

# Predictors of Quality of Work Life in Health Care Workers at Adult Critical Care Units: A Cross-sectional Study

Laura del P Quinones-Rozo<sup>1</sup>, Gladys Eugenia Canaval-Eraza<sup>2</sup>, Lina M Sandoval-Moreno<sup>3</sup>

Received on: 27 January 2024; Accepted on: 20 February 2024; Published on: 30 March 2024

## ABSTRACT

**Aim and background:** Satisfaction with the quality of work life reflects the inadequate distribution of the workforce in critical care units and is not enough; on many occasions, they work in precarious conditions and with high levels of physical, emotional, spiritual, and social demands, impacting the quality of care.

**Aim:** To identify predictors of the quality of work life of healthcare workers in adult critical care units (ACCU).

**Materials and methods:** Quantitative study, cross-sectional analytical design with stratified two-stage sampling; three instruments were applied to 209 healthcare professionals in adult critical care units in different sites in a region of Colombia, concerning Quality of Life at Work—GOHISALO, Copenhagen Psychosocial Questionnaire—COPSOQ and Professional Quality of Life—ProQoL V. Multiple ordinal logistic regression was performed with exposure variables from the COPSOQ and ProQoL domains; the outcome variables were the dimensions of the Quality of Work Life instrument. Ethical standards for research involving human subjects were ensured.

**Results:** According to the results of the multiple logistic models, quality of work life is predicted by job integration and predictability (OR = 6.93; 95% CI = 3.6–13.9), leisure time management and double presence (OR = 4.5; 95% CI = 1.22–8.79). Both job satisfaction and job security are related to leadership quality (OR=3.82; 95% CI = 2.27–6.55 and OR = 3.18; 95% CI = 1.22–8.79), respectively.

**Conclusions:** The quality of work life of healthcare workers in adult intensive care units is predicted by quantitative demands, double presence, emotional demands, work pace, predictability, vertical trust, and quality of leadership.

**Keywords:** Compassion fatigue, Critical care, Health workforce, Psychosocial risk, Quality of life, Work.

*Indian Journal of Critical Care Medicine* (2024): 10.5005/jp-journals-10071-24681

## HIGHLIGHTS

The structure of the data allows predicting situations of health workers from the measurement of the QWL and these in turn can be used to plan strategies that motivate health personnel to remain in their work fields.

## INTRODUCTION

The Quality of Life at Work (QWL) of the HRH in adult critical care units (ACCU), has been studied with greater frequency in the last decade<sup>1,2</sup> given the interest in the high level of demand and complexity in this area of care, with recognition as the first line of care during the COVID-19 pandemic and in the upcoming health emergencies.<sup>3,4</sup> The quality of life in health care work, according to some authors, is influenced by multiple external and internal situations that impact on the individual as well as group level and can have a great influence on patient's health outcomes such as death or therapeutic failures.<sup>5</sup> Other consequences are concerns for the health sector include the intention to rotate shifts,<sup>6</sup> migrate to another country,<sup>7</sup> inadequate distribution of HRH especially in emerging or low-resource countries,<sup>8</sup> as well as increased rates of HRH suicides.<sup>9,10</sup>

From this situation, researchers have created diverse instruments that seek either, from the lens of health promotion, to assess QWL or from disease prevention, to assess exposure to psychosocial risks (EPR) and compassion fatigue (CF), among others.

Following this analysis, it seems that insufficient evidence is available in databases as to whether QWL is a consequence of EPR or CF or vice versa.

<sup>1</sup>Docente Catedrático, Programa de Enfermería, Grupo APS, Universidad Libre y Grupo PROMESA, Universidad del Valle, Cali, Valle del Cauca, Colombia

<sup>2</sup>Grupo PROMESA, Escuela de Enfermería, Universidad del Valle, Cali, Valle del Cauca, Colombia

<sup>3</sup>Instituto CISALVA, Facultad de Salud, Universidad del Valle, Cali, Colombia

**Corresponding Author:** Laura del P Quinones-Rozo, Docente Catedrático, Programa de Enfermería, Grupo APS, Universidad Libre y Grupo PROMESA, Universidad del Valle, Cali, Valle del Cauca, Colombia, Phone: +573185472106, e-mail: laura.pilar.quinones@correounivalle.edu.co

**How to cite this article:** Quinones-Rozo LP, Canaval-Eraza GE, Sandoval-Moreno LM. Predictors of Quality of Work Life in Health Care Workers at Adult Critical Care Units: A Cross-sectional Study. *Indian J Crit Care Med* 2024;28(4):355–363.

**Source of support:** Nil

**Conflict of interest:** None

The QWL is defined by the authors of the instrument used in this study as a "multidimensional concept that is integrated when the worker, through employment and under their own perception, sees covered the following personal needs: institutional support, security and integration to the job and job satisfaction, identifying the well-being achieved through their activity at work and the personal development achieved, as well as the management of their free time."<sup>11</sup>

Along these lines, EPR to identify and assess the working conditions related to work organization that may be negative

for health, based on the concept of physiological, emotional, cognitive, and behavioral stress related to the job.<sup>12</sup> This can lead to compassion fatigue, described in the literature as the “emotional cost” of caring for the suffering of the patients, composed of burnout (BO) and secondary traumatic stress (STS). Its counterpart compassion satisfaction (CS) refers to “the feeling of accomplishment derived from the efforts taken to help another person.”<sup>13,14</sup>

This study represents the relevance in the healthcare context, as it makes visible the impact on the health of healthcare workers, which can influence the quality of patient treatment and compliance with regulations. Its promotion and improvement are crucial aspects for the success and effectiveness of health practices, as by identifying errors, improvement plans could be established in the following areas: health and well-being of staff, productivity and performance, retention of human resources, patient satisfaction, and regulatory compliance.

The aim of the study was to identify predictors of the quality of work life of healthcare workers in ACCU, with a perspective to contribute to known situations or exposures that result in expected problems and that can be addressed through evidence-based strategies.

## MATERIALS AND METHODS

### Study Design and Sample

Quantitative study, cross-sectional analytical design were performed during the period September 2020 to August 2021; based on the checklist of STrengthening the Reporting of OBServational studies in Epidemiology (STROBE).<sup>15</sup> The instruments were applied to nurses’ auxiliaries, nurses, physicians and physiotherapists, or respiratory therapists who work at least part-time and have more than 1 year of experience in one of the 20 adult intensive care units in the department of Valle del Cauca, Colombia.

To select the observation units, a stratified two-stage sampling was used:

*First stage:* By number of bed hospital in public and private institutions, from which three tiers emerged, identified as follows: (I) with a maximum of 15-bed, (II) between 16-bed and 25-bed, and (III) with more than 26-bed.

*Second stage:* The data are weighted to determine the number of HRH in each tier with a confidence of 94% and a sampling error of 6%. The resulting sample was 197 plus 6% probable losses for a total of 209.

The data collection was conducted through a link created on the Survio® platform that included the informed consent form, which had to be clicked on after being read as accepted. The process was carried out in three variables, the first, indirectly with publications and massification carried out by associations of human resources in nursing (91 questionnaires) who agreed to participate with the use of their own information/communication technologies from social media and e-mails; the second, by accessing the HRH directly in public and private institutions with authorized databases, selected in a simple random manner; and the third, using contacts with personal referrals from one of the authors.

