for future research to consider these aspects

should be borne in mind. In addition, recent studies indicate that nurses' emotional exhaustion is influenced by specific work environment factors, such as autonomy, available resources, and team support, all of which significantly affect their engagement and mental health. High-pressure units, such as the emergency department, show higher levels of burnout, which may affect quality of care. These findings highlight the importance of future longitudinal research examining individual and systemic factors that impact nurses' well-being in diverse care settings.^[41]

Overall, these findings confirm the validity of the ISTAS_Enfermería as a tool for detecting and assessing psychosocial risks in the nursing environment in Spain. This tool may be useful not only for identifying risk factors, but also for evaluating the effectiveness of interventions designed to reduce work-related stress and improve nurses' well-being in different contexts. However, it would be desirable for future research to further explore these findings through longitudinal studies and in different care settings, which would contribute to the development of occupational health policies tailored to the specific needs of nurses in Spain.

5. Conclusion

The ISTAS_Enfermería scale has proven to be reliable and valid for the assessment of psychosocial risks in nurses in Spain. The scale contains 15 items organized into 5 factors: Support at Work, Job Satisfaction, Emotional Well-being at Work, Job Insecurity, and Double Presence, which explain 63.6% of the variance. These items cover key factors of the perception of psychosocial risks in the work environment.

To develop the adaptation of the scale, a thorough cultural adaptation and psychometric validation procedure was carried out. A panel of experts in areas such as nursing, psychology, and management participated in the review and adaptation process using the Delphi technique, evaluating each item in terms of clarity, relevance, and cultural appropriateness. Subsequently, a pilot test was conducted to assess the understanding and usability of the questionnaire in the target population. The dissemination of the questionnaire was done through digital media, including social media, e-mails to nursing professionals, and collaboration with specialized organizations, which allowed for data collection between August and October 2023.

The psychometric analysis showed robust results: the overall internal consistency measured by Cronbach alpha was 0.764, while exploratory and confirmatory factor analyses confirmed the 5-factor structure with adequate fit indices (CFI = 0.933; TLI = 0.912; RMSEA = 0.057). These findings suggest that the scale is valid and reliable for assessing psychosocial risks in nursing in the Spanish context.

In the clinical setting, this will allow the development of preventive interventions and specific support programmes to improve nurses' mental health and well-being at work. At the educational level, integrating this tool into nursing education can help future professionals to better manage work-related stress from the beginning of their careers. In the field of research, the validation of this scale facilitates long-term and comparative studies on psychosocial well-being in different contexts. In addition, the tool could be adapted and validated for other health professions, thus benefiting more workers. Future research should consider criterion validation and explore sex differences with respect to perceptions of work-related stress in order to design more inclusive and effective interventions.

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Publicación 3:

Título

Psychosocial risks in Spanish nursing: relationship with stability and working conditions.

Referencia

Narbona-Gálvez Á, Gómez-Salgado J, Ruiz-Frutos C, Ayuso-Murillo D, Fontán-Vinagre G, Fagundo-Rivera J, Palomo-Gómez R, Ruger-Navarrete A and Allande-Cussó R. Psychosocial Risks in Spanish Nursing: Relationship With Stability and Working Conditions. *Int. J. Public Health*. 2025. 70:1608330. doi: 10.3389/ijph.2025.1608330

Datos de la revista

Título: International Journal of Public Health

Título abreviado: Int. J. Public Health

Idioma: Inglés

Factor de Impacto (2024): 2.4

Ranking (JCR): SCIE PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH

Q2 (157/419)

Copia del artículo



Psychosocial Risks in Spanish Nursing: Relationship With Stability and Working Conditions

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Objectives: Psychosocial risks significantly affect the physical and mental health of workers, especially in the healthcare sector. This study assesses psychosocial risks in a sample of Spanish nurses by applying the ISTAS_ENFERMERÍA questionnaire.

Methods: A descriptive cross-sectional study was conducted with 2,765 nurses working in Spain. Sociodemographic, occupational, and psychosocial variables were assessed using the ISTAS_ENFERMERÍA questionnaire. Data were collected through a digital form distributed through social networks and professional channels.

Results: Significant differences were found in ISTAS_ENFERMERÍA scores according to socio-demographic and employment variables. Younger age and job instability were associated with higher levels of stress, while stable contracts were correlated with lower perceived risks.

Conclusion: The study highlights the relationship between psychosocial risks and socio-demographic and occupational factors. Youth and job instability are linked to higher levels of stress, while job stability reduces these risks. Interventions to improve working conditions and support younger professionals are recommended.

Keywords: psychosocial risk factors, nurses, occupational stress, occupational health, working conditions

OPEN ACCESS

Edited by:

Paulo Sousa,
New University of Lisbon, Portugal

Reviewed by:

Ana Gama,
New University of Lisbon, Portugal
Florentino Serranheira,
New University of Lisbon, Portugal

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Received: 10 January 2025

Accepted: 06 May 2025

Published: 20 May 2025

Citation:

Narbona-Gálvez Á, Gómez-Salgado J, Ruiz-Frutos C, Ayuso-Murillo D, Fontán-Vinagre G, Fagundo-Rivera J, Palomo-Gómez R, Ruger-Navarrete A and Allande-Cussó R (2025) Psychosocial Risks in Spanish Nursing: Relationship With Stability and Working Conditions. *Int. J. Public Health* 70:1608330. doi: 10.3389/ijph.2025.1608330

INTRODUCTION

Occupational safety and health (OSH) is a core domain in occupational risk management, which focuses on the prevention, identification, assessment, and control of risks that can arise both inside and outside the workplace [1]. It has become increasingly important due to the worrying rise in the number of occupational accidents and diseases, with 2.9 million deaths reported in 2019, of which nearly an 11% were caused by accidents and the rest by work-related diseases [2].

At the global level, occupational risks pose a major health challenge, with some studies estimating that between 5% and 7% of deaths worldwide are linked to risks in the work environment [3]. In

example, occupational diseases such as silicosis and asbestosis remain common in developing countries, which emphasises the urgent need to improve regulation and labour practices [4].

In this context, psychosocial risks have gained importance and are described as those circumstances in the work environment that can negatively impact the physical and mental health or general wellbeing of workers. These risks include factors such as stress, the type of activities performed, the dynamics between colleagues and superiors, and the organisational environment in general, all of which can affect the ability of employees to adequately cope with the demands of the job [5].

In the field of health professionals, workers face numerous occupational risks that affect their physical and mental wellbeing, such as musculoskeletal injuries, exposure to hazardous substances, and violence at work, which are in turn compounded by stress and burnout [6]. The World Health Organization (WHO) estimates that globally, around 59 million health professionals suffer from work-related accidents and diseases, accounting for approximately 4% of the global Gross Domestic Product (GDP) [7].

In nursing, occupational risks are diverse and impact both the physical and mental health of professionals, ultimately compromising the quality of patient care [8]. Among these risks, psychosocial factors stand out, including high work demands, an intense work pace, and the overlap of professional and family responsibilities—a situation known as double presence. Additionally, the emotional demands of constant interaction with patients in critical conditions further contribute to these risks [9].

These factors intensify psychological exhaustion, increasing the likelihood of stress and burnout. As a result, both the wellbeing of healthcare staff and the standard of care they provide are negatively affected [10]. Recent studies highlight the prevalence and impact of psychosocial risks among nurses, particularly during health emergencies like the COVID-19 pandemic around the world. Nurses face moderate to high risks in multiple dimensions, including job stress, poor working conditions, and excessive workload [11, 12]. These risks can lead to mental health issues such as depression, burnout syndrome, and stress-related disorders [13]. The COVID-19 pandemic has exacerbated these risks, with nurses reporting high emotional work and workload [14]. However, adequate resources, measures, and information can serve as protective factors against psychosocial risks [15]. The economic impact of mental health issues among nurses in the EU is estimated at €240 billion annually [13].

In this sense, several scales and questionnaires have been developed to assess and measure psychosocial risks, such as the Job Content Questionnaire (JCQ) [16], the Effort-Reward Imbalance Questionnaire (ERI) [17], and the Copenhagen Psychosocial Questionnaire (COPSOQ) [18]. These tools are renowned for their psychometric validity and their ability to provide valuable information on psychosocial risks in different work settings [19]. Among them, the SUSESO/ISTAS21 questionnaire, based on the second version of COPSOQ, stands out as a robust and effective tool for assessing psychosocial risks at work. This questionnaire covers

a wide range of psychosocial factors, including work demands, their influence, development at work, social relationships, and emotional content [18].

The adaptation and psychometric validation of the SUSESO/ISTAS21 questionnaire in nurses in Spain, known as ISTAS_ENFERMERÍA, has resulted in a reliable and specific tool to assess psychosocial risks in this population group [20]. The results of its adaptation indicate that the ISTAS_ENFERMERÍA has adequate validity and reliability indices, which allows for a more accurate identification of the psychosocial risk factors affecting nurses. This early identification is also crucial to develop preventive and supportive interventions which will contribute to improving nurses' wellbeing and the quality of care they provide [19].

In this context, the present study aims to assess psychosocial risks in a sample of nurses in Spain.

METHODS

Design

Descriptive cross-sectional study based on questionnaires.

Population and Sample

The study population consisted of 325,018 nurses registered in Spain (2020 data). The scope of the study was nationwide and included nurses who met the following inclusion criteria: i) nurses who provide nursing care specific to their profession; ii) nurses residing in Spain; and iii) active nurses. Those who did not meet the inclusion criteria were excluded from the study, as well as the following: i) nurses with a recognised qualification from another country who are not yet practising in Spain; ii) professionals who do not perform nursing care functions; and iii) nurses working outside Spain.

Data were collected from nurses who worked in both Primary Care and Specialised Care for the Spanish National Health Service (NHS) or in private entities (such as care homes for the aged and private clinics, among others).

The minimum required sample was calculated to be 384 nurses, using a 5% margin of error, 95% confidence, and 50% heterogeneity. However, the total sample finally obtained was 2,765 nurses, far exceeding the minimum sample size calculated, which increased the statistical power of the study.

The sample was selected by non-probabilistic snowball sampling, starting with nurses who agreed to participate and, through dissemination, achieving the inclusion of all said participants. Participation was completely voluntary, and confidentiality of the data collected was guaranteed. All participants accepted informed consent before completing the questionnaire.

Variables

This study examines socio-demographic, occupational, and psychosocial variables. To assess the socio-demographic profile, questions on sex, age, marital status, educational level received and completed, and province of employment were included.

As for occupational variables, firstly, aspects such as sick leave (type and frequency); number of services assigned to the professional; entity and current position held; time at current unit; employment relationship; type of contract; working hours (and its specific characteristics such as rotations, their frequency, and mode of notification); level of stress and anxiety caused by such rotation; level of job competence and how such competence affects job security; whether there are changes in the working day; whether the professional also works in another place; previous work experiences (rejection or acceptance of working contracts owing to the level of expertise); effects of lack of experience on wellbeing (sleep disturbance, anxiety, or insecurity).

