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Perceived Quality of Life in Intensive Care Medicine Physicians: A French National Survey

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Abstract

Purpose: There is a growing interest in the quality of work life (QWL) of healthcare professionals and staff well-being. We decided to measure the perceived QWL of ICU physicians and the factors that could influence their perception. **Methods:** We performed a survey coordinated and executed by the French Trade Union of Intensive Care Physicians (SMR). QWL was assessed using the French version of the Work-Related Quality of Life (WRQoL) scale, perceived stress using the French version of 10 item-Perceived Stress Scale (PSS-10) and group functioning using the French version of the Reflexivity Scale, the Social Support at Work Questionnaire (QSSP-P). **Results:** 308 French-speaking ICU physicians participated. 40% perceived low WRQoL, mainly due to low general well-being, low satisfaction with working conditions and low possibility of managing the articulation between their private and professional lives. Decreased QWL was associated with being a woman ($p = .002$), having children ($p = .022$) and enduring many monthly shifts ($p = .022$). **Conclusions:** This work highlights the fact that ICU physicians feel a significant imbalance between the demands of their profession and the resources at their disposal. Communication and exchanges within a team and quality of social support appear to be positive elements to maintain and/or develop within our structures.

Keywords

intensive care unit, quality of work life, stress, reflexivity, communication

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Background

Intensive care units (ICU) confront healthcare professionals with specific environmental and working conditions. The composition of an ICU is unique in terms of the spectrum of healthcare services provided. Medical care is ensured by a critical care team composed of intensivists, critical care nurses, psychologists, respiratory therapists, pharmacists, dietitians, and other medical professionals. Patients with life-threatening illnesses are admitted to ICUs and the ICU mortality rate among critical care patients has been reported to approximate 20%.[1] For medical professionals working in ICUs, discrepancies in job demands, responsibility overload, high workload and regular night shifts, end-of-life issues, complex communication with families and interpersonal conflict are potential stressors.[2] These stressors represent a breeding ground for a perceived decrease in personal and professional quality of life, a perceived high level of stress and, in the long term, may contribute to the development of burnout.[3]

These different stress factors can contribute to a reduced quality of work life (QWL). There is a growing interest in the QWL of healthcare professionals and staff well-being. The perception of QWL depends on "the conditions in which employees carry out their work and their ability to express themselves and act on the contents of their work".[4] In France, according to the Agence Nationale pour l'Amélioration des Conditions de Travail,[5] a QWL approach involves progressively addressing 6 highly interrelated themes. These include professional and social dialogue, which is a key contributor to high QWL.[6] However, it is not only a matter of providing quantitative social support; its effects on health are beneficial only if it meets the needs and expectations of individuals (availability and satisfaction of social support) faced with specific aversive situations.[7,8] In ICUs, social support within teams is important, moderating the relationship between burnout and anxiety symptoms[9] and fostering increased quality of care.[10] To measure the collaborative process in a team, group reflexivity is an important concept. It is defined as "the extent to which group members openly reflect on and communicate about the group's goals, strategies (eg, decision-making) and processes (eg, communication), and adapt them to current or anticipated circumstances".[11] More specifically, reflexivity is associated with greater perceived social support, which is in turn associated with reduced perceived team demands and an increased level of control, factors contributing to lower levels of stress or burnout[12-16] and improved well-being.[17]

As part of a prospective, multicentre study, we wished to measure the perceived QWL of ICU physicians and the factors—including task reflexivity and social reflexivity—that could influence this perception. More specifically, we wished to identify the positive effects of reflexivity in optimizing the QWL of ICU physicians and in the perception of lessened imbalance between constraints and resources and correspondingly lessened perceived stress. Indeed, studies in psychology have shown that in a stressful context, subjective characteristics of the situation prevail over objective characteristics (nature, severity, frequency). What influences an individual's ability to cope are primarily the subjective evaluation that the subject makes of it, that is, how he or she perceives the situation.[18] Thus, the effect of perceived stress on the health of professionals is more significant than objective measures of events. Perceived stress has also been shown in many studies to be more predictive of the individual's subsequent health status than actual stress.[19,20] However, as a great majority of the data available on this topic are based on literature from nursing we would like to evaluate specifically the perceived QWL of ICU physicians and the factors that could influence and test if the problem is similar. We conducted this study prior to the COVID-19 pandemic.