The last two forms of data collection (172 questionnaires) were completed using a videoconferencing platform scheduled, showing the screen, and completing the instrument using the same Survio® link, and were not recorded. For this last data collection process, two undergraduate nursing students were recruited as research

interns who signed a confidentiality agreement and were previously trained for this process.

### Instruments

*Quality of Life at Work “QWL—GOHISALO” short version.* The instrument was designed in Mexico, with a health sector population: physicians and nurses in 2010, validated in Spanish, English, and Portuguese, with psychometric properties that measure the construct through 31 items in 7 dimensions: institutional support for work, job security, job integration, job satisfaction, well-being achieved through work, personal development, and management of leisure time. It uses a Likert scale from 0 to 4. With an Alpha-Cronbach of 0.91,<sup>11</sup> which ensures high reliability and meets the validation criteria with respect to content, construct, and criterion. The name of the file comes from the last names of the creators of the instrument.

*Instituto Sindical de Trabajo, Ambiente y Salud—ISTAS21 is a version of the Copenhagen Psychosocial Questionnaire “CopSoQ,”* developed and adapted by Moncada, Lloren, and Kristensen in 2002. It contains three versions: short version, medium size, and long questionnaire. For this research the short version was used for measuring 15 dimensions with 30 questions. The psychometric properties of the instrument comply with the overall internal consistency with a Cronbach’s  $\alpha$  0.9 and Kappa concordance between versions.<sup>12</sup> Its answers are on a Likert scale from 0 to 4. When applying the instrument, it is expected to give as a result the risk of exposure based on whether it is favorable or unfavorable for health.

*Professional Quality of Life Scale “ProQol,”* developed by Hudnall Stamm in 2002, is the most widely used measure of the positive and negative effects of collaborating with people who have experienced extremely stressful events. It contains 30 questions which assess three scales evaluating CS, CF divided into BO and STS, with a Likert-type measurement scale from 1 to 5.<sup>16</sup> This instrument has been translated into Spanish with its corresponding construct validity, as well as psychometric properties that make it dependable and consistent to be applied. In the literature, Alpha-Cronbach values of 0.87, 0.82, and 0.72 are found for compassion fatigue, CS and burnout, respectively.<sup>17</sup>

### Statistical Analysis

It was performed a quality control on the databases, verifying the presence of a typical, extreme, repeated, and missing data. Followed by an exploratory analysis, the behavior of the data was evaluated, and exposure variables were analyzed according to the level of measurement. Categorical variables were analyzed through proportions and numerical variables through the estimation of average or median depending on whether the normality criteria were met.

The level of quality of life was analyzed by domains, for this purpose, a multiple ordinal logistic regression was carried out considering the CopSoQ and ProQoL domains as exposure variables, the outcome variables were the dimensions of the QWL—GOHISALO instrument: institutional support, job security, job integration, job satisfaction, personal development of the worker, and management of leisure time.

The categories in each of the QWL domains were High, Medium, and Low as defined by the literature and the authors of the instrument.<sup>11</sup> The well-being dimension was analyzed through a multiple logistic regression, considering that the highest proportion

of subjects presented a high level of well-being.<sup>18</sup> The variable selection process for the final multiple models was performed using the smart (backward) stepwise method using the Akaike criterion as an indicator of model adjustment. The final models were defined with the variables that had a statistical significance less than  $p < 0.20$  and those that were considered theoretically relevant.<sup>19</sup> The assumption of proportionality of the model was assessed through a likelihood ratio test. The analyses were performed in R Software.

This study was developed considering the international recommendations of the Nuremberg code, those of CIOMS—Council for International Organizations of Medical Sciences, the local regulation on research with human beings Law 8430. The HRH who participated in the study read and accepted the informed consent digitally. It was approved by the institutional ethics committee with number 015-020 internal code 143-020 on August 24, 2020.

## RESULTS

Out of 263 HRH participants, 24 incorrectly completed the instrument, 30 did not agree to participate for reasons of time, illness, lack of interest in the subject, incorrect telephone numbers or recent resignation. After cleansing the database, 209 observational units remain, of which the largest proportion (71.77%) are women, with an average age of 33 years, (Range: 20–65). The health workforce reports an average total year of study of 17.6 ( $\pm 5.12$ ) including elementary, middle school, and technical or higher education, while the average number of years of tenure is 4.8 ( $\pm 5.6$ ) and the average total hours worked per week is 50.6 ( $\pm 10.3$ ). The majority are single with 62.20%, in this population, the highest level of studies reached is a bachelor's degree with 59.3% followed by the technical level with 22.5% related to the participating nursing auxiliaries.

According to the data collected in this research, the instrument with the highest reliability coefficient, Cronbach's  $\alpha$ , is the QWL-GOHISALO with 0.92. It was followed by the CopSoQ with 0.84 and the ProQoL-IV with 0.74.

According to the results the HRH is satisfied in three out of four dimensions of the QWL with an average of 17 ( $\pm 4.1$ ) for institutional support (57.9%), 14 ( $\pm 3.6$ ) for job security (66.5%) and 22 ( $\pm 2.5$ ) for well-being achieved through work (67.9%). To see the comparative percentage distributions between these dimensions (Fig. 1).

The results in relative frequencies (Fig. 2) for EPR related to unfavorability are mostly represented in work pace (97.6%; 204), quantitative demands (88.04%; 184), job insecurity (83.25%; 174) and insecure job's conditions (81.82%; 171).

Regarding the dimensions classified as intermediate (neither favorable nor unfavorable for health), the following results were found to influence on work (39.2%; 82) and predictability (36.8%; 77).

The dimensions that were favorable for health are described (Fig. 3) from highest to lowest with role clarity, personal development (93.78%; 196 in each dimension) and meaning of work (85.17%; 178).

The average scores obtained by the HRH of the ACCUs for CS were 43.5 ( $\pm 5.3$ ), BO 20.7 ( $\pm 7.7$ ) and STS 16.9 ( $\pm 8.9$ ). Figure 4 shows the relative frequencies of the three dimensions.

## Results of Multiple Ordinal Logistic Regressions

The models proposed between QWL and ProQoL do not show levels of statistical significance that relate them. This relationship between the QWL and CopSoQ dimensions is described below, see details in Tables 1 and 2.

The multiple model showed being satisfied with:

*Institutional support* is predicted by a vertical trust level of 5–6 (OR: 1.96,  $p = 0.03$  95% CI: 1.06–3.65), while a double presence level of 4–5 (OR: 0.47,  $p = 0.04$ , 95% CI: 0.23–0.98), emotional demands of 4–5 (OR: 0.32,  $p = 0.00$ , 95% CI: 0.18–0.56) and of justice from 5 to 6 and from 7 to 8 (OR: 0.26, 95% CI: 0.12–0.54,  $p = 0.00$ ; OR: 0.15,  $p = 0.00$ , 95% CI: 0.04–0.46), respectively; are associated with lower level of institutional support.

*Job security* is predicted by leadership quality at the level of 5–6 (OR: 3.0  $p = 0.00$  95% CI: 1.57–5.80), while emotional demands of 4–5 (OR: 0.4, 95% CI: 0.21–0.66,  $p = 0.00$ ), role clarity of 8 (OR: 0.3, 95% CI: 0.13–0.78,  $p = 0.01$ ) are associated with lower level job security.