The level of psychosocial risk was assessed using the ISTAS_Enfermería scale. This tool measures psychosocial factors in nursing work performance, such as work stress and quality of life at work. The validation of the tool in the nursing population obtained a Cronbach's alpha value of 0.7. The scale presents a factorial structure of 5 dimensions with 15 items, which explain 63.6% of the variance, and it showed an optimal fit in the parameters calculated by confirmatory factor analysis (values higher than 0.90 for the TLI, NFI, and CFI, lower than 0.08 for the SRMR, and lower than 0.08 for the RMSEA [20]).

The scale includes 15 items distributed in five dimensions, whose scores vary depending on the dimension: in "Support at work" and "Job satisfaction," items are rated from 0 (Always) to 4 (Never), while in "Wellbeing at work," "Job insecurity" and "Double presence," items are rated from 4 (Always) to 0 (Never). The total score is obtained by adding the values of all items, ranging from 0 (most favourable) to 60 (least favourable), where lower scores indicate better psychosocial conditions and higher scores indicate greater psychosocial risk.

Procedure

Data collection was conducted over a 3-month period, between 1 August and 31 October 2023, based on a digital questionnaire created using Google Forms[®] with questions related to the study variables and distributed through social networks and specific nursing professional groups. All participants were required to provide informed consent and explicitly confirm their professional role as nurses before being able to access the questionnaire.

The dissemination of the questionnaire was carried out by the research team, ensuring its distribution in specific nursing communities. Additionally, the Spanish General Council of Nursing supported the dissemination of the questionnaire on their official social media channels and among those registered nurses in Spain who wished to be contacted by email for research purposes.

Data Analysis

Univariate and bivariate descriptive analyses were performed using SPSS Statistics[®] v26 software [21]. To assess the normality of the data, the Kolmogorov-Smirnov test was applied, which yielded a value of $p < 0.05$, indicating non-normality. Consequently, non-parametric tests, i.e., the Mann-Whitney U test and the Kruskal-Wallis H test, were used to

compare groups, and Kendall's Tau-B coefficient was applied to analyse correlations between variables.

To explore the relationship between the level of perceived psychosocial risk and the rest of the variables, a categorical regression analysis (CATREG) adapted to the qualitative nature of the variables was used [22]. The categorical regression analysis was performed to examine the association between psychosocial risk scores (dependent variable) and independent variables such as age, gender, marital status, educational level, and workload. The regression model included adjustments for potential confounders, and results were reported as regression coefficients (β) with 95% confidence intervals (ci). Statistical significance was set at $p < 0.05$. This analysis included elements of classical regression, such as the coefficient of determination (R^2), the analysis of variance in regression, and the significance of the model parameters. The variables included in the regression model were those that showed significant differences in the bivariate analysis. The optimal scaling option in SPSS[®] [23] was used to guarantee an adequate adaptation of the variables to the model.

Ethical Considerations

This study was approved by the Provincial Research Ethics Committee of Huelva, Spain, with code 1520-N-23. It also complies with the guidelines established in the Declaration of Helsinki [24] and complies with the provisions of Regulation (EU) 2016/679 of the European Parliament and of the Council on the protection of individuals with regard to the processing of personal data and the free movement of such data [25], as well as with Organic Law 3/2018, of 5 December, on the Protection of Personal Data and guarantee of digital rights [26].

Data collection was carried out over a period of 3 months (01 Aug - 31 Oct, 2023), using a digital questionnaire created with Google Forms[®] and distributed through social networks and specific professional nursing groups, with the support of the General Council of Nursing of Spain for dissemination through its official channels and by email to registered nurses interested in participating in research. This questionnaire included questions related to the study variables, and all participants were required to provide informed consent, explicitly confirm their professional role as nurses, and tick the appropriate box after reading the information provided about the study and the informed consent document. Rigorous measures were implemented to ensure the privacy and confidentiality of the participants, in accordance with the provisions of the Organic Law on Data Protection and Guarantee of Digital Rights [26], with data being stored in a protected database accessible only to the research team.

RESULTS

Descriptive Analysis

The sample consisted of 2,765 nurses from all over Spain, with a mean age of 40.87 years. Of the total sample, 87.3% were women, while only 12.3% were men and a small percentage identified themselves as non-binary or preferred not to state their sex. The

TABLE 1 | Socio-demographic variables (Data from the ISTAS_Enfermería Study, Spain, 2023).

Variables	Total sample (n = 2,765)	ISTAS21 mean score (δ /SD)	Contrast of hypotheses
Sex			
Male	341 (12.3%)	1.792 (SD = 0.562)	P = 0.503 ^a
Female	2,414 (87.3%)	1.779 (SD = 0.494)	
Non-binary	1 (0.0%)	1.200 (SD = 0)	
Rather not say	9 (0.3%)	1.874 (SD = 0.590)	
Age			
Mean	40.87 years	1.78 (SD = 0.5)	Tau b ^b = -0.12 (p 0.001)
Marital status			
Married	1,186 (42.9%)	1.722 (SD = 0.494)	
Divorced	117 (4.2%)	1.751 (SD = 0.500)	
With a partner (cohabiting)	748 (27.1%)	1.840 (SD = 0.517)	0.001 ^a
With a partner (non-cohabiting)	242 (8.8%)	1.828 (SD = 0.484)	
Separated	41 (1.5%)	1.824 (SD = 0.561)	
Single	422 (15.3%)	1.819 (SD = 0.492)	
Widowed	9 (0.3%)	1.814 (SD = 0.546)	0.007 ^a
Educational level			
Degree	588 (21.3%)	1.809 (SD = 0.480)	
Former Higher degree	42 (1.5%)	1.820 (SD = 0.550)	
Former Lower degree	704 (25.5%)	1.722 (SD = 0.464)	
Doctorate	59 (2.1%)	1.714 (SD = 0.641)	
Specialty	397 (14.4%)	1.751 (SD = 0.532)	
Master's degree	664 (24%)	1.831 (SD = 0.522)	
Expert	298 (10.8%)	1.803 (SD = 0.504)	
Vocational training	13 (0.5%)	1.764 (SD = 0.493)	

δ Mean score.

SD, standard deviation.

^aKruskal Wallis H test.

^bKendall's Tau-B.

mean ISTAS21 score was 1.78 (SD = 0.503), with no significant differences between sexes ($p = 0.503$). **Tables 1, 2** describe the main results of the descriptive bivariate analysis for socio-demographic and occupational variables.

The results show significant differences for the marital status, educational level, and province of work variables concerning the ISTAS_Enfermería scores and the different categories of the variable. Married people and those with a doctorate or degree had lower scores (indicating better psychosocial conditions) than those with a master's degree.

Age reveals a negative and significant relationship with the scores (Tau b = -0.12, $P < 0.001$), suggesting a lower perception of risk with increasing age. On the other hand, no significant differences were found based on sex ($P = 0.503$), although there was a greater proportion of women in the sample (87.3%).

The mean ISTAS_Enfermería score showed significant differences according to employment relationship, number of services, work area, current position, time at current unit, and sick leave ($p = 0.001$). Higher values were found in respondents who were working without a contract (mean = 2.164), were unemployed (mean = 2.143), or had had two or more sick leaves in the previous year (mean = 2.027), while the lowest scores were associated with civil servants/statutory employees (mean = 1.640), managers (mean = 1.155), and those who had been in the same unit for more than 10 years (mean = 1.662). There were no significant differences according to the type of contract or the reason for sick leave.

Multivariate Regression Analysis

A categorical regression analysis was carried out using the ISTAS_Enfermería scale total score as the dependent variable and the following variables as predictors: age; marital status; educational level; employment relationship; number of services; current position; time at current unit; and sick leave. The model showed a coefficient of determination of $R^2 = 0.095$ (adjusted $R^2 = 0.089$) and an overall significance of $p < 0.001$, indicating that the model was of low but significant explanatory power.

The variables that contributed significantly to the model were: age; education completed; employment relationship; number of services; time at current unit; and sick leave (**Table 3**). In addition, the results indicate that for each additional year, professionals perceive 0.12 times lower levels of psychosocial risk ($\beta = -0.124$), suggesting that younger nurses are more susceptible to stress. Meanwhile, professionals without a contract experience 0.063 times higher levels of psychosocial risk than civil servants ($\beta = 0.063$), while those who are assigned to more than ten rotating services perceive 0.095 times higher levels of psychosocial risk than those with less rotation ($\beta = -0.095$). In the same way, nurses engaged in nursing care reported risk levels 0.065 times higher than supervisors and managers ($\beta = -0.065$), who face less direct exposure to stressors. Finally, professionals with two or more sick leaves in the previous year reported 0.16 times higher levels of psychosocial risk than those with no sick leaves ($\beta = -0.162$).

TABLE 2 | Occupational variables (Data from the ISTAS_Enfermería Study, Spain, 2023).