Methods

We performed a cross-sectional study designed, coordinated and executed by the French Trade Union of Intensive Care Physicians (SMR). The Equator Network guidelines were used for conducting and reporting the results of this observational study.[21]

This observational study received approval from the Ethics Committee of the French Intensive Care Society. All the participants were informed verbally and through written information. We offered no compensation for survey participation.

Questionnaire Development

Between September 2019 and the end of January 2020, the questionnaire was drawn up by three members of the group. We conducted a draft revision reviewed by all the members of the Trade Union of Intensive Care Physicians group. Some questions were reworded or added.

In France, in each ICU, at least one physician is present in situ each day 7/7 and 24/24. A shift was defined as a period of 24 h in situ. Each physician in ICU work at least 48 h per week.

Finally, the questionnaire comprised 23 headings, divided into five main domains: demographics and private life characteristics, work position and activities and specific measures dealing with quality of work life using the French version of the Work-Related Quality of Life (WRQoL) scale, perceived stress using the French version of 10 item-Perceived Stress Scale (PSS-10) and group functioning using the French version of the Reflexivity Scale, the Social Support at Work Questionnaire (QSSP-P).

Specific Measures

We measured QWL using the French version of the Work-Related Quality of Life (WRQoL) scale,[22] which contains 24 items, evaluated on a Likert scale ranging from 1 ("Strongly disagree") to 5 ("Strongly agree"). This scale estimates QWL according to four dimensions, which assess work conditions [(Satisfaction with career development and autonomy (6 items: 1, 3, 8, 11, 18, 20); Home-work balance (3 items: 5, 6, 14); Control at work (3 items: 2, 12, 23); Working

environment (3 items: 13, 16, 22)], a dimension of General well-being (6 items: 4, 9, 10, 15, 17, 21) and a dimension of Stress at work (2 items: 7, 19). Item 24 is not used in the calculation of the dimensions. This item ("I am satisfied with the overall quality of my working life") provides an overall estimation of the QWL of professionals in cases where certain working conditions have not been mentioned in the scale. Overall quality of work life score from the six dimensions ranges from 24 to 120 (α=.93). A high score indicates high quality of work life.

We assessed perceived stress using the French version of the 10 item-Perceived Stress Scale (PSS-10).[23] Items are evaluated on a Likert scale ranging from 1 ("Never") to 5 ("Often"). The total score ranges from 10 to 50 (α=.86). A high score reflects the frequency with which the individual experiences a perceived stress-resource imbalance. It is possible to calculate two sub-dimensions for this scale: perceived helplessness (items 1, 2, 3, 6, 9, 10; α=.79) and self-perceived efficacy (items 4, 5, 7, 8; α=.81). To be able to compare them, we have calculated the average of each of these dimensions. The PSS-10 is not considered a diagnostic tool; however, an overall score greater than 27 is considered in many studies as the threshold for indicating high perceived stress.[24,25]

We measured reflexivity using the French version of the Reflexivity Scale.[26] This scale includes 16 items evaluated on a Likert scale ranging from 1 ("Completely wrong") to 7 ("Completely right"). It measures two dimensions, each comprising 8 items: 1) task reflexivity (the TR dimension) (ie, the group's ability to adapt its functioning according to changes that appear) (items 1, 2, 3, 4, 5, 6, 7, 8) (α=.90); 2) social reflexivity (the SR dimension) (ie, how the group deals with conflicts, provides social support to members and develops the well-being of members) (items 9, 10, 11, 12, 13, 14, 15, 16) (α=.92). For each scale, a higher score indicated strong group adaptability and group cohesion.

We measured satisfaction with social support using the satisfaction dimension of the Questionnaire of perceived social support in a professional context (QSSP-P)[27,28] adapted to measure professional support. This dimension consists of 12 items assessed on a Likert scale ranging from 1 ("Not at all satisfactory") to 4 ("Fully satisfactory"). It assesses the satisfaction of 3 major sources of support: from colleagues (α=.88), from superiors (α=.93), and from support functions (eg, human resources and logistics) (α=.90). The higher the satisfaction with colleagues, supervisor supports or support functions, the better the professional satisfaction. For this paper, we calculated a composite satisfaction score with the sources of support from colleagues and from superiors (α=.91).

