Research Article

Association Between Self-Assessed Empathic Skills, Depressive Symptoms, and Work Satisfaction: A Descriptive Correlational Study in Greek-speaking Critical Care Nurses in Cyprus

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ABSTRACT

Background: Critical care nurses face occupational hazards impacting their psychological well-being, work satisfaction, and ability to perform clinical duties effectively, including fostering empathic relationships with healthcare users.

Aim: To assess in nurses employed in Emergency Departments, Cardiovascular Care, Intensive Care, and Neonatal Intensive Care Units in the Republic of Cyprus: a) the degree of self-assessed depressive symptoms, work satisfaction, and empathic skills, and b) the relationship between these variables, and possible correlations with demographic characteristics.

Methods: A correlational, cross-sectional design was employed in 150 critical care nurses (response rate, 39.68%). In 2018, a self-reported questionnaire captured socio-demographic and educational/vocational details alongside measurement tools for depressive symptoms (CES-D), work satisfaction (IWS-Part B), and empathic skills (JES-HP).

Results: Mean scores for CES-D, IWS-Part B, and JES-HP were 14.4(±9.7), 184(±18.6), and 99(±14.7) respectively. Self-assessed depressive symptoms correlated negatively with work satisfaction (r=-0.296, p<0.001) and empathic skills (r=-0.270, p<0.001). Neonatal Intensive Care Unit nurses showed 5.7 points lower depressive symptoms than their Emergency Department (ED) counterparts (b=-5.7, p=0.052). The Intensive Care Unit nurses scored 10.4 points higher on IWS-Part B than ED nurses (b=10.39, p=0.015). Participants with 4-5 years of current work experience reported 12.7 points lower on IWS-Part B compared to those with less than 1 year of experience (b=-12.7, p=0.042). Similarly, 10-13 years of experience correlated with 16.8 points lower empathic skills (b=-16.8, p=0.015).

Conclusion: The confirmed relationship between depressive symptoms, work satisfaction, and empathic skills warrants thorough qualitative and quantitative exploration in longitudinal and interventional studies.

Key words: critical care nurses, depressive symptoms, empathic skills, work satisfaction

INTRODUCTION

A critical skill in nursing practice linked with the quality and safety of provided health care is empathic response (Elliott et al., 2018; Marsh, 2022). Empathic response is the result of a cognitive process, which enables clinicians to truthfully understand the perspective, needs, and feelings of those they care for and further support them safely and effectively (Cuff et al., 2016). At the same time, clinicians' empathic caring needs to be simultaneously experienced by healthcare service users to be linked with positive outcomes in the latter, such as engagement into therapy and satisfaction with provided care (Acquati et al., 2019; Xu et al., 2020).

Healthcare employees with psychological and mental difficulties may experience not only diminished ability to respond with empathic skills to their patients and their families (Giusti et al., 2021), but they may also experience reduced joyful feelings about their work and depressive symptoms (Sun et al., 2022; Villarreal-Zegarra et al., 2022). Depressive symptoms include depressive mood, tension, inability to enjoy favorable activities, enormous guilt, disturbed appetite, cognitive functioning, and sleep habits. In most severe cases, substance use, and self-harming occur, and or individuals may wish to end their own life (American Psychiatric Association, 2013).

Data show that clinicians with positive emotions about their work, may experience less work stress and symptoms of psychological and mental distress, such as depressive symptoms (Ghawadra et al., 2019). The degree of clinicians' positive feelings about their work is described as work satisfaction (Ravari et al., 2012). Moreover, work satisfaction has been linked with engagement in caring relationships and empathic attitudes towards healthcare service users (Kahriman et al., 2016). However, evidence on the link among clinicians' level of empathic skills, work satisfaction, and depressive symptoms is still insufficient (Karanikola et al., 2020).

Critical care nursing, which encompasses specialties such as intensive care unit (ICU) nursing and emergency department (ED) nursing is deemed one of the most stressful within the nursing profession (Eldin et al., 2021). Critical care nurses are exposed to numerous work-related hazards (Rahman et al., 2017), which may have adverse effects on their psychological and mental well-being, as well as on their professional attitudes, including work satisfaction and their ability to optimally perform their clinical duties, such as developing empathic and caring relationships with healthcare service users (Stensland & Landsman, 2017).

A meta-analysis showed that depressive symptoms are common in ICU nurses, with a prevalence of 24.99% (Huang et al., 2022). Other data support that the turnover intention increases by about 2.8-4.6 times when depressive symptoms of moderate degree are experienced by nurses (Pang et al., 2020).