Variables	Total sample (n = 2,765)	ISTAS21 mean score (δ /SD)	Contrast of hypotheses
Employment relationship			
I am a civil servant, statutory employee	911 (32.9%)	1.640 (SD = 0.466)	0.001^a
I am an interim	713 (25.8%)	1.859 (SD = 0.496)	
I am a permanent employee (I have a permanent contract, ...)	466 (16.9%)	1.740 (SD = 0.486)	
I have a permanent discontinuous contract	43 (1.6%)	1.965 (SD = 0.605)	
I am a temporary employee with a training contract (temporary contract under training)	41 (1.5%)	1.660 (SD = 0.576)	
I am temporary employee (contract for limited work and services, circumstances of production, ...)	561 (20.3%)	1.920 (SD = 0.499)	
Without a contract	30 (1.1%)	2.164 (SD = 0.512)	
Type of contract			
Full-time	2,403 (86.9%)	1.777 (SD = 0.508)	0.614 ^a
Full-time with reduced working hours (maternity/paternity, studies, disability)	193 (7.0%)	1.806 (SD = 0.454)	
Part-time	113 (4.1%)	1.788 (SD = 0.500)	
Part-time with reduced working hours (maternity/paternity, studies, disability)	56 (2.0%)	1.839 (SD = 0.429)	
Number of services			
Less than 5 different services	564 (23.7%)	1.672 (SD = 0.489)	0.001^a
Between 5 and 10 different services	1,025 (37.1%)	1.750 (SD = 0.495)	
More than 10 different services	1,084 (39.2%)	1.876 (SD = 0.502)	
Work area			
Urgent and emergency care	21 (0.8%)	1.920 (SD = 0.437)	0.001^a
Management	3 (0.1%)	1.155 (SD = 0.443)	
General management, governing, and administration	7 (0.3%)	1.714 (SD = 0.707)	
Educational field	18 (0.7%)	1.844 (SD = 0.698)	
Primary Care	570 (20.8%)	1.729 (SD = 0.534)	
Teaching and research	12 (0.4%)	1.522 (SD = 0.620)	
Public hospital	1710 (62.3%)	1.785 (SD = 0.481)	
Private hospital	199 (7.3%)	1.764 (SD = 0.497)	
Various entities	135 (4.9%)	1.923 (SD = 0.530)	
Subsidised hospital	20 (0.7%)	1.730 (SD = 0.397)	
Other entities not related to nursing	5 (0.2%)	2.053 (SD = 0.536)	
Public bodies	8 (0.3%)	1.675 (SD = 0.560)	
Not currently working	36 (1.3%)	2.085 (SD = 0.557)	
Current position			
Assistant Nurse	2,287 (82.7%)	1.804 (SD = 0.493)	0.001^a
Resident Nurse	37 (1.3%)	1.690 (SD = 0.551)	
Nurse in charge of unit or service without recognised management position	139 (5%)	1.711 (SD = 0.477)	
Unit or area supervisor with management functions only	93 (3.4%)	1.465 (SD = 0.455)	
Unit supervisor with direct patient care as well as management functions	84 (3%)	1.590 (SD = 0.517)	
Specialist nurse	29 (1%)	1.671 (SD = 0.602)	
School nurse	11 (0.4%)	1.636 (SD = 0.598)	
Teaching and research	9 (0.3%)	1.837 (SD = 0.501)	
Time at current unit			
Unemployed	32 (1.2%)	2.143 (SD = 0.498)	0.001^a
Less than 30 days	193 (7.0%)	1.969 (SD = 0.501)	
1–6 months inclusive	446 (16.1%)	1.848 (SD = 0.528)	
6 months to 2 years inclusive	570 (20.6%)	1.803 (SD = 0.505)	
Between 2 and 5 years inclusive	615 (22.2%)	1.765 (SD = 0.496)	
Between 5 and up to 10 years inclusive	337 (12.2%)	1.744 (SD = 0.486)	
More than 10 years	572 (20.7%)	1.662 (SD = 0.461)	
Sick leave			
I have not had any sick leave in the last year	1,444 (52.3%)	1.689 (SD = 0.494)	0.001^a
I have had ONE sick leave in the last year	1,028 (37.2%)	1.842 (SD = 0.484)	
I have had TWO OR MORE sick leaves in the last year	280 (10.1%)	2.027 (SD = 0.507)	
Prolonged/long-term sick leave (more than 1 year)	9 (0.3%)	1.837 (SD = 0.433)	
Leave of absence	2 (0.1%)	1.766 (SD = 0.141)	
Type of sick leave			
Sick leave due to an accident at work	46 (3.9%)	1.891 (SD = 0.551)	0.991 ^a
Sick leave due to occupational disease	102 (8.6%)	1.883 (SD = 0.481)	
Paternity/maternity leave	97 (8.2%)	1.854 (SD = 0.483)	
Sick leave due to common illness	940 (79.3%)	1.895 (SD = 0.496)	

 δ Mean score.

SD, standard deviation.

^aKruskal Wallis H test.

TABLE 3 | Model fit and significance of regression analysis (Data from the ISTAS_Enfermería Study, Spain, 2023).

Variable	Fisher's F = 32.13		p < 0.001	
	Coefficient (β)	Degrees of freedom	F-statistic	p value
Age	-0.124	2	28.915	<0.001
Educational level	0.064	2	7.448	<0.001
Employment relationship	0.063	1	4.179	0.041
Number of services	-0.095	1	9.185	0.002
Current position	-0.065	2	10.857	<0.001
Time at current unit	0.053	3	3.656	0.012
Sick leave	-0.162	2	72.631	<0.001

^aRegression coefficient.

Despite the low explanatory power of the model, the results reveal significant relationships between several independent variables and the ISTAS_Enfermería scale score. This highlights the relevance of socio-demographic and occupational factors in the assessment.

DISCUSSION

Psychosocial risks in the work environment represent a major challenge for the health and wellbeing of workers. Particularly in highly demanding professions such as nursing, these risks become more prominent due to factors such as emotional burden, continuous stress, and interaction with patients under high-pressure conditions. A study on the mental health of healthcare workers during the COVID-19 pandemic found high levels of emotional exhaustion, stress, and anxiety among nurses, highlighting the prevalence of psychosocial risks linked to their work environment. The nursing environment is characterised by high emotional demands and constant pressure to respond effectively in difficult situations [27]. In the same line, another article had noted that the characteristics of the nursing job, such as prolonged exposure to human suffering, intense emotional burden, and high work demands, significantly increase psychosocial risks [15]. This context underlines the need to implement effective interventions to effectively address these factors and protect the mental and physical health of health professionals.

The present analysis addresses the results obtained in the assessment of psychosocial risks using the ISTAS_Enfermería scale in this population group. The main findings revealed a mean score of 1.78 on the scale, reflecting a low to moderate level of risk. However, this score overlooks significant differences linked to factors such as employment relationship, marital status, educational level, number of services assigned to the professional, time in the unit, and sick leave. All this indicates that specific job characteristics, such as the diversity of assigned areas and job stability, are determinants for understanding the perception of the working environment beyond socio-demographic variables.

Although the analysis identified significant relationships between certain socio-demographic variables and psychosocial risks, the explanatory model showed a low predictive capacity ($R^2 = 0.095$). This suggests that, while factors such as age, marital

status, and educational level seem to influence the scores obtained, there are other elements that have not been considered and that could be playing a significant role in the variations observed. According to the literature, despite socio-demographic variables being significant, other structural and contextual factors such as workload, organisational culture, and perceived social support also have a critical impact on the experience of psychosocial risks [28]. For example, variables such as leadership quality, perceived fairness at work, and team cohesion have proven particularly influential, suggesting that explanatory models need to incorporate these dimensions to fully understand how psychosocial risks are shaped [29].

Among the most notable findings is the negative relationship between age and the perception of psychosocial risks. This result, consistent with previous research, suggests that younger workers face greater difficulties in adapting to work demands, possibly owing to a lack of professional experience or stability, in contrast to their more experienced counterparts. According to Hsu [30], young workers report higher levels of work-related stress and emotional exhaustion than their more experienced peers, who tend to benefit from greater resilience and resources accumulated throughout their careers. Interventions to improve coping skills and resilience in younger workers, such as mentoring and skill development programmes, can be instrumental in reducing this vulnerability.

Regarding the sex of the participants, no significant differences were found in relation to the perception of psychosocial risks. This finding is consistent with research such as the one by Méndez-Rivero et al. [31], who found that, in homogeneous work environments in terms of working conditions, differences between men and women in the perception of psychosocial risks were found to be minimal, suggesting that risks can equally affect both sexes when working conditions are similar. However, this study also suggests that occupational segregation and specific work dynamics may influence how these risks are experienced, especially in contexts of job insecurity, underlining the need to consider broader organisational and contextual factors.

In addition, Cattani and Rizza [32] explored how occupational roles influenced by sex may modify exposure to psychosocial risks, highlighting that the representation of women is often greater in sectors with high emotional demands, such as education and health. While not always translating into significant differences in terms of perception, this factor could add relevant nuances in certain work settings [32]. Therefore, although the data from this analysis did not reveal significant

differences by sex, previous research indicates that there are contexts where such differences may be apparent depending on the occupational structure and the responsibilities assigned.

Marital status also emerged as a significant factor in this analysis, with married people scoring lower on psychosocial risk. This pattern is consistent with previous research indicating that personal stability and social support at home both have a protective effect in the face of work demands. Another study has already highlighted that the emotional and practical support offered by a partner or support network could reduce stress levels and lead to more effective coping strategies, especially in highly demanding professions such as nursing [33].

Conversely, educational level exhibited an inverse trend, as a higher number of nurses with advanced degrees, such as master's degrees, reported increased levels of psychosocial risk, as reflected in their higher scores. This suggests that despite their educational attainment, these individuals may experience greater work-related psychosocial demands or stressors. These findings align with studies indicating that the greater responsibilities and expectations associated with highly qualified profiles heighten the perception of work pressure and workload [34].

Overall, the results show that socio-demographic variables provide relevant information on psychosocial risks in the nursing profession, but are insufficient to fully explain variances. In this regard, it is crucial to address work, organisational, and group factors, given that individual characteristics must be analysed in conjunction with the work context.

Job stability plays a key role in the perception of psychosocial risks. Workers with temporary contracts or no contract reported higher levels of stress and psychosocial risks compared to those with stable or permanent jobs, such as civil servants [35]. This is in line with studies indicating that job insecurity increases anxiety, negatively affecting employees' mental and emotional health. Besides, the perception of job stability improves economic security and contributes to greater organisational identification, which reinforces resilience in the face of work demands [36]. These results underscore that job insecurity exacerbates psychosocial risks by reducing the sense of control and predictability over one's future at work, which constitute fundamental aspects of good occupational health. The number of services professionals were assigned to showed a significant relationship with risk scores, being higher among those assigned to multiple services. Several studies have explored the relationship between workload and stress in nursing professionals, highlighting how multi-service responsibilities can intensify these risks. It has been observed that a significant percentage of nurses experience high levels of workload and stress associated with the diversity of work areas and the lack of continuity in duties [37]. Recent research has also shown that increased workload, especially in terms of mental demands, generates difficulties in establishing stable routines and increases stress levels among care and administrative staff [38]. These results underline the importance of considering the impact of multi-service assignment on the occurrence of psychosocial risks and on the mental health of professionals.

High-pressure work areas, such as emergency departments, are associated with high levels of psychosocial risk due to the intensity of demands and constant exposure to critical situations. These environments generate high levels of stress due to factors

such as emotional overload, the need to make quick and accurate decisions, and the pressure to meet strict deadlines [5, 39]. Such a combination of cognitive and emotional demands in a high-demand context can lead to significant psychosocial vulnerability, affecting workers' mental health. Also, unavailability of adequate resources and limited support in these environments increase stress, which may in turn result in work-related health problems such as burnout and anxiety [5, 40].

Sick leave is significantly associated with high levels of psychosocial risk, which can be interpreted in two ways: as a direct consequence of exposure to adverse work environments or as an early indicator of pre-leave stress and burnout. Research suggests that chronic stress, especially in high-demand settings such as healthcare, can lead to physical and emotional overload, resulting in absences from work [41]. Moreover, the effort-reward model reinforces the idea that lack of resources in the face of high work demands contributes to workers' burnout, which can then translate into sick leave [42]. This underlines the need to address psychosocial factors at an early stage to prevent more serious negative effects.

Overall, the assessment of these work-related variables reflects how specific work conditions can exacerbate or mitigate psychosocial risks. This finding underscores the importance of organisational interventions that promote more stable and sustainable environments for nursing professionals.

This study has several strengths that highlight its contribution to the field of psychosocial risk research in nursing. These include the use of a significantly large sample ($n = 2,765$), which allows for a robust analysis and improves the generalisability of the results. Furthermore, the adaptation and psychometric validation of the ISTAS-Enfermería questionnaire specifically for nurses in Spain is a key methodological strength, as it provides a reliable tool for measuring psychosocial risks in this context. Another strength is that the sample comprises 2,765 nurses, of whom 85.5% identify as female and 14.5% as male. This distribution mirrors national statistics, which indicate that 85.5% of nurses in Spain are female and 14.5% are male [43]. Furthermore, available data show that 53.3% of nurses in Spain are under 45 years old [43]. Although the study did not collect specific age data, the reported levels of professional experience among our participants suggest a similar age distribution. These similarities in gender and inferred age profile indicate that the sample provides a representative cross-section of the Spanish nursing workforce. Consequently, the results of our study can be reasonably extrapolated to the broader nursing population in Spain.