The tools used have all been validated in their original language and also validated in French, and are widely used in the literature in cohorts of careers. The PSS and WRQoL are the most widely used tools in the field of perceived stress and quality of life at work.[29-31]

Study Implementation

All physicians were informed by mail about the study objectives and procedures. The link to the study was given by the Trade Union of Intensive Care Physicians among 1109 French-speaking, university and non-university affiliated doctor intensivists through the French Intensive Care Society (FICS) mailing list. Two reminders were sent between September 2019 and January 2020, to increase the participation rate. Physicians were required to read and accept the terms of the study before starting to respond. Responses to the questionnaires were anonymous and confidential.

Statistical Analysis

Quantitative variables are described as mean ± SD and categorical variables as number (percentage).

First, we performed descriptive analyses of sample characteristics and WRQoL dimensions. To describe the WRQoL dimensions, we calculated percentiles for each dimension and classified them into three categories (high, medium, low) according to the standards recommended by Easton and Van Laar.[32]

We then analyzed the relationship between quality of work life (WRQoL) and, on the one hand, TR dimension, and, on the other hand, the SR dimension. Since the effectiveness of social support on quality of life at work depends on SR satisfaction[7,8]; we conducted analyses including interaction between the SR dimension of the Reflexivity Scale and the satisfaction dimension of the QSSP-P scale. To evaluate the impact of perceived team support (RS*Satisfaction) and the team's ability to adapt (RT) on the quality of work life, we performed linear mixed effects modelling using the restricted maximum likelihood method via the lmer function in the R package lme4.[33] We estimated the effect of RS*Satisfaction and RT on total WRQoL score, controlling for individual (eg, gender, marital status, children) and environmental factors (eg, number of shifts, presence of a resident during shifts) as fixed factors. Because the interclass correlation coefficients indicated that variance in WRQoL scores could be attributed to differences between geographical locations of work (15%), and because the likelihood ratio test statistics (LR) for this variable was significant ($p < .05$), we included geographical location of work as a random effect in order to take account of heterogeneity across clusters of participants. By backward stepwise method, we selected the final model with the best fit and optimally maintained model parsimony using the Akaike Information Criterion (AIC).[34] We proceeded in the same manner for each dimension of the WRQoL.

Finally, to explore the relationship between social support (SR*Satisfaction) and mental health, we performed causal mediation analysis of multilevel data via the lmer function in the lme4 package[33] and the mediate function in the mediation package.[35] We analyzed whether social support (SR*Satisfaction) affected the mental health of ICU physicians, as measured by the PSS-10 score, and hypothesized that the quality of work life measured by the WRQoL scale functioned as the causal mechanism. We also introduced individual (ie, gender, children, having a spouse working in the healthcare field) and environmental factors (ie, doctor-to-bed ratio,

number of shifts per month, number of shifts per weekend, end of shift hours) as fixed variables. Geographical location of work was introduced as a random variable to control for heterogeneity. We proceeded in the same manner for the TR dimension of the Reflexivity scale.

All data analyses were performed using R (version 4.0.3) and its interface R studio server (version 1.4.1103), and SPSS (version 27) for Macintosh. The significance threshold was set at $p < .05$.

Results

Out of the 1109 French-speaking physicians working in ICUs invited to take part in the study, only 308 agreed to take part. A total of 313 questionnaires were received, and 5 were not analyzed due to incomplete responses. The response rate was finally 28.2%. Most of the participants (46.7%) were between 30 and 40 years old and were male (67.5%).

Table 1. Characteristics of the Participant.