*Job integration* is predicted by a predictability level of 5–6 (OR: 6.93, 95% CI: 3.6–13.9,  $p = 0.00$ ), a vertical trust of 5–6 (OR: 0.3–0.12, 95% CI: 1.72–5.79), while a level of quantitative demands 2–3 (OR: 0.44, 95% CI: 0.22–0.86,  $p = 0.00$ ), of emotional demands 4–5 (OR: 0.47, 95% CI: 0.28–0.81) are associated with less integration with the job.

*Job integration* is predicted by a level of 5–6 in leadership quality (OR: 3.82, 95% CI: 2.27–6.55,  $p = 0.00$ ), while an influence level of 6–8 is associated with lower job satisfaction (OR: 0.46, 95% CI: 0.28–0.76,  $p = 0.02$ ).

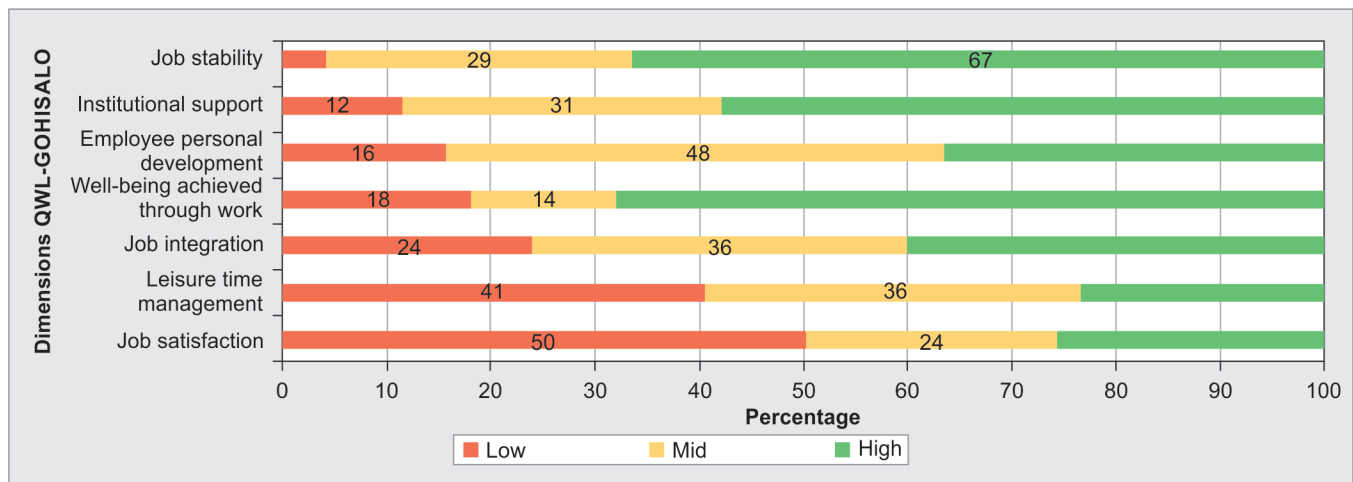


Fig. 1: Distribution of QWL-GOHISALO scores of the HRH working in the ACCUs of Valle del Cauca – Colombia 2020–2021

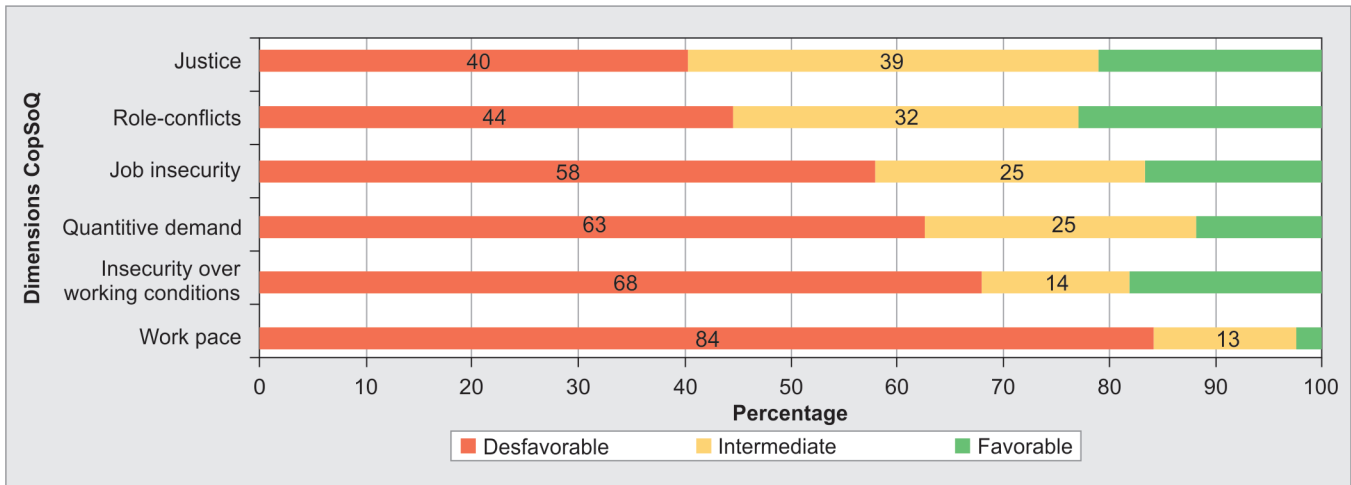


Fig. 2: Dimensions with unfavorable CopSoQ – ISTAS 21 measurement of the HRH working in the ACCU of Valle del Cauca – Colombia 2020–2021

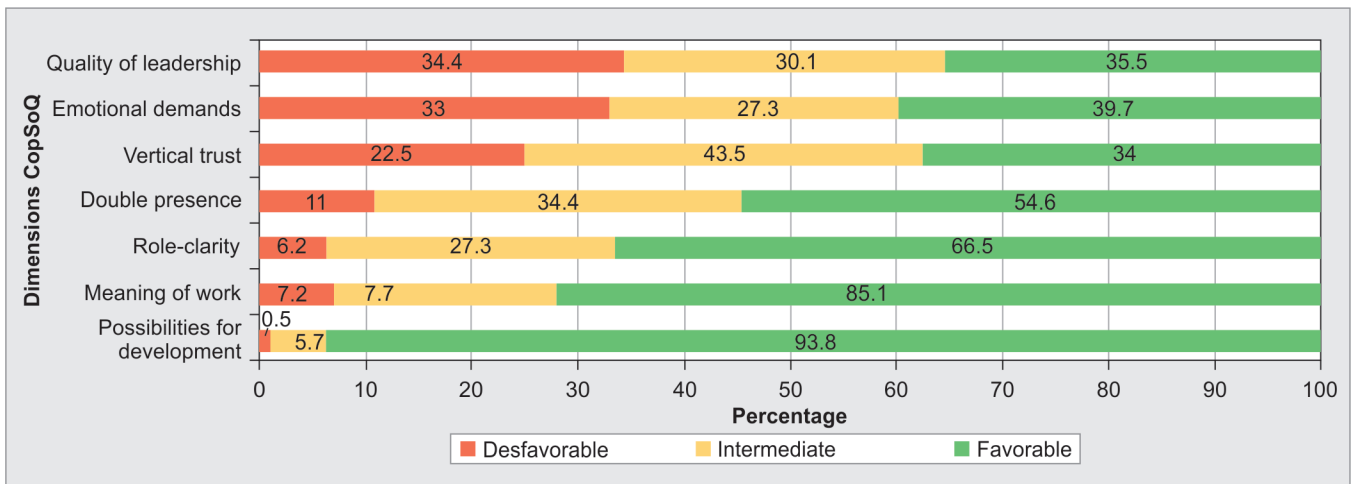


Fig. 3: Dimensions with favorable results in the CopSoQ – ISTAS 21 measurement of HRH working in the ACCUs of Valle del Cauca – Colombia 2020–2021