However, this study has certain limitations that should be considered. Firstly, the cross-sectional design limits the ability to establish causal relationships between the examined variables, restricting interpretation to the observed associations. Secondly, although the total sample greatly exceeded the minimum sample size calculated, the non-probabilistic snowball sampling may have introduced selection biases, which could affect the representativeness of the results and limit their generalisability at the national level. Also, although the applied questionnaire had been previously validated, the use of self-report instruments may involve subjectivity and possible social desirability bias in the participants' responses. It should also be noted that the predominance of women in the sample (87.3%) could lead to a

bias in the interpretation of possible sex differences, although the size of the sub-samples was sufficient for statistically robust analyses. Finally, it would be important to complement these findings with further qualitative studies that explore participants' experiences and perspectives in greater depth, as well as longitudinal research that allows for analysis of changes over time.

To further elaborate on the results, the findings of this study may have implications for the management of psychosocial risks in the field of nursing. The identification of occupational and socio-demographic factors associated with higher levels of psychosocial risks provides a solid basis for designing specific and tailored interventions aimed at improving working conditions. For example, the results highlight the need to address job insecurity and sick leave as priorities in the management of nurses' wellbeing. Additionally, the data obtained can serve to inform institutional policies that promote job stability, professional development, and strategies to mitigate stress and anxiety in this population group. On a practical level, the results stress the importance of implementing preventive and supportive programmes that not only benefit the health of nurses, but also improve the quality of care they provide to patients, thus contributing to the strengthening of the healthcare system in general.

Conclusion

The findings indicate that higher educational levels and greater workload are linked to higher psychosocial risk, while marriage and older age seem to have a protective effect. These results highlight the need for targeted interventions to mitigate work-related psychosocial stressors. Organisational strategies such as reducing workload, improving work-life balance, and providing adequate support for employees with higher education levels could help alleviate these risks. Future studies should focus on identifying specific mechanisms through which educational level influences psychosocial risk and developing evidence-based interventions tailored to different professional groups.

ETHICS STATEMENT

This study was approved by the Provincial Research Ethics Committee of Huelva, Spain, with code 1520-N-23. The

studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

Conceptualization: AN-G, JG-S, CR-F, DA-M, GF-V, JF-R, RP-G, AR-N, RA-C. Data curation: AN-G, JG-S, CR-F, DA-M, GF-V, JF-R, RP-G, AR-N, RA-C. Formal analysis: AN-G, JG-S, CR-F, DA-M, GF-V, JF-R, RP-G, AR-N, RA-C. Investigation: AN-G, JG-S, CR-F, DA-M, GF-V, JF-R, RP-G, AR-N, RA-C. Methodology: AN-G, JG-S, CR-F, DA-M, GF-V, JF-R, RP-G, AR-N, RA-C. Project administration: AN-G, JG-S, RA-C. Resources: AN-G, JG-S, CR-F, DA-M, GF-V, JF-R, RP-G, AR-N, RA-C. Software: AN-G, JG-S, CR-F, DA-M, GF-V, JF-R, RP-G, AR-N, RA-C. Supervision: AN-G, JG-S, CR-F, DA-M, GF-V, JF-R, RP-G, AR-N, RA-C. Validation: AN-G, JG-S, CR-F, DA-M, GF-V, JF-R, RP-G, AR-N, RA-C. Visualization: AN-G, JG-S, CR-F, DA-M, GF-V, JF-R, RP-G, AR-N, RA-C. Writing – original draft: AN-G, JG-S, CR-F, DA-M, GF-V, JF-R, RP-G, AR-N, RA-C. Writing – review and editing: AN-G, JG-S, CR-F, DA-M, GF-V, JF-R, RP-G, AR-N, RA-C. All authors contributed to the article and approved the submitted version.

FUNDING

The author(s) declare that no financial support was received for the research and/or publication of this article.

CONFLICT OF INTEREST

The authors declare that they do not have any conflicts of interest.

GENERATIVE AI STATEMENT

The authors declare that no Generative AI was used in the creation of this manuscript.

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Publicación 4:

Título

Estrés en la enfermería novel de urgencias: un desafío invisible y subestimado

Referencia

Narbona-Gálvez A, Gómez-Salgado J, Allande-Cussó R. Estrés en la enfermería novel de urgencias: un desafío invisible y subestimado. *Emergencias*. 2025;37:299-300

Datos de la revista

Título: Emergencias – Revista científica de la Sociedad Española de Medicina de Urgencias y Emergencias (SEMES)

Título abreviado: EMERGENCIAS

Idioma: Español

Factor de Impacto (2024): 6.3

Ranking (JCR): SCIE EMERGENCY MEDICINE

Q1 (2/56)

Copia del artículo

ANEXOS: PUBLICACIÓN

El artículo "*Estrés en la enfermería novel de urgencias: un desafío invisible y subestimado*" ha sido retirado de la presente tesis por razones relacionadas con restricciones derivadas de los derechos de autor. En sustitución del texto completo, se facilita la referencia bibliográfica correspondiente y enlace al texto completo.

Narbona-Gálvez A, Gómez-Salgado J, Allande-Cussó R. Estrés en la enfermería novel de urgencias: un desafío invisible y subestimado. *Emergencias*. 2025;37:299-300. DOI: [10.55633/s3me/004.2025](https://doi.org/10.55633/s3me/004.2025)

Enlace al texto completo: <https://doi.org/10.55633/s3me/004.2025>

Publicación 5:

Título

Exploring Psychosocial Risk Factors Among Spanish Nurses: Links to Health and Professional Variables

Referencia

Narbona-Gálvez, Á., Gómez-Salgado, J., Allande-Cussó, R., Ruiz-Frutos, C., Ayuso-Murillo, D., Fontán-Vinagre, M. G., Prieto-Callejero, B., Goniewicz, K., Fagundo-Rivera, J., & Castaño-Seiquer, A. Exploring psychosocial risk factors among Spanish nurses: Links to health and professional variables. *Journal of Nursing Management*, 2025, Article 5531311. <https://doi.org/10.1155/jonm/5531311>

Datos de la revista

Título: Journal of Nursing Management

Título abreviado: J. Nurs. Manag.

Idioma: Inglés

Factor de Impacto (2024): 4.0

Ranking (JCR): SCIE NURSING

Q1 (6/192)

SSCI MANAGEMENT

Q2 (132/420)

Copia del artículo

Research Article

Exploring Psychosocial Risk Factors Among Spanish Nurses: Links to Health and Professional Variables

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Received 6 May 2025; Revised 29 July 2025; Accepted 30 July 2025

Academic Editor: César Leal Costa

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Objective: To identify factors associated with the perception of psychosocial risks among practising nurses in Spain and to examine their relationship with personal, professional and health-related characteristics.

Design: Observational, cross-sectional and correlational study.

Participants: A total of 2765 nurses completed an online questionnaire between March and June 2023. The survey was distributed via professional networks and the General Nursing Council of Spain.

Methods: Descriptive and bivariate analyses were conducted, along with a categorical regression to identify factors associated with perceived psychosocial risk (measured using the ISTAS_Enfermería scale). Model assumptions were tested and multicollinearity was assessed. The model included self-reported sociodemographic, occupational and mental health variables.

Results: Female sex, being under 41 years of age, working night or rotating shifts, recent use of psychotropic medication and symptoms of anxiety or depression were all associated with higher levels of perceived psychosocial risks. These variables explained 29.6% of the variance. Due to the cross-sectional design, no causal relationships can be inferred.

Conclusions: Certain professional profiles appear to be more vulnerable to perceived psychosocial risks that are associated with their personal, occupational and health characteristics. These associations are likely to be bidirectional and context-dependent. Longitudinal research is needed to better understand causal mechanisms and to guide personalised preventive interventions.

Keywords: health perception; healthcare services; nursing; occupational stress; occupational well-being; psychosocial risks

Summary

- What is already known
 - Psychosocial risks, such as work overload or lack of support, are well-established determinants of psychological distress, burnout, and the intention to leave the nursing profession.
 - Health conditions such as chronic illnesses, poor self-perceived health and high stress levels have previously been linked to worse health outcomes and workplace issues among healthcare professionals.
 - Younger age and job insecurity are often associated with greater stress and vulnerability among nurses.
- What this paper adds
 - Confirms previously reported links between psychosocial risks and health-related factors—such as chronic illness, self-perceived health and stress—while providing contextualised evidence from a large national sample of Spanish nurses.
 - Highlights that younger age, nonmarital cohabitation and holding a Master's degree are associated with a higher perception of psychosocial risks in the Spanish nursing context. These associations may reflect not only actual exposure but also greater critical awareness or the influence of unmeasured occupational factors such as job stability or workload.
 - Suggests a potential link between regular psychotropic drug use, sick leave and perceived psychosocial risks, raising questions about the role of coping mechanisms in shaping risk perception.

1. Introduction

The well-being of workers, which encompasses both physical and psychological health, is a key factor that affects the productivity and success of any organisation [1]. In healthcare, and specifically in nursing, occupational health becomes particularly relevant due to the emotional and physical demands of the job. The 2010 'Towards Better Work and Well-being' conference emphasised the need for a holistic approach to occupational health, highlighting the importance of addressing the effects of an ageing workforce and the impact of chronic illnesses on the healthcare staff [2]. In this context, psychosocial risks, such as work overload, role conflict, lack of organisational support and continuous exposure to patient suffering, have been identified as determinants of psychological distress, emotional exhaustion and intention to leave the profession among the nursing staff [3]. In the context of this study, 'psychosocial risks' are operationally defined as the subjective perception of work environment conditions that may affect the psychological and physical health of nursing professionals. This perception is specifically measured through the dimensions assessed by the ISTAS_Enfermería questionnaire, which addresses aspects such as work stress, job satisfaction, well-being at work, job insecurity and dual presence. Recent studies in the

Spanish context highlight that these risks are directly associated with symptoms of anxiety, depression and burnout, thus compromising both the health of professionals and the quality of care [4].

In recent years, psychosocial risks in the nursing sector have intensified due to various factors, with the COVID-19 pandemic being one of the main catalysts for this phenomenon [5]. This global health crisis led to a drastic increase in workload and extreme psychological pressure, which exacerbated pre-existing mental health problems [6]. A recent meta-analysis found that the prevalence of anxiety among healthcare workers during the pandemic was at 40%, depression at 37%, distress at 37% and post-traumatic stress disorder at 49% [6].

In addition to the pandemic, other structural factors contribute to the deterioration of the mental health of nurses. Factors such as work overload, long shifts and the introduction of new technologies have increased work pressure, which translates into increased stress, absenteeism and a decrease in the quality of care provided [7].

Also, factors such as high workload, lack of support and strained working relationships increase the risk of anxiety, depression and burnout among nurses. These conditions not only affect their well-being but also diminish the quality of care they provide to patients [8].