	Sample (N = 308)
Sex, n(%)	
Male	208 (67.5)
Female	100 (32.5)
Age distribution, y, n(%)	
< 30	2 (0.6)
30–39	144 (46.8)
40–49	69 (22.4)
50–59	68 (22.1)
> 60	25 (8.1)
Family situation, n(%)	
Single/Divorced/Separated/widowed	47 (15.3)
Married/Living maritally	261 (84.7)
Common-law partner working as health worker	
Yes	171 (55.5)
No	137 (44.5)
Having Children, n(%)	
Yes	199 (64.6)
No	109 (35.4)
Occupational status, n(%)	
University status	82 (26.7)
Non University status	226 (73.3)
Working hours, n(%)	
Full-time	296 (96.1)
Part-time	12 (3.9)
ICU training, n (%)	
Yes	248 (80.5)
No	60 (19.5)
Transversal activities, n (%)	
Yes	138 (44.81)
No	170 (55.19)
Number of shifts per month, Mean (SD)	4.4 (1.5)
Number of weekend shifts per month, Mean (SD)	1.6 (0.75)
End of shift hours, n (%)	
Afternoon	73 (23.7)
Before noon	235 (76.3)
Annual interview, n (%)	
Yes	82 (26.6)
No	226 (73.4)

Work Positions and Activities of the Respondents

As shown in Table 1, most of the respondents (73.2%) had a non-academic position and were working full-time (96.1%). Almost half of the respondents had a transversal activity in their hospital [ie, in addition to their clinical activity, they had managerial or clinical activity in another department (eg, risk manager, vigilance, antibiotic stewardship)]. Mean shifts per month for each respondent were 4.4 ± 1.5. The mean number of week-end's shifts per month was 1.6 ± 0.8. After a shift, most respondents (76.3%) answered that they finished their work before noon the next day, while 23.7% did so the next afternoon. Fifteen percent said they had had a car accident after a shift.

Perceived Support and Overall Quality of Work Life

Forty percent of professionals perceived low QWL, mainly due to low general well-being, low satisfaction with working conditions and low possibility of managing the articulation between their private and professional lives. Conversely, more than half perceived low job stress and high control in their work. As far as job satisfaction was concerned, opinions were mixed. As many intensivists were highly satisfied with their ability to do their job as were lowly satisfied (Table 2). The average detailed scores of the scales used are reported in the Supplementary Appendix Tables (Table E4).

In addition, the results for item 24 indicate that ICU physicians seemed to be relatively satisfied with their work ($M = 3.19 \pm 1.16$, median = 4), even though 30.8% of them were not satisfied, or even not at all satisfied, with their quality of work life. Indeed, we observed a negative skewness (-.41), suggesting a skewed distribution towards more negative values, associated with a lack of normality (Shapiro-Wilk test (308) = .879, $p < .001$) (Figure 1).

Table 2. Classification of Physicians' Scores on WRQoL Dimensions According to Easton and Van Laar (2018) Norms.

	Percentile, n (%)		
	Higher	Average	Lower
Total score	103 (33.4)	82 (26.6)	123 (39.9)
Stress at work	176 (57.1)	35 (11.4)	97 (31.5)
Control at work	168 (54.5)	63 (20.5)	77 (25)
Satisfaction with career development and autonomy	116 (37.7)	79 (25.6)	113 (36.7)
General well-being	88 (28.6)	76 (24.7)	144 (46.8)
Conditions and work environment	82 (26.6)	74 (24)	152 (49.4)
Home-work interface	45 (14.6)	83 (26.9)	180 (58.4)

Note. The norms for the percentiles were taken from the manual for this scale. These norms were obtained from a population working in health services[12]