Meanwhile, the multiple model for the other dimensions showed that to be satisfied with:

*Well-being achieved through work* is predicted by an influence level of 4–5 (OR: 1.97, 95% CI: 0.98–4.86,  $p = 0.05$ ), a role clarity level of 8 (OR: 3.18, 95% CI: 1.22–8.79,  $p = 0.02$ ), on the other hand, a vertical confidence level of 5–6 (OR: 0.41, 95% CI: 0.19–0.83,  $p = 0.01$ ) and a leadership quality level of 5–6 is associated with lower well-being achieved from work (OR: 0.29, 95% CI: 0.11–0.67,  $p = 0.00$ ).

*Employee personal development* is predicted by a job meaning level of 6–7 (OR: 3.49, 95% CI: 1.65–7.75,  $p = 0.00$ ), while an emotional demands level of 4–5 (OR: 0.34, 95% CI: 0.20–0.56,  $p = 0.00$ ) and a role conflict level of 4–5 (OR: 0.5, 95% CI: 0.29–0.85,  $p = 0.01$ ) are associated with lower personal development.

*Leisure time management* is predicted by a double presence level of 4–5 (OR: 4.5, 95% CI: 2.65–15.35,  $p = 0.00$ ), and a quantitative demands level of 2–3 (OR: 3.29, 95% CI: 1.65–6.90,  $p = 0.00$ ) although a predictability level of 5–6 is associated with less leisure time management (OR: 0.49, 95% CI: 0.28–0.84,  $p = 0.01$ ).

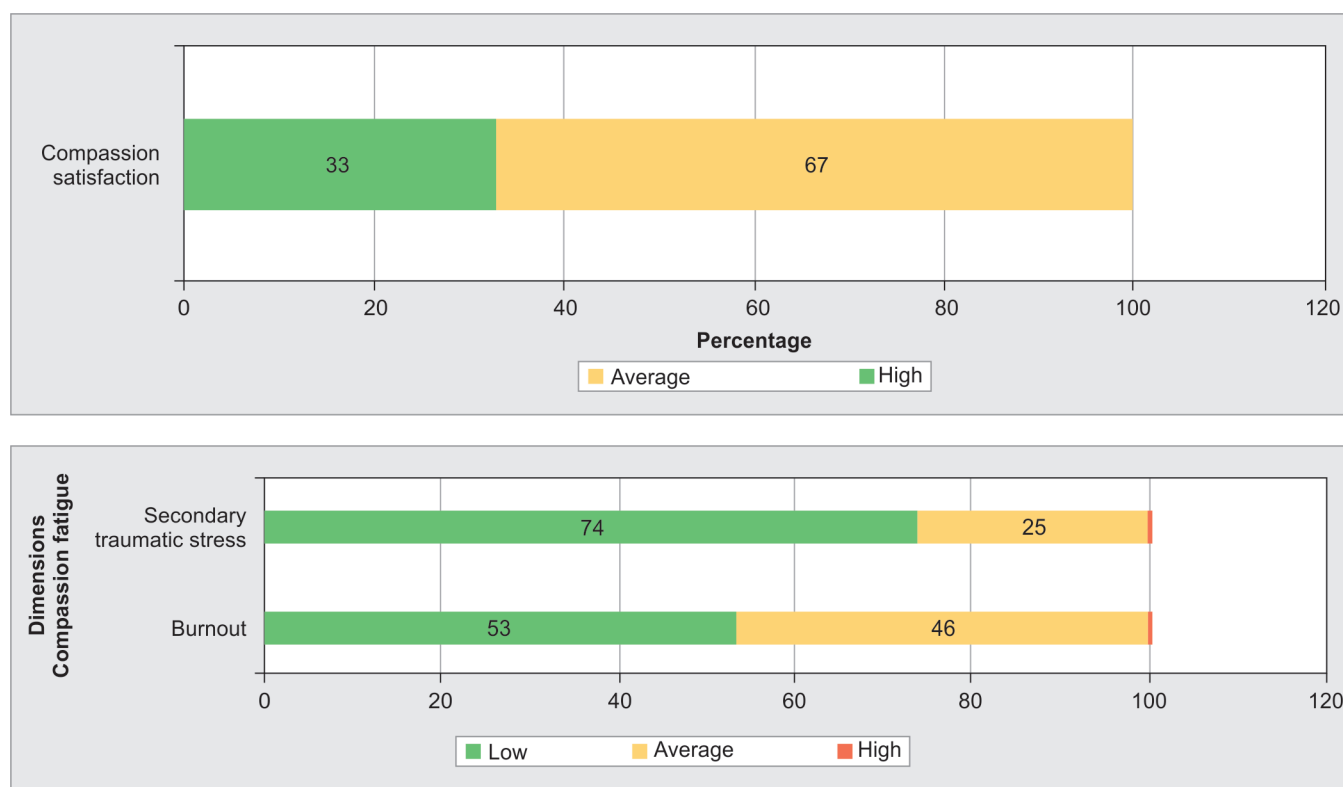
## DISCUSSION

The response rate for the instruments was 80%, a value like the response rate reported by previous studies assessing quality of life through similar methodological designs and in this population.<sup>20–22</sup>

### Exposure to Psychosocial Risks and Quality of Work Life

In relation to the findings on psychosocial risks (PSR) assessed in this study through the CopSoQ instrument short version, similarities are found with other research<sup>12,23,24</sup> regarding the unfavorability for health in dimensions that scored greater than or equal to 50% with a reference cut-off of 33.3% of the HRH in ACCU and as “main problematic exposures” are insecurity job-related, working conditions, quantitative demands and work pace.

“Other problematic exposures” (red) and considered unfavorable for health between 49 and 33.3% found in this research are justice, role conflict, predictability, and influence.



**Fig. 4:** Percentage according to distribution in the low, average, and high classification, obtained in the three dimensions of the ProQoL-V, in the HRH working in the ACCUs of Valle del Cauca – Colombia 2020–2021

The findings that are considered problematic health exposures in this research have similar results across other research<sup>3,25,26</sup> further showing that those with levels unfavorable are more likely to experience violence, harassment, and musculoskeletal pain or as in other research are stated as predictors of work-related fatigue due to work overload<sup>26,27</sup> or intention to leave their position.<sup>28</sup>

While the favorable exposure (green) that supposes protective factors against the other stressful exposures for HRH in ACCUs is reflected in scores higher than 33.3% in emotional demands, vertical trust, double presence, role clarity, meaning of work, possibility of development and quality of leadership.