Globally, the shortage of nurses and an ageing workforce exacerbate these problems, underscoring an urgent need to improve working conditions and promote a more supportive work environment [9]. A positive work environment can reduce stress and improve patient safety, but newly graduated nurses face challenges related to the gap between theory and practice, which increases stress and the risk of errors in care [10].

Despite the extensive documentation of psychosocial risks in the nursing field provided by the international literature, there is a specific gap in research that comprehensively addresses the interrelationship between these risks and various sociodemographic and health variables among Spanish nursing staff. Recent studies have assessed psychosocial risks in Spanish nurses, finding significant differences according to sociodemographic and employment variables [11]. However, few have explored in depth the association of factors such as the presence of chronic diseases, self-perceived health, stress, history of sick leave and the use of psychotropic drugs with the perception of psychosocial risks in this specific population. The feminised nature of the nursing profession in Spain (with 87.3% of women in this study sample) underlines the importance of understanding differences by sex regarding psychosocial risks and their impact on the health of female workers. This is especially important in the context of an ageing nursing workforce, where women may experience greater exposure to these risks and greater difficulties in balancing work and family life [12]. The paucity of longitudinal studies in Spain that track the evolution of these risks and their long-term consequences also represents a significant limitation that this preliminary study seeks to partially address by providing a solid foundation for future research.

In this study, the term 'ageing of the workforce' is employed to denote the specific phenomenon of the ageing demographic of nursing staff in Spain. General demographic ageing significantly impacts the nursing workforce, leading to an increase in the average age of active professionals and a decline in the replacement rate for retirees [13]. This phenomenon is of critical importance to the Spanish healthcare system, as an ageing nursing workforce may experience an increase in the prevalence of chronic diseases, greater vulnerability to occupational stress and, potentially, a higher number of sick leave days [14]. Therefore, it is crucial to investigate how these demographic changes within the nursing profession directly affect the perception of psychosocial risks and the health of these professionals. It is important to note that, while studies suggest that older workers may have more positive well-being outcomes [12], younger nurses may experience higher levels of stress due to lack of experience and job instability, highlighting the complexity of the age variable in this context [11].

In addition, job insecurity also has a negative impact on nurses, especially on those who are younger. This contributes to the abandonment of the profession and negatively affects the physical and mental health of nurses [9].

Besides psychosocial risks, other health-related variables that affect nurses must also be considered, such as the presence of chronic illnesses. Several studies have shown a high prevalence of chronic pathologies among the nursing staff, especially those of a musculoskeletal (such as low back pain) or cardiovascular nature, which are directly related to the physical and postural characteristics of the work, and to rotating shifts and chronic stress [16]. These conditions not only impact the professional's quality of life but also their performance and retention in the work environment.

Another variable of great interest is self-perceived health status, which acts as a subjective indicator of the physical and emotional state of workers. A low perception of health has been linked to high levels of fatigue, stress, low work engagement and a greater intention to leave the profession [17]. This perception also correlates with a higher number of sick leaves, which in the health sector not only puts a strain on the rest of the working team but also represents a significant cost to the health system [18].

In this context, the use of psychoactive substances can be understood as a behaviour associated with exposure to psychosocial risks, rather than as a risk in itself. Various studies have identified nursing staff as a group vulnerable to the use of substances such as alcohol, tobacco, benzodiazepines or even prescription drugs (antidepressants and opioid analgesics), often used as a coping strategy for stress or work-related burnout [19]. Despite the ongoing taboo surrounding the subject in healthcare settings, the available evidence suggests that a considerable proportion of professionals use these substances. This practice not only poses a threat to their personal health but also jeopardises the quality and safety of the care they provide [20]. In this study, the consumption of alcohol, tobacco and other substances was included as a predictive variable in the statistical model, and it is evaluated using self-reported items that collected data on the regular consumption of these substances in the

previous year. This information enables an assessment of its potential correlation with the perception of psychosocial risks. However, caution should be given to the interpretation of the findings, due to the risk of underreporting and the causal complexity of these behaviours.

Drawing upon these findings, the present study aims to contribute to the available literature by conducting a comprehensive analysis of the prevalence of varying degrees of perceived psychosocial risks among Spanish nursing staff. Specifically, the objective is to ascertain potential disparities in the perception of psychosocial risk according to key sociodemographic variables, including sex, age, marital status and educational level. Additionally, a primary objective is to determine the association between the perception of psychosocial risks and various health-related variables, including the presence of chronic diseases, self-perceived health status, stress levels, history of sick leave and the use of psychoactive substances among Spanish nurses. Ultimately, the objective of the present study is to identify the most significant sociodemographic and health factors in predicting the perception of psychosocial risks within the context of Spanish nursing.

In light of the relevance of these factors, this study adopts an exploratory approach to examine and analyse psychosocial risks in Spanish nursing and their relationship with certain health-related variables, with the aim of identifying key associations and potential predictors. Understanding these dynamics will support the development of strategies to improve the working conditions and well-being of nursing professionals, thereby enhancing both their quality of life and the care they provide to patients.

2. Methods

2.1. Design. A cross-sectional descriptive study based on questionnaires.

2.2. Population and Sample. The present study relied on a population of a total of 345,969 registered nurses in Spain, according to data corresponding to the year 2023. The research had a national scope, covering registered nurses in all Spanish autonomous regions, and considered the participation of nurses who met the following inclusion criteria: (i) performing the healthcare functions of the profession, (ii) residing in Spain and (iii) actively practising the profession at the time of the study. Nurses who did not meet these criteria were excluded, as well as the following: (i) professionals with degrees validated abroad who had not yet begun to practice in Spain, (ii) nurses who performed noncare functions and (iii) those who worked outside the country.

The data were collected from nurses working in both primary and specialised care settings, either within the National Health Service (NHS) or in private institutions such as private clinics, nursing homes for the elderly, among others.

To determine the sample size, a calculation was made considering a margin of error of 5%, a confidence level of 95% and a heterogeneity of 50%, which determined a minimum requirement of 384 participants. However, the final

number of nurses in the sample was 2,765, significantly exceeding the initial estimate and, consequently, increasing the statistical power of the study. Based on the final sample size of 2765 and assuming a medium effect size ($f^2 = 0.15$), the statistical power of the multivariate model was estimated to be above 0.99 ($\alpha = 0.05$), which exceeds the conventional threshold of 0.80. Similar levels of power were achieved for the bivariate analyses, even in the case of small effect sizes.

The sample selection was carried out by means of nonprobabilistic or 'snowball' sampling, starting with nursing professionals who agreed to participate and who, in turn, facilitated the incorporation of new participants through dissemination. Participation in the study was completely voluntary, and the confidentiality of the information provided was guaranteed. Prior to data collection, all participants gave informed consent, ensuring compliance with the ethical principles of the study.

2.3. Variables. The present study examines sociodemographic, psychosocial and health-related variables. To assess the sociodemographic profile, questions on sex, age, marital status and level of education attained were included. The full list of response categories for each variable is presented in Table 1. Regarding the level of education, the questionnaire also collected data on training and professional development. 'Expertise' referred to the participant's self-reported level of clinical specialisation or postgraduate training within the nursing field (e.g., wound care and critical care). 'Vocational training' referred to previous technical or professional education obtained prior to or alongside university-level nursing studies.

Health-related variables included questions on the presence of chronic illnesses, health status, level of stress, whether they were on sick leave, and if so, the type of sick leave, and how often they used different substances: alcohol, tobacco, cannabis, heroin, amphetamines, benzodiazepines and antidepressants.

The level of psychosocial risks was assessed using the ISTAS_Enfermería scale. This tool is a validated adaptation for the nursing population, designed to measure specific psychosocial factors that affect the performance and well-being of these professionals in the workplace. In this study, the term 'psychosocial risk' is operationally quantified through the scores obtained in the five dimensions of the scale: 'Support at work', 'Job satisfaction', 'Well-being at work', 'Job insecurity', and 'Double presence'. The total score, which ranges from 0 (*most favourable*) to 4 (*least favourable*), represents the overall level of perception of psychosocial risk, with higher scores indicating a greater perception of risk. The tool measures psychosocial factors affecting the work performance of nurses, such as work stress and quality of life at work. The validation of the tool in the nursing population obtained a Cronbach's alpha value of 0.7. The scale presents a factorial structure of 5 dimensions with 15 items, which explain 63.3% of the variance, and shows an optimal fit in the parameters calculated by confirmatory factor analysis (values higher than 0.90 for the TLI, NFI and CFI, lower than 0.08 for the SRMR and lower than

0.08 for the RMSEA) [11]. The reliability and CFA fit indices cited refer to the original validation study by Narbona-Gálvez et al. [11], which reported satisfactory psychometric properties of the ISTAS_Enfermería scale. No additional CFA was conducted in the present study.

The ISTAS_Enfermería instrument [11] was selected for this study given its specific adaptation to the nursing profession, and it is derived from the Spanish version of the Copenhagen Psychosocial Questionnaire (COPSOQ) [21]. Unlike other generic instruments used in occupational health (such as the Job Content Questionnaire or the effort-reward imbalance [ERI] model), ISTAS_Enfermería focuses on dimensions that are particularly relevant in the nursing context, such as emotional demands, job satisfaction and dual presence. Its structure and language are tailored to the reality of clinical nursing work in Spain, which enhances its validity and applicability to this professional group [11].

This tool comprises five dimensions: (1) *psychological demands* (5 items), (2) *active work and development possibilities* (4 items), (3) *social support and quality of leadership* (4 items), (4) *compensations* (3 items) and (5) *double presence* (2 items). Each item is scored on a Likert scale, and dimension scores are standardised from 0 to 20 to allow comparability. The items address aspects such as mental workload, autonomy, perceived support, salary/benefits and work-life balance. The scores varying according to the dimension: in 'Support at work' and 'Job satisfaction', items are rated from 0 (*Always*) to 4 (*Never*), while in 'Well-being at work', 'Job insecurity' and 'Double presence', items are rated from 4 (*Always*) to 0 (*Never*). The total score is obtained by adding the values of all items, ranging from 0 (*most favourable*) to 60 (*least favourable*) (Supporting Table 1).

2.4. Procedure. The data collection process took place over a period of 3 months, from 1 August to 31 October 2023. For this purpose, a digital questionnaire was elaborated using the Google Forms © platform, which was disseminated through social networks and professional nursing groups. This questionnaire included questions related to the different variables to be studied. As a prerequisite for access, participants had to confirm their status as practising nurses and accept the informed consent. Participation was voluntary, and responses were collected through an anonymous online questionnaire, with no personal identifiers stored or linked to the data. Therefore, to minimise the risk of duplicate responses or inclusion of individuals outside the target population, the questionnaire included a mandatory screening item at the beginning, requiring participants to confirm that they were currently practising nurses in Spain. Responses were only accepted if this criterion was explicitly marked. In addition, the research team monitored the dataset to identify potential duplicate entries (e.g., repeated timestamps or identical demographic patterns), but no significant anomalies were detected. Although participation was anonymous and no IP filtering was used to ensure accessibility, data quality was reviewed during preprocessing to confirm internal consistency. The estimated time to complete the questionnaire was approximately 7–10 min.