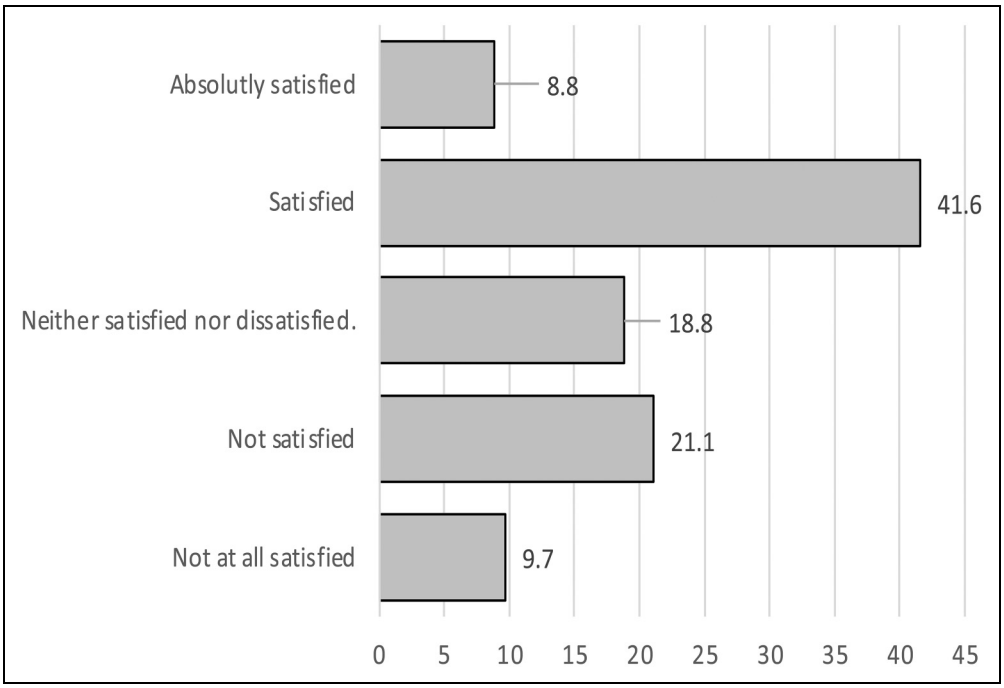

Figure 1. Graphical representation of the responses to item 24 of the WRQoL.
Note. Numbers represent the percentages of participants based on their responses.

Table 3. Results from the Linear Mixed Effects Models for Total WRQoL Scores.

			CI		
	b	*t*	low	High	*p*
Overall WRQoL (AIC = 2319.3)					
Woman	−2.30	−3.07	−3.77	−0.83	.002***
Having spouse working as health worker	1.14	1.64	−0.22	2.50	.102
Having children	−3.18	−2.25	−5.95	−0.41	.025*
Bed/Physician ratio	1.06	0.59	−2.46	4.58	.555
Presence of an intermediate care unit	1.63	1.75	−0.20	3.46	.082
Number of shifts per month	−1.25	−2.27	−2.33	−0.17	.024*
End of shift hours					
Before noon	−1.84	−1.14	−5.02	1.34	.257
Number of weekend shifts per month	−2.27	−2.10	−4.38	−0.16	.037*
Task reflexivity	0.23	2.79	0.07	0.39	.006**
Social reflexivity*Satisfaction	0.04	9.13	0.03	0.05	<.001***

Note: AIC, Akaike Information Criterion; CI, confidence interval; WRQoL, Work-Related Quality of Life scale.
***p < .001 ; **p < .01 ; *p < .05

Impact of the Reflexivity Group

Better quality of work life is associated with a high capacity of the group to adapt its functioning according to changes that appear (TR dimension) and with satisfactory support from colleagues (SR dimension*Satisfaction). On the other hand, decreased quality of work life is associated with being a woman, having children, many monthly shifts and, especially, when the number of weekend shifts is high (Table 3).

Among the six specific dimensions of the WRQoL (Supplementary Appendix Tables E5 to E10), satisfactory social support (SR dimension*Satisfaction) is positively associated with all dimensions of the WRQoL; while the group's ability to adapt (TR dimension) is positively associated only with dimension 1 (greater satisfaction with career development and autonomy), and dimension 5 (perceived control at work).

Organization of an annual interview increased satisfaction with career development and autonomy (dimension 1 of the WRQoL). Having a position of responsibility was associated on the one hand with increased perception of control at work (dimension 5 of the WRQoL), and on the other hand with a decreased feeling of working in good conditions (dimension 6

of the WRQoL) and increased perceived stress at work (dimension 4 of the WRQoL). Finally, even if the doctor-to-bed 'ratio was not significant, it systematically improved in each model (Supplementary Appendix Tables E5 to E10).