Yet, there are scarce data concerning the frequency of psychological and mental distress among critical care nurses, i.e., depressive symptoms, and its correlation, if any, with their professional attitudes, mainly their ability to develop empathic therapeutic relationships with healthcare service users and positive feelings about their work (Wang et al., 2021).

The present study provides data, for the first time, on the quantitative link between depressive symptoms, work satisfaction, and self-assessed empathic skills among nurses in critical care settings in the Republic of Cyprus (RC). These data are expected to provide a more comprehensive understanding of the factors associated with critical care nurses' professional and mental well-being.

METHODS
Aim

The aim herein was to assess in nurses employed in public and private critical care settings [Emergency Departments (EDs), Cardiovascular Care Units (CCUs), Intensive Care Units (ICUs) and Neonatal Intensive Care Units (NICUs)] in the Republic of Cyprus: a) the degree of self-assessed depressive symptoms, work satisfaction, and empathic skills, and b) the relationship between these variables, and possible correlations with demographic and educational/ vocational characteristics.

Study design

A correlational, cross-sectional design was applied.

Target Population & Sample

The target population was ED, CCU, ICU and NICU nurses employed in private and public hospitals. Data were randomly selected from all eligible institutions and settings.

An adequate sample size was determined to be 120 participants based on a statistical significance level of α=0.05 and a moderate correlation effect with 80% statistical power (Burns & Grove 2001; Cohen 1988). A total of 378 questionnaire packages were distributed to all five public hospitals of the RC, and to the one of five private hospitals that agreed to participate. The following inclusion criteria were set for participation: (a) a minimum of six months of employment in critical care

setting, (b) advanced knowledge of Greek language, and (c) full comprehension of the aim and procedures of the study, as well as of the data collection tool. There were no exclusion criteria. The final sample encompassed 150 nurses (response rate 39.68 %).

Data collection

Data collection took place in 2018 via a self-reported questionnaire package. This included questions for demographic, educational, employment, and vocational data (e.g., work experience as a nurse, ranking, type of work setting, etc.), along with the measurement tools used to assess the degree of depressive symptoms, empathic skills, and work satisfaction. Each questionnaire package included a consent form that described (a) the aim and objectives of the study, (b) the voluntary nature of participation, and (c) confidentiality, anonymity, and safety issues related to the data collected. Questionnaire packages were distributed by the CG researcher by hand. The participants were asked to put the filled-in questionnaires in a non-transparent envelope and then in a safe box in their restrooms while fill-in took place during break time. Participants were both written and orally informed that data anonymization was achieved soon after they placed their sealed envelopes in the safe box. After that, it was not possible to withdraw their data from the study. The researcher CG visited each hospital after one week to remind the nurses about the survey, as well as to collect the filled-in questionnaires.

Measurement tools

The "Center for Epidemiological Studies- Depression scale" (CES-D) (Radloff, 1991) was used to evaluate the severity of symptoms of depression, i.e., depressed mood, unworthiness and guilt, hopelessness, kinetic dysfunction, relational problems, sleep disturbances, and appetite loss. This tool is developed to record periods of sadness, very severe disorders of neuro-cognitive functioning, and chronic loss of interest and enjoyment for previously enjoyable activities. This instrument encompasses 20 positive and negative scoring items, such as "I had bad appetite" or "I was happy", respectively. The item answers range from 0 (hardly or never) to 3 (5-7 times a week). Thus, the total score ranges from 0 to 60, while the higher the frequency of the reported symptoms, the higher the severity of them. This scale has been shown to be suitable for depressive symptoms assessment in the general population (Sokratous et al., 2014).

The "Index of Work Satisfaction" (IWS) (Stamps, 1997) was applied for the work satisfaction degree. The IWS was developed to report the

importance of six work-related factors through 15 paired comparisons (IWS- Part A), as well as the level of satisfaction from six work-related factors through 44 Likert-type items (IWS-Part B). Each response ranges from 1 (strongly agree) to 7 (strongly disagree). The higher the score, the higher degree of work satisfaction is reported. Herein only, IWS-Part B was applied. The six work-related factors in the IWS-Part B are: 1) *Autonomy (*independent tasks performed within one's professional role), 2) *Professional status (*overall importance and pride perceived about being a nurse), 3) Inter-professional *relations (*official and unofficial professional and social and professional relations in the workplace environment), 4) *Payment*, 5) *Performed tasks* (duties assigned during working hours), and 6) *Organizational policies (*procedures and policies of the healthcare organization). Nurses' degree of satisfaction for each one of the six work-related factors is calculated by summing up the answers of the relevant items. Overall work satisfaction is calculated by summing the 44 answers in the items of the IWS-Part B.