This allows inferring that there are significant levels of exposure that endanger the health of the HRH of ACCUs in the work environment with some protective factors that try to balance the psychosocial risk to which these healthcare workers are exposed.

Regarding the divergent relationship found between a lower level of institutional support and the intermediate and favorable level of the justice domain, it can be explained as the first being a dimension evaluated with the QWL-GOHISALO instrument that assesses aspects on the work process, job supervision, support from superiors to perform the job, the way they are evaluated for the work they perform, opportunities of promotion and autonomy<sup>11</sup> while the justice dimension from PSR highlights characteristics on the equal treatment of workers in situations that require decision-making and their potential participation in conflicts, the distribution of tasks or job promotions.<sup>12</sup> Therefore, this hypothesis requires further studies that will go deeper into the subject because for the present moment and in the databases reviewed, there is no evidence in the scientific literature to refute or support this.

To the date, no studies were found that evaluated the predictors of the CopSoQ scale of PSR and the relationship with the QWL-GOHISALO scales in which there is evidence of significant statistical dependence between some of the dimensions; however, in a scientific article is postulated theoretical complementarity on these two ways to maintain the efficiency of institutional productive means in health through disease prevention (PSR) and health promotion (QWL) of HRH of ACCUs.<sup>29</sup>

The PSRs predict QWL, identifying them facilitates access to optimal QWL in a specific sociocultural and spatiotemporal context that may or may not be sources of malfunction or make life at work pleasant<sup>29</sup> and would be supported by results of this research as there is significant statistical dependence between them and presents a possibility of predicting QWL through PSR. With the idea of transitioning from prevention to promotion in favorable conditions for the construction of a QWL and in compliance with the current regulation of health promotion for the region of the Americas in the context of the SDGs 2019–2030 in its strategic line strengthening health systems and services,<sup>30</sup> it is ideal to support the periodic assessment of the QWL with the PSR evaluation.

### Satisfaction/Compassion Fatigue and Quality of Work Life

The HRH of the ACCUs mostly have high satisfaction for compassion (SC) which relates to their ability to be effective caregivers and reflects commitment to their work.<sup>16</sup> Most of the HRH of the ACCUs score is low for BO but is concerning the 47% who score on average for this category which initially relates to positive feelings about their ability to do their job well, but scoring lower would in principle

**Table 1:** Relationship between institutional support, job security, job integration, and job satisfaction as dimensions of QWL and CopSoQ in HRH working in the ACCUs of Valle del Cauca – Colombia 2020–2021

| Dimensions QWL        | Institutional support |      |                  | Job security |      |                  | Job integration |      |                  | Job satisfaction |      |                  |
|-----------------------|-----------------------|------|------------------|--------------|------|------------------|-----------------|------|------------------|------------------|------|------------------|
|                       | OR                    | p    | 95% CI           | OR           | p    | 95% CI           | OR              | p    | 95% CI           | OR               | p    | 95% CI           |
| Quantitative demands  |                       |      |                  |              |      |                  |                 |      |                  |                  |      |                  |
| Favorable             |                       |      |                  |              |      |                  | 1               |      |                  |                  |      |                  |
| Intermediate          |                       |      |                  |              |      |                  | <b>0.4</b>      | **   | <b>0.22–0.86</b> |                  |      |                  |
| Unfavorable           |                       |      |                  |              |      |                  | 1.6             | 0.11 | 0.89–3.08        |                  |      |                  |
| Double presence       |                       |      |                  |              |      |                  |                 |      |                  |                  |      |                  |
| Favorable             | 1                     |      |                  |              |      |                  |                 |      |                  |                  |      |                  |
| Intermediate          | <b>0.5</b>            | *    | <b>0.23–0.98</b> |              |      |                  |                 |      |                  |                  |      |                  |
| Unfavorable           | 0.8                   | 0.4  | 0.45–1.37        |              |      |                  |                 |      |                  |                  |      |                  |
| Emotional demands     |                       |      |                  |              |      |                  |                 |      |                  |                  |      |                  |
| Favorable             | 1                     |      |                  | 1            |      |                  | 1               |      |                  |                  |      |                  |
| Intermediate          | <b>0.3</b>            | **   | <b>0.18–0.56</b> | <b>0.4</b>   | **   | <b>0.21–0.66</b> | <b>0.5</b>      | **   | <b>0.28–0.81</b> |                  |      |                  |
| Unfavorable           | 1.1                   | 0.93 | 0.59–1.79        | 1.6          | 0.13 | 0.88–3.07        | 0.7             | 0.17 | 0.40–1.17        |                  |      |                  |
| Influence             |                       |      |                  |              |      |                  |                 |      |                  |                  |      |                  |
| Unfavorable           |                       |      |                  |              |      |                  |                 |      |                  | 1                |      |                  |
| Intermediate          |                       |      |                  |              |      |                  |                 |      |                  | 1.01             | 0.92 | 0.60–1.70        |
| Favorable             |                       |      |                  |              |      |                  |                 |      |                  | <b>0.4</b>       | *    | <b>0.28–0.76</b> |
| Meaning of work       |                       |      |                  |              |      |                  |                 |      |                  |                  |      |                  |
| Unfavorable           |                       |      |                  | 1            |      |                  |                 |      |                  | 1                |      |                  |
| Intermediate          |                       |      |                  | 2.3          | 0.05 | 0.96–5.57        |                 |      |                  | 2.1              | 0.28 | 0.87–6.31        |
| Favorable             |                       |      |                  | <b>0.5</b>   | *    | <b>0.22–0.97</b> |                 |      |                  | 0.5              | 0.1  | 0.19–1.16        |
| Role-clarity          |                       |      |                  |              |      |                  |                 |      |                  |                  |      |                  |
| Unfavorable           |                       |      |                  | 1            |      |                  |                 |      |                  |                  |      |                  |
| Intermediate          |                       |      |                  | 1.3          | 0.33 | 0.76–2.31        |                 |      |                  |                  |      |                  |
| Favorable             |                       |      |                  | <b>0.3</b>   | *    | <b>0.13–0.78</b> |                 |      |                  |                  |      |                  |
| Predictability        |                       |      |                  |              |      |                  |                 |      |                  |                  |      |                  |
| Unfavorable           |                       |      |                  |              |      |                  | 1               | 1    |                  |                  |      |                  |
| Intermediate          |                       |      |                  |              |      |                  | <b>6.9</b>      | **   | <b>3.6–13.9</b>  |                  |      |                  |
| Favorable             |                       |      |                  |              |      |                  | 0.7             | 0.17 | 0.42–1.16        |                  |      |                  |
| Vertical trust        |                       |      |                  |              |      |                  |                 |      |                  |                  |      |                  |
| Unfavorable           | 1                     |      |                  |              |      |                  | 1               | 1    |                  |                  |      |                  |
| Intermediate          | <b>2</b>              | *    | <b>1.06–3.65</b> |              |      |                  | <b>3.1</b>      | **   | <b>1.72–5.79</b> |                  |      |                  |
| Favorable             | 0.7                   | 0.2  | 0.41–1.21        |              |      |                  | 0.9             | 0.82 | 0.56–1.58        |                  |      |                  |
| Justice               |                       |      |                  |              |      |                  |                 |      |                  |                  |      |                  |
| Unfavorable           | 1                     |      |                  |              |      |                  |                 |      |                  |                  |      |                  |
| Intermediate          | <b>0.3</b>            | **   | <b>0.12–0.54</b> |              |      |                  |                 |      |                  |                  |      |                  |
| Favorable             | <b>0.2</b>            | **   | <b>0.04–0.46</b> |              |      |                  |                 |      |                  |                  |      |                  |
| Quality of Leadership |                       |      |                  |              |      |                  |                 |      |                  |                  |      |                  |
| Unfavorable           |                       |      |                  | 1            |      |                  |                 |      |                  | 1                |      |                  |
| Intermediate          |                       |      |                  | <b>3.0</b>   | **   | <b>1.57–5.80</b> |                 |      |                  | <b>3.8</b>       | *    | <b>2.27–6.56</b> |
| Favorable             |                       |      |                  | 0.7          | 0.17 | 0.36–1.19        |                 |      |                  | 0.5              | 0.18 | 0.28–0.79        |