TABLE 1: Sociodemographic variables.

Variables	Total sample (<i>n</i> = 2765)	ISTAS21 mean score ($\bar{x}$ /SD)	Contrast of hypotheses
Sex			
Male	341 (12.3%)	1.792 (SD = 0.562)	$p = 0.503^a$
Female	2414 (87.3%)	1.779 (SD = 0.494)	
Nonbinary	10 (0.4%)	1.874 (SD = 0.503)	
Age			
Mean	40.87 years	1.78 (SD = 0.5)	Tau $b^b = -0.12$ ($p < 0.001$)
Marital status			
Married	1186 (42.9%)	1.722 (SD = 0.494)	0.001 ^a
Divorced	117 (4.2%)	1.751 (SD = 0.500)	
In a couple (cohabiting)	748 (27.1%)	1.840 (SD = 0.517)	
In a couple (not cohabiting)	242 (8.8%)	1.828 (SD = 0.484)	
Separated	41 (1.5%)	1.824 (SD = 0.561)	
Single	422 (15.3%)	1.819 (SD = 0.492)	
Widowed	9 (0.3%)	1.814 (SD = 0.546)	
Studies			
Bachelor's degree	588 (21.3%)	1.809 (SD = 0.480)	0.007 ^a
Upper University studies (former educational model)	42 (1.5%)	1.820 (SD = 0.550)	
Lower University studies (former educational model)	704 (25.5%)	1.722 (SD = 0.464)	
Doctorate	59 (2.1%)	1.714 (SD = 0.641)	
Specialty	397 (14.4%)	1.751 (SD = 0.532)	
Master's degree	664 (24%)	1.831 (SD = 0.522)	
Expertise	298 (10.8%)	1.803 (SD = 0.504)	
Vocational training	13 (0.5%)	1.764 (SD = 0.493)	

Note: $\bar{x}$ Mean score.

Abbreviation: SD, standard deviation.

^aKruskal–Wallis H.

^bKendall's Tau B.

The research team managed the distribution of the questionnaire and ensured its dissemination in channels intended for nursing professionals. To broaden its scope, the study was supported by the General Council of Nursing of Spain, which actively collaborated in its dissemination. Specifically, the questionnaire was shared through targeted newsletters and emails sent to professional mailing lists of registered nurses interested in participating in research studies across the 17 autonomous regions in Spain.

2.5. Data Analysis. Both univariate and bivariate descriptive analyses were carried out using SPSS Statistics © v26 software [22]. To determine whether the data followed a normal distribution, the Kolmogorov–Smirnov test was applied, with results showing a value of $p < 0.05$, indicating that the distribution was not normal. For this reason, nonparametric statistical tests were used, such as the Mann–Whitney U and the Kruskal–Wallis tests for comparisons between groups, as well as Kendall's Tau B coefficient to assess correlations between variables.

A categorical regression (CATREG) model was conducted using the overall score of perceived psychosocial risks (total ISTAS_Enfermería score) as the dependent variable. The independent variables were sex, age, marital status, education level, presence of chronic illness, self-perceived health status, use of psychotropic medication and history of sick leave. The CATREG analysis was applied, which is suitable for variables of a qualitative nature [24]. This method included components characteristic of

classical regression, such as the coefficient of determination (R^2), the analysis of variance associated with the regression, and the assessment of the significance of the model parameters. The selection of variables for the multivariate model was based on both theoretical relevance, as supported by the literature, and results from the bivariate analyses. In order to guarantee a correct adaptation of the variables to the model, the optimal scaling function available in SPSS© was used [22].

2.6. Ethical Aspects. This study was approved by the Provincial Research Ethics Committee of Huelva (Code 1520-N-23) and was conducted in accordance with the ethical principles set out in the Declaration of Helsinki [26]. All participants gave their informed consent after reviewing the study information and confirming their current professional status as nurses. The questionnaire was anonymous and self-administered, and access to participation required explicit confirmation of consent.

The collection, processing and storage of data complied with the applicable data protection legislation, including Regulation (EU) 2016/679 of the European Parliament and of the Council on the protection of personal data (GDPR) [23], and Spain's Organic Law 3/2018 on the Protection of Personal Data and Guarantee of Digital Rights (LOPDGDD). Appropriate technical and organisational measures were implemented to guarantee data confidentiality, and all information was stored in a secure database, accessible only to the research team.

3. Results

3.1. Descriptive Analysis. The research involved 2765 nursing professionals from various regions of Spain. The average age of respondents was approximately 41 years, with a predominantly female sample (87.3%), and a very small proportion identified themselves as nonbinary ($n = 13$; 0.5%). The mean score on the ISTAS21 questionnaire was 1.78 ($SD = 0.503$), with no statistically significant differences by sex ($p = 0.503$). The participants' ages ranged from 21 to 65 years, with a median age of 42.1 (IQR: 34–51). Age groups were distributed as follows: under 30 years (18.5%), 30–39 years (27.3%), 40–49 year (29.6%); and 50 years or older (24.6%). The main results of the descriptive bivariate analysis, relating to sociodemographic and occupational variables, are presented in Tables 1 and 2.

In addition to the global ISTAS_Enfermería score, the mean values of the five psychosocial risk dimensions were analysed. The highest scores were observed in *psychological demands* ($\bar{x} = 12.32$; $SD = 2.82$), followed by *active work and development possibilities* ($\bar{x} = 8.75$; $SD = 3.06$) and *social support and quality of leadership* ($\bar{x} = 8.42$; $SD = 3.23$). Lower scores were found in *compensations* ($\bar{x} = 5.73$; $SD = 2.91$) and *double presence* ($\bar{x} = 3.67$; $SD = 1.74$). These results indicate that perceived psychological overload and demands are the most salient risks, while work–life balance (double presence) and compensation also represent significant areas of concern. Bivariate analyses were conducted to explore the association between sociodemographic variables and each psychosocial risk dimension. Spearman's rho revealed statistically significant but weak negative correlations between age and most risk dimensions, particularly with *compensations* ($\text{Tau-b} = -0.34$; $p < 0.001$), *social support* ($\text{Tau-b} = -0.10$; $p < 0.001$) and *active work* ($\text{Tau-b} = -0.07$; $p < 0.001$). No significant association was found between age and *double presence* ($\text{Tau-b} = 0.01$; $p = 0.523$). In addition, Kruskal–Wallis tests showed significant differences in *psychological demands* ($H = 18.32$; $p = 0.005$), *social support* ($H = 23.96$; $p < 0.001$), *compensations* ($H = 110.85$; $p < 0.001$) and *double presence* ($H = 96.18$; $p < 0.001$) regarding marital status and educational level. These findings indicate that certain sociodemographic factors may influence the perception of specific psychosocial risks in the nursing workforce.

The findings suggest statistically significant differences in ISTAS_Enfermería scores according to marital status and level of education attained. The Kruskal–Wallis test revealed significant differences in psychosocial risk scores related to marital status and education level. Specifically, participants with a Master's degree showed higher perceived risk scores compared to those with either doctoral or undergraduate degrees. Similarly, married individuals scored lower than those who were single or separated. A negative and significant correlation was also identified between age and the scores ($\text{Tau-b} = -0.12$, $p < 0.001$), suggesting that the perception of psychosocial risks tends to decrease with increasing age. In contrast, no significant differences were observed according to sex ($p = 0.503$), despite women constituting the majority of the sample (87.3%).

The mean ISTAS_Enfermería scores showed statistically significant differences according to the presence of chronic illness, self-perceived health status, level of stress, sick leaves and use of different toxic substances ($p = 0.001$). Higher values were observed in professionals with chronic illness ($\bar{x} = 1.841$), in those who rated their health as poor ($\bar{x} = 2.292$) or fair ($\bar{x} = 2.064$), and in those who had had two or more sick leaves in the previous year ($\bar{x} = 2.027$). In addition, a positive correlation was found between perceived stress and ISTAS_Enfermería scores ($\text{Tau-b} = 0.318$, $p = 0.001$).

Concerning the use of psychotropic drugs, higher scores were found among regular users of benzodiazepines ($\bar{x} = 2.031$) and regular users of antidepressants ($\bar{x} = 2.095$). No significant differences were found by the type of sick leave or regarding the use of alcohol, tobacco, cannabis, heroin or amphetamines.

3.2. Multivariate Regression Analysis. A CATREG analysis was carried out using the total score of the ISTAS_Enfermería scale as the dependent variable and those variables that showed significant differences in the bivariate analysis as predictors (see Tables 1 and 2). To indicate the precision of the associations, model estimates were reported with their corresponding 95% confidence intervals. The results of the regression analysis are shown below (Table 3).

The regression model applied is significant and explains 29.6% of the variance of the data.

Accordingly, nurses who were cohabiting with a partner ($\bar{x} = 1.840$) had a 0.072 times higher perception of psychosocial risks than those who were married ($\bar{x} = 1.722$), single ($\bar{x} = 1.819$), separated ($\bar{x} = 1.824$) or widowed ($\bar{x} = 1.814$). This suggests that marital status significantly influences the perception of the work environment, with the condition 'cohabiting without being married' being associated with a higher perception of risks.

In terms of educational level, nurses with a Master's degree ($\bar{x} = 1.831$) or a Bachelor's degree (new model) ($\bar{x} = 1.809$) presented a perception of psychosocial risks 0.104 times higher than those with Lower University Studies (former model) ($\bar{x} = 1.722$) or a Doctorate ($\bar{x} = 1.714$). This shows a significant relationship between the educational level and the perception of the work environment: the more technical or academic the level, the lower the perception of risk.

Regarding sick leaves, nurses who had had one sick leave ($\bar{x} = 1.842$) or two or more sick leaves ($\bar{x} = 2.027$) in the previous year had a higher perception of risks than those who had not had any ($\bar{x} = 1.689$). However, the model shows a negative association ($\beta = -0.135$; $p < 0.001$), indicating that, overall, those who had had sick leaves had a lower perception psychosocial risks, i.e., 0.135 times lower ($\bar{x} = 1.689$) than those who had not had any sick leave.

With respect to benzodiazepine use, nurses who used benzodiazepines regularly ($\bar{x} = 2.031$) were more likely to perceive risks than those who used them sporadically ($\bar{x} = 1.929$) or never used them ($\bar{x} = 1.760$). However, the model indicates that this group had a lower perception of psychosocial risks, i.e., 0.079 times lower ($\beta = -0.059$; $p < 0.001$).

TABLE 2: Work-related variables.