Relationship Between Mental Health, Environmental and Individual Factors, and Reflexivity

In the overall sample, the mean on the perceived helplessness dimension was significantly higher than the mean on the perceived self-efficacy dimension, $t(307) = 17.71$, $p < .001$. More than half of ICU physicians (54.9%) experienced imbalance between job demands and the resources to deal with them (PSS > 27), resulting in perceived helplessness and low perceived self-efficacy, $t(168) = 12.95$, $p < .001$.

Mediation analyses including geographical location of work as a random variable revealed a negative significant indirect effect of the Reflexivity scales (TR dimension and SR dimension*Satisfaction) on the perceived stress scale, via the overall WRQoL score, b = -0.19., 95% CI [-0.28-0.10] and b = -.1, 95% CI [-0.15-0.06], respectively. Figure 2 shows that satisfaction with social support (SR dimension*Satisfaction) and the ability of the group to adapt its functioning (TR) improve the quality of life at work, thereby decreasing perception of an imbalance between perceived stress and resources to be able to deal with it. While the effects of task and social reflexivity on the perception of this imbalance are not direct, they lead to improvement in the perceived quality of life at work.

Discussion

The objective of this study was to evaluate the perceived quality of life of ICU physicians and the factors that could influence their perception. As previous research was mainly carried out on intensive care nurses and very few studies were carried out on doctors, we have little data on the quality of life of doctors in intensive care, which makes our data interesting for the scientific community. This is moreover supported by papers showing a reduction in QWL during COVID-19[36-38] and papers on the effects of the pandemic on QWL and the mental health of healthcare professionals.[39,40]

The results of this study showed that 30.8% of ICU professionals were not satisfied, or even not at all satisfied, with their quality of work life (item 24 of WRQoL) and that nearly 40% of them perceived low QWL. According to the dimensions of the WrQoL, work conditions with the greatest negative impact on QWL were: difficulty in managing both their private and professional lives (work-life balance, eg, "*My employer provides me with suitable infrastructure and adequate flexibility for my work to fit with my family life"*, "*My current work schedule is adapted to my personal situation"*), and low satisfaction with the material conditions of work, which rendered it particularly difficult to do the job effectively (eg, "*My employer provides me with what I need to perform my job effectively", "I work in a secure/safe environment"*). In addition, ICU physicians reported low overall content with life on the whole (ie, professional and personal lives), as assessed by the general well-being dimension of the WRQoL.

Out of these three dimensions, physicians specifically perceived an imbalance between their professional and personal lives. This underlines a strong physician perception that the organization does not understand and does not try to support them in coping with pressures outside of work and that they cannot simultaneously fulfil their professional and personal responsibilities, forcing them to prioritize one over the other.[32] Work-life balance is important to consider. Studies show that an imbalance between the two is associated with a higher risk of developing burnout and depressive symptoms, as well as a personal dissatisfaction.[41] To have a positive impact on this dimension, it would seem that the number of shifts in a month and shifts during weekends are factors to be considered. These results are in line with studies that emphasize that the greater the number of on-call duties, the more professionals perceive an imbalance between their professional and personal lives.[42,43] Women appeared to be particularly sensitive to this imbalance. More broadly, being a woman and having a large number of shifts during the month and on weekends were factors associated with lower overall quality of work life, especially if they had children.

Furthermore, separate analysis of the QWL dimensions revealed that an annual appraisal interview (AAI) with the unit head was associated with a higher perception of QWL. This result is important to emphasize. The AAI seems to be a tool to be developed to increase the quality of work life as perceived by the physicians and to increase satisfaction with career development and autonomy. These interviews allow both recognition of the work done,[44] and observation of unsatisfactory working conditions, thereby alleviating the feeling of working in poor conditions. The ratio of physicians (contract and permanent) to beds also seems to be a factor to consider when assessing the QWL of ICU physicians. Although this ratio was never significantly associated with the overall QWL score and the different dimensions of QWL, the introduction of this factor systematically improved the statistical models carried out in this study, highlighting its importance. However, depending on the QWL dimensions, the relationships did not systematically proceed in the same direction. While a high physician-to-bed ratio was associated with greater satisfaction with career development, better work-life balance, a greater sense of control at work, better working conditions, better overall QWL and low work stress, the same dimension was also associated with low well-being in physicians' overall lives. These results highlight the need for further analyses to understand the impact of this ratio on the work quality of intensive care physicians. In addition, despite the fact that the majority of ICU physicians perceived a low level of work stress according to the WRQoL, 54.9% of them perceived a significant imbalance between, on the one hand, the demands of the job and, on the other hand, the resources to deal with the latter and their ability to control the situation; a majority of them felt that their resources did not enable them to meet the demands (cut-off PSS-10 > 27).