The "Jefferson Scale of Empathic Skills for Health Professionals" (JES-HP) was applied for assessing the degree of empathic skills. This scale encompasses the "Perspective taking", the "Standing in patients" shows" and the "Compassionate care" subscales. This tool was translated, back-translated, and validated in the Greek-speaking nurses in Cyprus. This tool encompasses 20 self-reported, 7-point Likert items, with the answers ranging from "1"(totally disagree) to "7" (totally agree). Higher scores indicate a higher degree of empathic skills. This tool was used as a unidimensional measurement scale herein. The internal consistency reliability coefficient ranges between 0.8 and 0.9 for healthcare professionals (Hojat et al., 2009).

Data analysis

The metric properties of the measurement tools were measured in terms of internal consistency reliability (Cronbach's alpha) as these tools were used for the first time in the present target population. Descriptive and inferential statistics were then calculated. Frequencies, mean values (M), and standard deviation (SD) were assessed. Normality was also assessed for the variables, and parametric and non-parametric tests were applied accordingly. The average cumulative value was calculated to assess the degree of work satisfaction, empathic skills, and severity of depressive symptoms. Then, associations between each main variable and demographic and educational/vocational characteristics were assessed, separately. The ANOVA and Chi-square tests were assessed to estimate the differences between groups, as described by categorical variables. The

parametric test Pearson's r was assessed to describe correlations between numeric variables. Following the measurement of univariable associations (statistical significance was set to 0.05 or lower), and in order to assess these associations after controlling for the confounding effect of the demographic and educational and vocational characteristics in the final model for each one of the three main variables, the mean total work satisfaction, empathic skills, and depressive symptoms severity scores (continuous variable) for each of the demographic and educational/vocational characteristics was estimated in multiple forward linear (stepwise) regression models, respectively. The 95% confidence intervals (CI) were estimated. The Statistical Package for Social Sciences was used for data analysis (SPSS, Inc, Chicago, IL version 20.00).

Ethical issues

The National Bioethics Committee of Cyprus approved the study [AP:43572/22-12-2014]. Data collection was performed according to anonymity and confidentiality principles since no identifying information was reported.

RESULTS

Measurement tool reliability

The internal consistency reliability of all scales in terms of Cronbach's alpha was: a) CES-D α=0.90, b) IWS-Part B α=0.78, and c) JES-HP α=0.80. As for the IWS-Part B subscales, Cronbach's alpha was 0.70 for "satisfaction from payment" (6 items), 0.48 for "satisfaction from organizational policy" (4 items), 0.75 for 'satisfaction from work relations" (9 items), 0.55 for "satisfaction from autonomy (9 items), 0.51 for "satisfaction from professional status' (6 items)' and 0.60 for "satisfaction from performed tasks" (8 items).

Characteristics of the study participants

Table 1 displays the participants' demographic, educational, and vocational data. More than half were females (58%), with an average age of 32.4 (± SD 9.26) years, with an average of 8.55 (± 6.81) years of clinical experience in nursing, and 5.52 (± 2.6) years of work experience in the current setting. Most of them were employed in the ED (n= 67).

Table 1.

Demographic, educational, and vocational characteristics of the a convience sample of critical care nurses from Croatia in 2018

Characteristics	Parameters	N (150)	Percent
Age	20-30	78	52.0
	31-40	46	30.7
	41-50	17	11.3
	51-60	7	4.7
	>60	2	1.3
Sex	Male	63	42.0
	Female	87	58.0
Family status	Single	71	47.3
	Married	69	46.0
	Divorced	7	4.7
	Widow / Widower	3	2.0
Having children	Yes	73	48.7
	No	77	51.3
Education level	Diploma	105	70.0
	Master's degree	35	23.3
	Other post-graduate level degree	10	6.7
Work setting	Emergency Department (ED)	67	44.6
	Cardiovascular Care Unit (CCU)	33	22
	Intensive Care Unit (ICU)	33	22
	Neonatal Intensive Care Unit (NICU)	17	11.4
Years of total work experience in Nursing	<1	10	6.7
	1-5	58	38.7
	6-10	35	23.3
	11-20	38	25.3
	21-30	9	6.0
Years of work experience in the current setting	<1	24	16.0
	1-3	62	41.3

	4-5	23	15.3
	6-9	15	10.0
	10-13	12	8.0
	14-17	8	5.3
	>17	6	4.0
Work shift	Morning	9	6.0
	Afternoon	0	0.0
	Night	1	.7
	Rotation	140	93.3
Ranking	Registered nurse	133	88.7
	Senior nurse	11	7.3
	Head nurse	6	4.0

Mean scores of the main variables

Self-assessed depressive symptom severity

The average cumulative value on the CES-D scale was 14.4 (±9.7) [scale range (SR):0-60], corresponding to an absence of clinically relevant depressive symptomatology.