Source: Own work \*p < 0.05; \*\*<0.001; The meaning of the values in bold corresponds to the existence of statistical significance between the variables

explain the mood when answering or perhaps, that they have had a bad day. If on reassessment it persists, it may be a cause for concern. Secondary traumatic stress scores are low which show that the HRH manages their relationship with the suffering of others well.

The result of this research shows a high SC and moderate to low BO and STS which explains according to the creator of the scale that this is the most positive result and stands for a Human Resources in Health that receives positive reinforcement from their work. They

**Table 2:** Relationship between achieved well-being, personal development, and leisure time management as dimensions of QWL and CopSoQ in HRH working in the ACCUs of Valle del Cauca – Colombia 2020–2021

| Dimensions QWL        | Well-being achieved through work*** |      |                  | Employee personal development |     |                  | Leisure time management |      |                   |
|-----------------------|-------------------------------------|------|------------------|-------------------------------|-----|------------------|-------------------------|------|-------------------|
|                       | OR                                  | p    | 95% CI           | OR                            | p   | 95% CI           | OR                      | p    | 95% CI            |
| Quantitative demands  |                                     |      |                  |                               |     |                  |                         |      |                   |
| Favorable             |                                     |      |                  |                               |     |                  | 1                       |      |                   |
| Intermediate          |                                     |      |                  |                               |     |                  | <b>3.3</b>              | **   | <b>1.65–6.90</b>  |
| Unfavorable           |                                     |      |                  |                               |     |                  | 1.4                     | 0.3  | 0.79–2.52         |
| Double presence       |                                     |      |                  |                               |     |                  |                         |      |                   |
| Favorable             |                                     |      |                  |                               |     |                  | 1                       |      |                   |
| Intermediate          |                                     |      |                  |                               |     |                  | <b>6</b>                | **   | <b>2.65–15.35</b> |
| Unfavorable           |                                     |      |                  |                               |     |                  | 0.8                     | 0.5  | 0.41–1.46         |
| Emotional demands     |                                     |      |                  |                               |     |                  |                         |      |                   |
| Favorable             |                                     |      |                  | 1                             |     |                  |                         |      |                   |
| Intermediate          |                                     |      |                  | <b>0.3</b>                    | **  | <b>0.20–0.56</b> |                         |      |                   |
| Unfavorable           |                                     |      |                  | 1.5                           | 0.1 | 0.91–2.52        |                         |      |                   |
| Influence             |                                     |      |                  |                               |     |                  |                         |      |                   |
| Unfavorable           | 1                                   |      |                  |                               |     |                  |                         |      |                   |
| Intermediate          | <b>2</b>                            | *    | <b>0.98–4.86</b> |                               |     |                  |                         |      |                   |
| Favorable             | 1.53                                | 0.2  | 0.81–2.88        |                               |     |                  |                         |      |                   |
| Meaning of work       |                                     |      |                  |                               |     |                  |                         |      |                   |
| Unfavorable           |                                     |      |                  | 1                             |     |                  |                         |      |                   |
| Intermediate          |                                     |      |                  | <b>3.5</b>                    | **  | <b>1.63–7.75</b> |                         |      |                   |
| Favorable             |                                     |      |                  | 0.7                           | 0.2 | 0.32–1.29        |                         |      |                   |
| Role-clarity          |                                     |      |                  |                               |     |                  |                         |      |                   |
| Unfavorable           | 1                                   |      |                  |                               |     |                  |                         |      |                   |
| Intermediate          | 0.6                                 | 0.1  | 0.36–1.13        |                               |     |                  |                         |      |                   |
| Favorable             | <b>3.2</b>                          | *    | <b>1.22–8.79</b> |                               |     |                  |                         |      |                   |
| Role-conflicts        |                                     |      |                  |                               |     |                  |                         |      |                   |
| Unfavorable           |                                     |      |                  | 1                             |     |                  |                         |      |                   |
| Intermedia            |                                     |      |                  | <b>0.5</b>                    | *   | <b>0.29–0.85</b> |                         |      |                   |
| Favorable             |                                     |      |                  | 0.7                           | 0.1 | 0.42–1.13        |                         |      |                   |
| Predictability        |                                     |      |                  |                               |     |                  |                         |      |                   |
| Unfavorable           |                                     |      |                  |                               |     |                  | 1                       |      |                   |
| Intermedia            |                                     |      |                  |                               |     |                  | <b>0.5</b>              | *    | <b>0.28–0.84</b>  |
| Favorable             |                                     |      |                  |                               |     |                  | <b>1.6</b>              | *    | <b>1.01–2.65</b>  |
| Vertical trust        |                                     |      |                  |                               |     |                  |                         |      |                   |
| Unfavorable           | 1                                   |      |                  |                               |     |                  | 1                       | 1    |                   |
| Intermediate          | <b>0.4</b>                          | *    | <b>0.19–0.83</b> |                               |     |                  | 0.6                     | 0.06 | 0.33–1.03         |
| Favorable             | 1.1                                 | 0.85 | 0.55–2.00        |                               |     |                  | 1.5                     | 0.1  | 0.92–2.58         |
| Quality of Leadership |                                     |      |                  |                               |     |                  |                         |      |                   |
| Unfavorable           | 1                                   |      |                  |                               |     |                  |                         |      |                   |
| Intermediate          | <b>0.3</b>                          | **   | <b>0.11–0.67</b> |                               |     |                  |                         |      |                   |
| Favorable             | 1.7                                 | 0.15 | 0.82–3.41        |                               |     |                  |                         |      |                   |

Source: Own work. \*p < 0.05; \*\*p < 0.01; \*\*\* Results from a logistic regression model; The meaning of the values in bold corresponds to the existence of statistical significance between the variables

do not have significant concerns about being “stuck” or unskilled at their job, either as individuals or within their organization. The staff of ACCU may benefit from opportunities in continuing education and others related to advancing in their position. They are likely to be compassionate and influential to their work team and their

organization. They are liked by their patients with some degree of empathy.<sup>16</sup>

When comparing these findings with other research, references<sup>31–34</sup> show both similarities and dissimilarities and will be discussed taking into account that there is a large amount of

scientific literature that has studied professional quality of life with the ProQoL, even in care areas that are not ACCU but have been selected for this discussion because they have been conducted in sites with similar levels of physical, emotional and spiritual demands; among them mental health, emergency, oncology or palliative care.