Variables	Total sample (<i>n</i> = 2765)	ISTAS21 mean score ($\bar{x}$ /SD)	Contrast of hypotheses
Chronic illness			
No	1972 (71.3%)	1.757 (SD = 0.497)	0.001 ^c
Yes	793 (28.7%)	1.841 (SD = 0.513)	
Health status			
Poor	13 (0.5%)	2.292 (SD = 0.543)	0.001 ^a
Fair	276 (10%)	2.064 (SD = 0.511)	
Good	1265 (45.8%)	1.797 (SD = 0.471)	
Very good	1027 (37.1%)	1.706 (SD = 0.491)	
Excellent	184 (6.7%)	1.632 (SD = 0.575)	
Level of stress			
Mean	6.86	1.781 (SD = 0.503)	Tau b^b = 0.318 (p 0.001)
Sick leave			
I have had NO sick leave in the last year	1444 (52.3%)	1.689 (SD = 0.494)	0.001 ^a
I have had ONE sick leave in the last year	1028 (37.2%)	1.842 (SD = 0.484)	
I have had TWO OR MORE sick leaves in the last year	280 (10.1%)	2.027 (SD = 0.507)	
Prolonged/long-term sick leave (more than 1 year)	9 (0.3%)	1.837 (SD = 0.433)	
On leave of absence	2 (0.1%)	1.766 (SD = 0.141)	
Type of sick leave			
Sick leave due to accident at work	46 (3.9%)	1.891 (SD = 0.551)	0.991 ^a
Sick leave due to occupational disease	102 (8.6%)	1.883 (SD = 0.481)	
Parental leave	97 (8.2%)	1.854 (SD = 0.483)	
Sick leave due to common illness	940 (79.3%)	1.895 (SD = 0.496)	
Frequency of alcohol consumption			
Never	672 (24.3%)	1.826 (SD = 0.532)	0.054 ^a
Sporadically	1969 (71.2%)	1.767 (SD = 0.490)	
Regularly	124 (4.5%)	1.769 (SD = 0.526)	
Frequency of tobacco use			
Never	2225 (80.5%)	1.774 (SD = 0.505)	0.243 ^a
Sporadically	238 (8.6%)	1.820 (SD = 0.476)	
Regularly	302 (10.9%)	1.802 (SD = 0.507)	
Frequency of cannabis use			
Never	2695 (97.5%)	1.779 (SD = 0.504)	0.062 ^a
Sporadically	60 (2.2%)	1.833 (SD = 0.454)	
Regularly	10 (0.4%)	2.066 (SD = 0.309)	
Frequency of heroin use			
Never	2758 (99.7%)	1.781 (SD = 0.503)	0.566 ^a
Sporadically	5 (0.2%)	1.573 (SD = 0.314)	
Regularly	2 (0.1%)	1.833 (SD = 0.047)	
Frequency of amphetamines use			
Never	2749 (99.4%)	1.780 (SD = 0.502)	0.343 ^a
Sporadically	14 (0.5%)	2.009 (SD = 0.617)	
Regularly	2 (0.1%)	1.900 (SD = 0.471)	
Frequency of benzodiazepine use			
Never	2426 (87.7%)	1.760 (SD = 0.498)	0.001 ^a
Sporadically	322 (11.6%)	1.929 (SD = 0.512)	
Regularly	17 (0.6%)	2.031 (SD = 0.597)	
Frequency of antidepressant use			
Never	2653 (95.9%)	1.772 (SD = 0.498)	0.001 ^a
Sporadically	73 (2.6%)	1.958 (SD = 0.527)	
Regularly	39 (1.4%)	2.095 (SD = 0.611)	

Note: $\bar{x}$ Mean score.

Abbreviation: SD, standard deviation.

^aKruskal–Wallis H.

^bKendall's Tau B.

^cMann–Whitney.

Finally, although the use of antidepressants was not statistically significant ($\beta = -0.063$; $p = 0.006$), a similar trend is observed: professionals who used them regularly

($\bar{x} = 2.095$) reported a higher perception of psychosocial risks than those who used them sporadically ($\bar{x} = 1.958$) or never used them ($\bar{x} = 1.772$). Even so, the model suggests

TABLE 3: Model fit and significance of regression analysis.

Variable	Coefficient (β)	Degrees of freedom	F-statistic	<i>p</i> value
Marital status	0.072	2	14.316	< 0.001
Studies	0.104	2	30.811	< 0.001
Chronic illness	0.021	2	1.045	0.352
Health status	0.149	1	6.991	0.008
Sick leave	-0.135	1	39.622	< 0.001
Frequency of benzodiazepine use	-0.079	2	14.945	< 0.001
Frequency of antidepressant use	-0.063	2	7.476	0.06

Note: $R^2 = 0.296$; Fisher's $F = 24,037$; $p < 0.001$.

that, on average, nurses who used these drugs had a 0.063 times lower perception of psychosocial risks than those who did not use them.

4. Discussion

Psychosocial risks in the field of nursing remain a fundamental concern for both occupational health and quality of care [5]. The results obtained in this study, based on the ISTAS_Enfermería questionnaire, show the presence of significant risks which, while they may generally be considered moderate, are intensified by certain sociodemographic and health factors. These findings are in line with the previous literature highlighting the vulnerability of this group to demanding working conditions, high emotional burden and constant exposure to stressful situations [27].

In the specific context of Spain, institutional programmes promoted by the Ministry of Health should be mentioned. These programmes aim to enhance the mental and psychosocial well-being of healthcare professionals. The Mental Health Action Plan 2022–2024 (Ministry of Health, 2022) is one such example, as it includes specific measures to address psychological distress in the healthcare workplace. These measures include actions to prevent burnout, strengthen emotional support and promote healthy working environments [28].

Further analysis of the specific dimensions of psychosocial risk revealed significant associations with socio-demographic variables. Age showed weak but significant negative correlations with most risk dimensions, particularly with compensations ($\rho = -0.34$; $p < 0.001$) and social support ($\rho = -0.10$; $p < 0.001$), suggesting that younger professionals may perceive lower levels of institutional support and reward. In contrast, no significant relationship was found between age and double presence. Regarding civil status and education level, Kruskal–Wallis tests revealed statistically significant differences across groups in all dimensions except active work ($p = 0.064$). The most pronounced differences were observed in compensations ($H = 110.85$; $p < 0.001$) and double presence ($H = 96.18$; $p < 0.001$), indicating that family and educational background may influence how professionals perceive workload balance and reward structures. These findings underscore the relevance of disaggregating psychosocial risks by subdimension and demographic profile in order to better tailor occupational health strategies.

One of the main findings of the present study is the inverse relationship between age and perceived psychosocial risk, as evidenced by a significant yet weak negative correlation. This pattern was consistent across the age distribution, which included a balanced representation of younger (< 30), mid-career (30–49) and older (≥ 50) nurses. This pattern has already been identified in the previous research, which suggests that younger professionals tend to have fewer resources to cope with work-related stress, thus facing higher levels of anxiety and emotional exhaustion [27]. Reduced work experience, together with possible job instability in early career stages, may explain this increased susceptibility [30]. However, it is important to consider the possibility that these associations could be influenced by occupational factors not included in the model. Such factors may include contract type, workload or work shift, which may be more unfavourable for younger professionals or those in the early stages of their careers. In addition, the association between age and perceived psychosocial risks was statistically significant; however, the effect size was weak. This also suggests a limited influence in practical terms and indicates that other contextual variables which were not measured (e.g., seniority, work setting or role stability) may moderate this relationship. These results reflect the independent associations of each variable with perceived psychosocial risk, while controlling for the influence of the other variables included in the model.

Regarding marital status, lower psychosocial risk scores were identified in married people, suggesting that the emotional and social support provided by a partner could function as a protective factor, as has already been reported in other studies [31]. This result reinforces the importance of considering the personal environment of the worker as a variable that can modulate the perception of work stress. However, the cohabitation situation may also reflect different stages of life or family responsibilities, which could interact with the work environment and alter the perception of risk.

A particularly relevant finding is the difference observed according to the level of education. While professionals with a doctorate or lower university studies had lower scores, those with a Master's degree showed higher levels of perception of psychosocial risks. This can be interpreted from different perspectives. On the one hand, it is possible that those with Master's degrees hold positions with greater responsibilities, which could increase the perceived demands

of the job. On the other hand, these professionals may possess heightened critical awareness or specialised knowledge in the field of occupational risk prevention, which could amplify their sensitivity to adverse working conditions beyond the scope of objective exposure. It is recommended that subsequent studies give due consideration to these potential intervening variables in order to facilitate a more comprehensive understanding of the mechanisms underpinning these associations.

As regards health variables, the data revealed a strong association between the presence of chronic illnesses and the perception of psychosocial risks, confirming findings from studies linking work-related stress with a greater deterioration of physical and mental health [32]. This relationship can be understood in both directions: Impaired health may increase vulnerability to work-related stress, and constant exposure to psychosocial risks may aggravate pre-existing chronic conditions [33]. In addition, these findings are also aligned with national reports from the National Institute for Occupational Safety and Health (INSST, for its Spanish acronym) [34], which document similar risk patterns in the Spanish healthcare sector. Internationally, studies using the COPSOQ model in countries such as Denmark and Germany have reported comparable psychosocial profiles among nurses [35]. These similarities suggest a structural component in the psychosocial risk burden across healthcare systems, underscoring the need for systemic prevention strategies [36].

Self-perceived health was also found to exert a significant influence: respondents who rated their health status negatively had significantly higher scores on the ISTAS_Enfermería. This result is in line with the research which argues that subjective health perception is a sensitive indicator of general distress and the impact of the work environment on health [37]. In this sense, self-perceived health may function as an early risk marker that allows early preventive intervention mechanisms to be implemented [38].

One of the most consistent factors was the level of perceived stress, which showed a positive and significant correlation with psychosocial risks. This finding reinforces the key role of stress as a cross-cutting variable that interacts with multiple dimensions of both the work and the personal environment [39]. Indeed, accumulating evidence indicates that high levels of stress are associated with an increased likelihood of experiencing emotional exhaustion, interpersonal conflict and absenteeism [40].

The analysis of substance use offers relevant implications. In this study, the regular consumption of benzodiazepines or antidepressants is not interpreted as a psychosocial risk factor in itself, but rather as a possible consequence or coping mechanism in response to adverse work environments [41]. From this standpoint, consumption is conceptualised as a variable associated with exposure to psychosocial risks, rather than as a direct cause of their perception. However, the model shows that these groups had a lower perception of psychosocial risks compared to nonusers, which may be due to the regulatory effect of these substances on anxiety and depressive symptoms, leading to reduced sensitivity to occupational stressors [42]. This

paradox between higher mean score and lower statistical association in the model may reflect compensatory mechanisms mediated by pharmacotherapy. Conversely, the fact that no significant differences were observed in relation to alcohol, tobacco or other substance use may be due to cultural factors and possible under-reporting of responses [43]. This discrepancy between bivariate and multivariate analyses may be explained by the existence of mediating or moderating effects, where the use of psychotropic medication could function as a coping mechanism that temporarily reduces the perception of occupational stressors. From a theoretical perspective, pharmacological strategies might dampen the emotional response to workplace demands, thereby attenuating subjective risk appraisal even in the presence of objectively adverse conditions. This is consistent with the cognitive appraisal theory of stress [44], which suggests that individual responses to stress depend not only on environmental demands but also on perceived coping resources. In this context, medication use could act as a psychological buffer, reducing the intensity of risk perception without necessarily improving the work environment. Further studies should explore these potential mediation or moderation pathways using structural equation modelling or longitudinal designs to better understand the dynamic interplay between coping strategies and psychosocial risk perception.