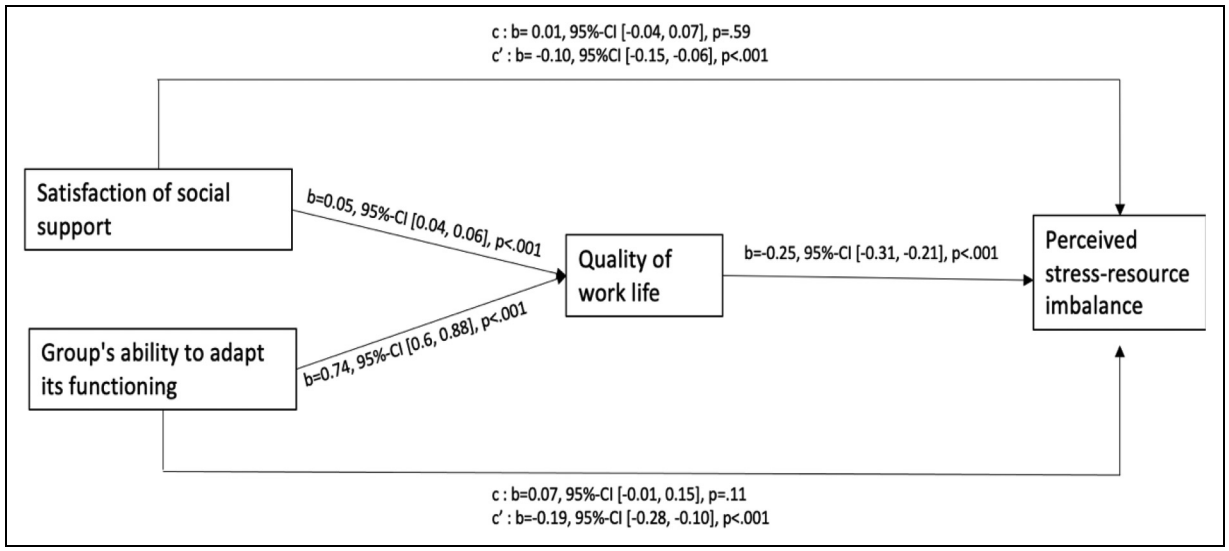

Figure 2. Mediating effect of quality of work life on the relationship between social support and perceived stress-resource imbalance.

A major result of this study is the mediating effect of QWL on the relationship between reflexivity (task and social) and perceived stress. The link between reflexivity and perceived stress would therefore be indirect. To reduce the perceived stress of ICU physicians, one of the priorities is to act on the way the group functions. By improving the group's ability to think collectively and adapt to complex, unpredictable circumstances, it is possible to increase QWL and thereby reduce the imbalance between demands and resources at work. This is in line with the study by Collange et al,[28] which showed that satisfaction with the support provided by superiors and the social support of colleagues would be protective against the development of perceived stress, distress and anxiety. However, our study introduces a complementary notion by showing that this protective effect is mediated by the effects on the QWL of group functioning in the face of difficult situations. In addition, to our knowledge, this study is the first to demonstrate the positive effect of group reflexivity on the well-being of ICU physicians. As concerns the specific ICU context, the team is an important resource helping to improve QWL[45] and safe patient care.[46,47] The results of our study revealed, among other things, that satisfactory social support was positively associated with all dimensions of WRQoL and that the team's ability to adapt effectively to changing situations was associated with greater satisfaction in career development and autonomy in carrying out tasks, and with greater perception of control at work (eg, perception of an opportunity to contribute to decision-making concerning them).