For this study, the results of the ProQoL scale containing two dimensions, CS and CF with its two sub-dimensions with the scales for BO and STS are placed in the lower quartile (25th percentile), like those reported by others research.<sup>31,32</sup>

Other authors<sup>32</sup> show results with average scores below the ones obtained in this study for CS and higher for burnout. On the contrary, in the study by Kolthoff and collaborators,<sup>35</sup> they report an average within the moderate rating for the three ProQoL categories related to chronic sleep deprivation in residents with increased fatigue and high BO rates in a prospective cohort study, associated in the literature with reduced alertness, work productivity, and unfavorable health side effects.

As for the relationship between QWL and professional quality of life assessed with the ProQoL, in this study, it is clear that there is no significant statistical relationship that manages to predict the levels of QWL, but it can establish a support tool as evidenced in another research<sup>31</sup> by explaining through this relationship, how the ability to be compassionate and the risk of job BO are affected, which bring as a consequence alterations in job performance and in the quality of health services, these researchers put special interest in the relationship of BO and insecurity or well-being related to the job.

The current study has some limitations. First, a cross-sectional design was used; a longitudinal study would have been necessary to prove that the variables analyzed have a cause-effect relationship. Second, there may be biases, among them, the social desirability that is present when answering the instruments and the three ways of the information collection. Third, other variables were not analyzed, such as training in coping skills to manage situations of workplace violence. Fourth, there was no direct face-to-face contact with the participants caused by the pandemic, but the management and execution of the fieldwork was conducted using Information and Communication Technology.

## CONCLUSIONS

In this study, low quality of work life is predicted by insecurity about the job, working conditions, quantitative demands, and pace of work. Other problematic exposures considered unfavorable for health found in this research are justice, role conflict, predictability, and influence.

Institutional Support is predicted by a vertical trust level. The lowest level of Institutional Support is associated with double presence, emotional demands, and justice. While job security is predicted by a quality of leadership, where the lowest level of job security is associated with emotional demands and role clarity.

Job integration is predicted by a level of predictability and vertical trust. Lower job integration is associated with level of quantitative demands and emotional demands. In this way, job satisfaction is predicted by the quality of leadership and lower job satisfaction is associated with level of influence.

High CS and moderate to low BO and STS are evidenced.

## Clinical Significance

The implementation of regulated strategies in public health policies based on evidence on the factors that negatively influence the

quality of work life of health professionals is necessary to guarantee their permanence in the service.

Strategies should be aimed at motivating health workers to reduce unfavorable consequences for their mental, spiritual, and physical health, which in turn impact the intention to rotate or leave the profession and the current workforce shortage in health.

## Disclaimer

This manuscript has been published as a preprint on Research Square (link: <https://www.researchsquare.com/article/rs-3750162/v1>) prior to its formal publication in Indian Journal of Critical Care Medicine journal.

## ORCID

Laura del P Quinones-Rozo  <https://orcid.org/0000-0002-8629-1608>

Gladys Eugenia Canaval-Erazo  <https://orcid.org/0000-0001-9841-5084>

Lina M Sandoval-Moreno  <https://orcid.org/0000-0002-8974-4203>

## REFERENCES

1. Pérez Gutiérrez N, Rodríguez Darabos EI. Talento humano en unidades de cuidado intensivo: Adaptación de un modelo de estándares para Colombia basado en la evidencia científica. *Acta Colomb Cuid Intensivo* 2015;15(2):80–102. DOI: 10.1016/j.acci.2015.02.006.
2. Vidal-Blanco G, Oliver A, Galiana L, Sansó N. Quality of work life and self-care in nursing staff with high emotional demand. *Enferm Clin* 2019;29(3):186–194. DOI: 10.1016/j.enfcli.2018.06.004.
3. Valencia-Contrera M, Valenzuela-Suazo S. Psychosocial risks: Main threats to health care workers caused by the COVID-19 pandemic. *Rev Bras Med do Trab* 2022;20(01):147–153. DOI: 10.47626/1679-4435-2022-850.
4. Organización Mundial de la Salud. La OMS pone en marcha una nueva iniciativa para mejorar la preparación frente a pandemias [Internet]. Comunicado de prensa 2023. Available from: <https://www.who.int/es/news/item/26-04-2023-who-launches-new-initiative-to-improve-pandemic-preparedness>.
5. Tarnow-Mordi WO, Hau C, Warden A, Shearer AJ. Hospital mortality in relation to staff workload: A 4-year study in an adult intensive-care unit. *Lancet* 2000;356(9225):185–189. DOI: 10.1016/S0140-6736(00)02478-8.
6. Kaddourah B, Abu-Shaheen AK, Al-Tannir M. Quality of nursing work life and turnover intention among nurses of tertiary care hospitals in Riyadh: A cross-sectional survey. *BMC Nurs* 2018;17(1):43. DOI: 10.1186/s12912-018-0312-0.
7. ILO. World of Work Report “2014 Developing with Jobs” [Internet]. Geneva, Switzerland: ILO; 2014. Available from: [https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms\\_243961.pdf](https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_243961.pdf).
8. ORRH. Mapa de densidad de recursos humanos en salud por cada 10 mil habitantes [Internet]. Observatorio Regional de Recursos Humanos en Salud. Observatorio Regional de Recurso Humano en Salud. Obtenido de; 2013 [cited 2023 Nov 28]. Available from: <https://www.observatoriorh.org/?q=node/242>.
9. Mäulen B. Jedes Leben zählt: Suizid von Anästhesisten [Every life counts: suicide by anesthetists]. *Anaesthetist* 2010;59(5):395–400. DOI: 10.1007/s00101-009-1660-7.
10. Segura Durán OD. Configuración de la UCI y burnout en médicos intensivistas: Una mirada desde la epidemiología social [Tesis doctoral]. Bogotá: Universidad Nacional de Colombia; 2016. Available from: [https://www.researchgate.net/publication/317604946\\_Configuracion\\_de\\_la\\_UCI\\_y\\_burnout](https://www.researchgate.net/publication/317604946_Configuracion_de_la_UCI_y_burnout)