The number of sick leaves in the last year also showed a statistically significant relationship, but in the opposite direction to that expected: Those who had had two or more sick leaves showed a lower perception of psychosocial risks in the multivariate model. This finding can be interpreted from an adaptive perspective, in which sick leave functions as a psychological escape mechanism from distress, thereby facilitating a temporary disconnection from the stressful environment and consequently reducing the perception of risk upon return to work [45]. An alternative interpretation is that, following a critical phase that results in sick leave, individuals develop coping mechanisms or receive external interventions, such as institutional support or pharmacological treatment that influence their subsequent perception [46]. In this case, regular use of psychotropic drugs could contribute to emotional or cognitive regulation that mitigates the subjective assessment of the work environment, thus modulating the perception of risk without necessarily causing an objective change in working conditions [47]. Such mechanisms could be moderating or mediating the relationship between exposure to stressors and subjective perception of risk. Consequently, a diminished perception of risk does not inherently signify an enhancement in the work environment; rather, it constitutes a regulatory mechanism—adaptive or otherwise—that influences its evaluation.

Overall, the results indicate that the perception of psychosocial risks is the product of a complex interaction between individual factors (age, health and use of psychotropic drugs) and the work environment (level of responsibility, control and organisational support). This pattern is consistent with the demand–control–support (DCS) model, which posits that environments characterised by high demands, limited control over one's work and

inadequate social support can lead to increased work stress and an elevated risk of burnout, particularly in caring professions such as nursing [48]. This correlational study of 1063 Japanese nurses found that high job demands and low control, as well as limited support from supervisors, were significantly associated with both the intention to leave the job and depressive symptoms.

The findings of this study have implications for both the theoretical understanding of psychosocial risks and their practical application in the management of healthcare staff. From an ethical perspective, the utilisation of this information should be guided by the principle of promoting support interventions for professionals who may be at risk. Such interventions may include mentoring programmes, reviews of working conditions or priority access to mental health resources. These measures are intended to foster an inclusive environment and should not be employed in a manner that could lead to the exclusion of these professionals from promotions or assignments. Accordingly, healthcare institutions bear the responsibility to employ these data in accordance with ethical criteria founded upon the principles of justice and nondiscrimination and to ensure the confidentiality of personal data. Moreover, collective well-being ought to be prioritised over individual performance.

In the field of healthcare, it is crucial to identify the specific factors associated with a higher perception of psychosocial risks. This is essential for designing more targeted and effective preventive strategies that focus on the well-being of nursing professionals. The findings of this study indicate that perceived stress emerges as a particularly influential factor, demonstrating a strong positive correlation with the perception of psychosocial risk ($\text{Tau-b} = 0.318$; $p < 0.001$). This finding indicates that interventions should prioritise the development of robust stress management programmes and the provision of accessible psychological support. Such programmes should focus on the development of resilience, the identification of coping strategies and the promotion of access to mental health services within the context of occupational health.

Furthermore, the significant association with the presence of chronic diseases ($\bar{x} = 1.841$) and poor self-perceived health ($\bar{x} = 2.292$ for poor health; $\bar{x} = 2.064$ for fair health) suggests the need for integrated health surveillance programmes. These programmes should not only monitor physical health but also actively address the interaction between physical well-being and psychological distress, thereby facilitating early interventions for nursing professionals at risk.

Regarding the use of psychoactive substances, the findings of this study reveal that regular users of benzodiazepines ($\bar{x} = 2.031$) and antidepressants ($\bar{x} = 2.095$) reported higher mean scores in the perception of psychosocial risks. However, the multivariate model indicated a lower perception of psychosocial risks in these groups ($\beta = -0.059$ for benzodiazepines), which, as discussed, could reflect a compensatory or regulatory effect of pharmacotherapy. This complex finding suggests that interventions should not

focus solely on substance use as a primary risk factor, but rather on identifying and addressing the underlying psychosocial stressors that may lead to the use of these substances as a coping mechanism. This underscores the importance of establishing confidential support systems and access to mental health resources within the workplace, with the aim of addressing the underlying causes of distress rather than merely the symptoms. A balanced approach is essential for ensuring that resources are allocated to combat the most impactful determinants, while also offering support for related coping behaviours.

Finally, although the number of sick leaves in the last year showed a statistically significant relationship in the bivariate analyses ($\bar{x} = 2.027$ for two or more sick leaves), the multivariate model revealed a negative association ($\beta = -0.135$; $p < 0.001$). This finding suggests that sick leave could function as an adaptive coping mechanism, providing temporary relief from stressful environments and thus temporarily reducing the perception of risk upon return to work. Therefore, management strategies should not only focus on reducing absenteeism but also on understanding the underlying reasons for sick leave, such as unaddressed psychosocial stressors, in order to implement meaningful changes in the work environment to prevent the accumulation of distress.

Despite the significant results obtained, the explanatory power of the multivariate model remains limited ($R^2 = 29.6\%$), suggesting that important factors influencing the perception of psychosocial risks were not captured. Future research should incorporate key organisational and occupational variables such as type of employment (permanent vs. temporary), work shift patterns (e.g., night shifts and rotating shifts), workload and management style, as these have been consistently associated with job strain and psychological distress in nursing contexts. The inclusion of theoretical frameworks such as the job demands–resources (JD–R) model [49] or the ERI model [50] may also enhance explanatory depth. These frameworks allow for a more comprehensive understanding of how demands, control, support and perceived fairness in reward structures interact to shape workers' perceptions of stress and risk. Integrating such models could help clarify the complex interplay between individual and organisational determinants of psychosocial risk perception in healthcare environments.

4.1. Limitations. This study has some limitations to consider when interpreting the results. Firstly, the statistical model used managed to explain only a part of the variability in the perception of psychosocial risks (22.4%), which indicates that there may be other contributing factors that were not included in the analysis and that also influence this perception. This shows the complexity of the issue and suggests that it is a reality influenced by multiple elements.

These excluded variables encompass key occupational factors such as years of work experience, type of contract, work shift or workload, which have the potential to act as confounding variables in the observed associations,

particularly in relation to age, educational level or marital status. The absence of these indicators limits the ability to fully interpret the mechanisms underlying the results obtained.

Additionally, as this was a cross-sectional study, the data were collected at a single point in time, which does not allow establishing cause and effect relationships between the variables analysed. For example, even if a relationship between stress, health status or medication use and risk perception was observed, it is not possible to be certain about which occurs first or how the different factors influence each other. The use of a nonprobabilistic snowball sampling strategy constitutes a major limitation of the study. This approach may have introduced selection bias by favouring the recruitment of participants with similar sociodemographic or professional characteristics, limiting sample diversity. Additionally, the lack of control over the recruitment chain restricts reproducibility and generalisability of the findings to the wider nursing population. Although the instrument included eligibility screening and data were reviewed for internal consistency, no IP filtering or direct tracking measures were implemented, which represents a further risk to sample integrity. These issues are consistent with the previous research noting the methodological constraints of snowball sampling in health studies [51].

The questionnaire was also voluntary and self-administered, which may have led to a participation bias. Respondents who perceived themselves to be more affected by their employment situation may have been more motivated to respond, which could have influenced the results and the representativeness of the sample. One important limitation of this study lies in the use of nonprobabilistic snowball sampling, which may introduce selection bias and reduce the national representativeness of the sample. Although participation was obtained from nurses working in diverse healthcare settings and across all autonomous regions of Spain, the absence of random sampling procedures limits the generalisability of the findings. Future studies should aim to use stratified or probabilistic sampling methods and consider disaggregating the data by autonomous region or institutional setting to allow a more detailed assessment of regional or organisational variability.

Although the number of participants was high and they came from different regions of Spain, there was a large proportion of women (87.3%), which partly reflects the reality of the nursing sector. However, this may limit the generalisability of the findings to other work settings or to groups of different compositions.

Due to the remarkably low number of participants reporting regular use of substances such as heroin or amphetamines, results related to these variables should be interpreted with caution. No inferential analyses were conducted for these subgroups due to insufficient statistical power.

Finally, questions on sensitive issues, such as substance use, may have been subject to some respondents' vague answers, either due to forgetfulness or to difficulty in talking openly about these issues. This may have affected the reliability of the data obtained.

4.2. Future Research and Perspectives. To address these limitations, future research should use follow-up designs over time. Such research should be complemented by qualitative methods and employ more comprehensive models that include organisational and psychosocial factors not addressed in this study.

The results of this study provide relevant evidence for different levels of intervention within the healthcare setting. Thus, this study facilitates action at the care and managerial levels and in the educational context.

At the care level, by identifying the factors associated with a higher perception of psychosocial risks, more effective preventive strategies can be designed, focussing on the well-being of nursing professionals. For example, findings on the impact of work-related stress, self-perceived health and the use of psychotropic drugs suggest the need to implement psychological support and stress management programmes for nurses.

At the management level, the data obtained can contribute to better human resources planning. When designing shifts, workloads or occupational health programmes, the sociodemographic characteristics of the staff (age, marital status, level of education and history of sick leave) should be incorporated into the planning. Also, evidence on the relationship between the level of education and the perception of risks highlights the importance of promoting ongoing professional development. This is so not only from an academic perspective, but this professional growth can also be a tool for providing professionals with coping and resilience skills.

In the educational context, the results point to the need to integrate content related to stress management, self-care and psychosocial factors in a more comprehensive manner in the undergraduate and postgraduate nursing curricula. In this way, future professionals would be better prepared to face the challenges inherent to their daily practice when they join the labour market.

5. Conclusion

The results of this study reveal that the perception of psychosocial risks among nurses in Spain is influenced by a combination of personal, professional and health-related factors. Variables such as age, marital status, educational level, self-perceived health status, work stress and psychotropic drug use showed a significant association with higher levels of psychosocial risk.

All these findings highlight the need for a holistic approach to the prevention and management of psychosocial risks that addresses both the conditions of the work environment and the individual characteristics of professionals. Similarly, emphasis is placed on the importance of promoting institutional policies aimed at the emotional well-being of nursing professionals through psychological support programmes, ongoing training and organisational strategies adapted to the specific needs of the nursing staff.

Despite the limitations of the explanatory model, the study data provide a solid basis for future research and for the design of more specific interventions in the healthcare, organisational and educational spheres. By addressing these

factors, not only will the health of the nursing staff be improved but also the quality of care provided to the population.

Data Availability Statement

All data are available under reasonable request to the corresponding author.

Conflicts of Interest

The authors declare no conflicts of interest.

Funding

No funding has been perceived.

Supporting Information

Additional supporting information can be found online in the Supporting Information section. (*Supporting Information*)

Supporting Table 1: Dimensions and specific items of the 20-item SUSESO/ISTAS21 short-version questionnaire in Spanish and English.

Description of Supporting Table 1: Supporting Table 1 presents the 20-item SUSESO/ISTAS21 short-version questionnaire in Spanish and English. It covers five dimensions: psychological demands, active labour and skills development, social support and leadership quality, compensation and double presence. Each item is scored on a five-point Likert scale from “Always” to “Never.”

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