Considering the results, it is possible to act on all the factors assessing working conditions in the WRQoL by focusing not directly on the working conditions themselves, but rather on enhancing the group's skills in communication and adaptability to changing situations. This perspective is interesting in the sense that it is not always possible to directly intervene on the working conditions themselves (eg, number of shifts, presence of a resident, availability of intermediate care unit) or on the individual factors associated with QWL (eg, being a woman, having children). Although there are still few studies on the evaluation of tools that improve the QWL of ICU professionals, a review of the literature[48] lists various effective interventions that corroborate our research results on the importance of social support: 1/ team interviews,[49] this is a discussion initiated by the nursing assistant five minutes before the end of the service with the members of the interdisciplinary team in order to summarize the activities carried out, those which will have to be done, and needs; 2/ the empowerment model[50] offering opportunities for work involvement, rewards and communication to enable critical thinking, problem solving and developing leadership skills; 3/ setting up focus groups and round tables[51]; 4/ training in positive thinking[52]; 5/ the stress management program[53]; 6/ participatory management approach.[54] This approach involves creating opportunities for dialogue and collaboration (multidisciplinary meetings, internal training, team support) and implementing a project-based approach. This type of management has demonstrated its effectiveness in improving the work quality of healthcare professionals as well as the quality of care provided to patients and their entourage in oncology.[55] The study by Huang et al[56] also showed that Balint groups within wards could relieve burnout and improve QWL of ICU professionals. During Balint group meetings, situations of distress experienced with patients and families are discussed and thus caregivers can gain a better understanding of the situations. Sharing difficult experiences is beneficial in reducing the emotional burden in the care relationship.[57] The positive effects of the Balint groups were more apparent with more intervention sessions. The authors suggest at least eight sessions for best results. Along the same lines, the study by Rabinowitz et al[58] suggests that a psychological intervention of 10–12 months significantly increases self-efficacy, while a short psychological intervention (less than 6 months) had no obvious effect.

Moreover, for hospital administrations, improving physicians' working conditions and the expenses they entail could, in the medium and long term, generate a return on investment in terms of preventing burnout and facilitating staff recruitment.

Our study has some limitations. Firstly, we were not able to confront objective data concerning workload with perceived WRQoL and stress. However, as previously demonstrated that it is not the objective characteristics of a stressful situation (nature, severity, frequency) that influence the subject's ability to adapt to the situation, but rather the subjective evaluation that the subject cares, in other words how he perceives the situation.[18] Second, our questionnaire did not explore unit management, thus we cannot exclude the possibility that the respondents are selected and that our results are not extendable to all the units. Third, our study is limited at a single country (France) and only one medical discipline (intensivist), however, we deliberately started with a French survey because of the very different organizations of ICU exists in Europe. Thus, our results are not generalized to all ICUs in Europe. Fourth, the questionnaire was not forwarded to all ICU physicians working in France, it was sent to FICS mailing list, which could limit generalization. Fifth, we focused our study on physicians, however, we know that intensive care implies multidisciplinary aspects, and it would be even more interesting to perform a study on healthcare workers in general, rather than physicians only, given that interdisciplinary relations (eg nurse-physician interactions) may have a major impact on results.

Conclusions

Prior to the pandemic context, this work highlights the fact that ICU physicians feel a significant imbalance between the demands of their profession and the resources at their disposal to do so, including their ability to control this situation. Communication and exchanges within the team as well as quality of social support appear to be positive elements to maintain and/or develop within our structures. As such, it is important to specify that these general areas for improvement must imperatively take into account the specific difficulties encountered by women in ICU that have been highlighted in this study. Further interventional studies are needed to test the implementation of quality of working life improvement measures.

List of Abbreviations

AIC	Akaike Information Criterion
FICS	French Intensive Care Society
ICU	Intensive care unit
LR	likelihood ratio test statistics
PSS-10	score Perceived stress scale
QSSP-P	scale questionnaire of perceived social support for the professional world
QWL	Quality of work life
RS	Reflexivity scale
SD	Standard deviation
SMR	French Trade Union of Intensive Care Physicians
SR	Social reflexivity
TR	Task reflexivity
WRQoL	Work-Related Quality of Life

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