- en\_medicos\_intensivistas\_una\_mirada\_desde\_la\_epidemiologia\_social\_ICU\_configuration\_and\_burnout\_in\_intensive\_care\_physicians\_a\_view\_from\_social\_epidemiology.
11. Moreno MP, Baltazar RG, Beltrán CA, Núñez FE. Fiabilidad y validez factorial del instrumento para medir calidad de vida en el trabajo "CVT-Gohisalo" (versión breve). *Salud Uninorte* [Internet]. 2018 cited 2022;34(1):68–75. Available from: <https://www.redalyc.org/journal/817/81759538007/html/>.
  12. Moncada S, Llorens C, Kristensen TS. Manual para la evaluación de riesgos psicosociales en el trabajo. In: *Manual Método CoPsoQ ISTAS21 versión 2 para la evaluación y prevención de riesgos psicosociales*. ISTAS21 ed. Navarra; 2002.
  13. Figley CR. *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized*. Routledge, New York: Bruner/Mazel; 1995.
  14. Henson CT. "The role of Self-care as it pertains to compassion satisfaction, burnout, and secondary traumatic stress among suicide prevention crisis hotline staff". *Dissertations* 2018. Available from: <https://digitalcommons.wku.edu/diss/150>.
  15. von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP, et al. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: Guidelines for reporting observational studies. *BMJ* 2007;335(7624):806–808. DOI: 10.1136/bmj.39335.541782.AD.
  16. Stamm BH. *ProQOL Concise Manual 2010*;1–78. Available from: [http://www.proqol.org/uploads/ProQOL\\_Concise\\_2ndEd\\_12-2010.pdf](http://www.proqol.org/uploads/ProQOL_Concise_2ndEd_12-2010.pdf)
  17. Hooper C, Craig J, Janvrin DR, Wetsel MA, Reimels E. Compassion satisfaction, burnout, and compassion fatigue among emergency nurses compared with nurses in other selected inpatient specialties. *J Emerg Nurs* 2010;36(5):420–427. DOI: 10.1016/j.jen.2009.11.027.
  18. González-Baltazar R, Hidalgo Santacruz G, León Cortés SG, Contreras Estrada MI, Aldrete Rodríguez MG, Hidalgo González BJ, et al. Relación entre Género y Calidad de Vida Laboral en Profesionales de la Salud. *Psicogente* 2015;18(33):52–65. DOI: 10.17081/psico.18.33.55.
  19. Hair J, Black W, Babin B, Anderson R. *Multivariate Data Analysis*. 7th Edition, New York; Pearson; 2010.
  20. Kelbiso L, Belay A, Woldie M. Determinants of quality of work life among nurses working in Hawassa Town Public Health Facilities, South Ethiopia: A cross-sectional study. *Nurs Res Pract* 2017;2017(5181676):1–11. DOI: 10.1155/2017/5181676.
  21. Alharbi MF, Alahmadi BA, Alali M, Alsaedi S. Quality of nursing work life among hospital nurses in Saudi Arabia: A cross-sectional study. *J Nurs Manag* 2019;27(8):1722–1730. DOI: 10.1111/jonm.12863.
  22. Raeissi P, Rajabi MR, Ahmadizadeh E, Rajabkhan K, Kakemam E. Quality of work life and factors associated with it among nurses in public hospitals, Iran. *J Egypt Public Health Assoc* 2019;94(1):25. DOI: 10.1186/s42506-019-0029-2.
  23. García-Iglesias JJ, Gómez-Salgado J, Ortega-Moreno M, Navarro-Abal Y. Relationship between work engagement, psychosocial risks, and mental health among Spanish nurses: A cross-sectional study. *Front Public Heal* 2021;8:627472. DOI: 10.3389/fpubh.2020.627472.
  24. Wagner A, Nübling M, Hammer A, Manser T, Rieger MA, Luntz E, et al. Comparing perceived psychosocial working conditions of nurses and physicians in two university hospitals in Germany with other German professionals – Feasibility of scale conversion between two versions of the German Copenhagen Psychosocial Questionnaire. *J Occup Med Toxicol* 2020;15(1):26. DOI: 10.1186/s12995-020-00277-w.
  25. Abdul Rahman H, Abdul-Mumin K, Naing L. Psychosocial work stressors, work fatigue, and musculoskeletal disorders: Comparison between emergency and critical care nurses in Brunei public hospitals. *Asian Nurs Res (Korean Soc Nurs Sci)* 2017;11(1):13–18. DOI: 10.1016/j.anr.2017.01.003.
  26. Diehl E, Rieger S, Letzel S, Schablon A, Nienhaus A, Escobar Pinzon LC, et al. Burdens, resources, health and wellbeing of nurses working in general and specialised palliative care in Germany – Results of a nationwide cross-sectional survey study. *BMC Nurs* 2021;20(1):162. DOI: 10.1186/s12912-021-00687-z.
  27. Ismail KM, Malak MZ, Alamer RM. Psychosocial correlates of work-related fatigue among Jordanian emergency department nurses. *Perspect Psychiatr Care* 2019;55(3):486–493. DOI: 10.1111/ppc.12354.
  28. Eriksson A, Jutengren G, Dellve L. Job demands and functional resources moderating assistant and Registered Nurses' intention to leave. *Nurs Open* 2021;8(2):870–81. DOI: 10.1002/nop2.694
  29. Burakova M, Leduc S. Cap 3. Risques psychosociaux, Qualité de vie au travail: Opposition ou complémentarité? De la prévention à la promotion de la santé au travail. In: Lagabrielle y S. Laberon (eds.) *Santé au travail et risques Psychosociaux: Tous Préventeurs ?* [Internet]. Paris: L'Harmattan; 2014. pp. 63–76. Available from: [https://www.researchgate.net/publication/269695565\\_Burakova\\_M\\_Leduc\\_S\\_2014\\_Risques\\_psychosociaux\\_Qualite\\_de\\_vie\\_au\\_travail\\_Opposition\\_ou\\_complementarite\\_De\\_la\\_prevention\\_a\\_la\\_promotion\\_de\\_la\\_sante\\_au\\_travail\\_In\\_C\\_Lagabrielle\\_S\\_Laberon\\_eds\\_Sante\\_au\\_tra](https://www.researchgate.net/publication/269695565_Burakova_M_Leduc_S_2014_Risques_psychosociaux_Qualite_de_vie_au_travail_Opposition_ou_complementarite_De_la_prevention_a_la_promotion_de_la_sante_au_travail_In_C_Lagabrielle_S_Laberon_eds_Sante_au_tra).
  30. OMS. Promoción de la Salud – OPS/OMS | Organización Panamericana de la Salud [Internet]. OPS 2020 [cited 2022 Jun 1]. Available from: <https://www.paho.org/es/temas/promocion-salud>
  31. Cetrano G, Tedeschi F, Rabbi L, Gosetti G, Lora A, Lamonaca D, et al. How are compassion fatigue, burnout, and compassion satisfaction affected by quality of working life? Findings from a survey of mental health staff in Italy. *BMC Health Serv Res* 2017;17(1):755. DOI: 10.1186/s12913-017-2726-x.
  32. Ruiz-Fernández MD, Pérez-García E, Ortega-Galán ÁM. Quality of life in nursing professionals: Burnout, fatigue, and compassion satisfaction. *Int J Environ Res Public Health* 2020;17(4):1253. DOI: 10.3390/ijerph17041253.
  33. Wentzel DL, Brysiewicz P. A survey of compassion satisfaction, burnout and compassion fatigue in nurses practicing in three oncology departments in Durban, South Africa. *Int J Africa Nurs Sci* 2018;8:82–86. DOI: 10.1016/j.ijans.2018.03.004.
  34. Yılmaz G, Üstün B. Professional quality of life in nurses: Compassion satisfaction and compassion fatigue. *J Psychiatr Nur* 2018;9(3):205–211. DOI: 10.14744/phd.2018.86648.
  35. Kolthoff KL, Hickman SE. Compassion fatigue among nurses working with older adults. *Geriatr Nurs (Minneapolis)* 2017;38(2):106–109. DOI: 10.1016/j.gerinurse.2016.08.003.