Degree of work satisfaction

The average cumulative score on the IWS-Part B was 184 (±18.6) (SR: 44-308), indicating moderate work satisfaction.

Degree of self-assessed empathic skills

The mean cumulative score on the JES-HP was 99 (±14.7) (SR: 20-140), suggesting a moderate level of self-perceived empathic skills.

Associations among self-assessed depressive symptoms severity, work satisfaction, and self-assessed degree of empathic skills

The linear univariate correlations of the measurement scales of the main variables and their subscales were studied with Pearson correlation r (Table 2). Self-assessed depressive symptom severity (CES-D) was negatively and mildly to moderately associated with work satisfaction (total IWS-Part B score) (r=-0.296, p<0.001), satisfaction from work interactions (r=-0.362, p<0.001), satisfaction from professional status (r=-0.268, p<0.001), as well as empathic skills (r=-0.270, p<0.001). There was no association between work satisfaction (total IWS-Part B score) and empathic skills (JES-HP total score) (r=0.119, p>0.05). Table 2 presents univariate associations between the main variables.

Multiple linear regression was used to study the correlation between demographic, educational, and vocational characteristics and the main variables. Three regression models were created, with independent

variables including age, gender, family status, having children, education level, years of total work experience in Nursing, years of work experience in the current setting, ranking, type of work setting, and sector of employment. The dependent variables were the average cumulative value of CES-D, IWS-Part B and JES-HP scales.

Self-assessed depressive symptom severity

The work setting differentiated the level of self-assessed depressive symptoms severity, with Neonatal ICU nurses having a mean depressive symptoms level by 5.7 points lower than those working in the ED (b=-5.7, p=0.052). Moreover, the Professional Status Satisfaction subscale of the IWS-Part B had a moderate negative correlation with depressive symptoms severity (b=-0.43, p=0.02). The Perspective Taking subscale of the JES-HP had a weak negative correlation with depressive symptoms severity level (b=-0.18, p=0.027).

Work satisfaction

The work setting influenced variations in work satisfaction levels, with ICU nurses having an average IWS-Part B score 10.4 points higher than ED nurses (b=10.39, p=0.015). Additionally, participants with 4-5 years of work experience in the current work setting reported lower IWS-Part B score by 12.7 points on average, compared to those with less than 1 year of work experience (b=-12.7, p=0.042).

Self-assessed empathic skills

Work experience in the current setting appeared to differentiate empathic skills level, as 10-13 years of work experience was associated with empathic skills level by 16.8 points lower than those with less than 1 year of experience (b=-16.84, p=0.015).

Table 2.

Univariate associations of main variables and subscales: *Pearson r correlation values* (N=150)

	CES-D score	JES-HP total score	Perspective taking JES-HP subscale	Compas-sionate care" ES-HP subscale	Standing in patients' shoes ES-HP subscale	IWS-Part B total score	Autonomy satisfaction IWS subscale	Work relations satisfaction IWS subscale	Organizational policies satisfaction IWS subscale	Payment satisfaction IWS subscale	Professional status satisfaction IWS subscale
JES-HP total score	-0.270**										
"Perspective taking" JES-HP subscale	-0.260**	0.774**									
"Compas-sionate care" ES-HP subscale	-0.112	0.699**	0.121								
"Standing in patients' shoes" ES-HP subscale	-0.186*	0.549**	0.200*	0.421**							
IWS- Part B total score	-0.296**	0.119	0.051	0.109	0.137						
Autonomy satisfaction IWS subscale	-0.116	0.123	-0.062	0.239**	0.193*	0.573**					
Work relations satisfaction IWS subscale	-0.362**	0.239**	0.156	0.193*	0.159	0.739**	0.304**				
Organizational policies satisfaction IWS subscale	-0.067	-0.156	-0.118	-0.141	-0.005	0.587**	0.257**	0.185*			
Payment satisfaction IWS subscale	0.043	-0.190*	-0.085	-0.207*	-0.11	0.325**	-0.025	-0.06	0.387**		
Professional status satisfaction IWS subscale	-0.268**	0.133	0.168*	0.024	0.038	0.457**	0.059	0.363**	0.078	-0.099	
Performed tasks satisfaction IWS subscale	-0.107	0.098	0.02	0.119	0.106	0.669**	0.336**	0.318**	0.288**	.253**	0.131
*p<0.05, **p<0.001											

DISCUSSION

We studied, for the first time, the link between self-assessed empathic skills, depressive symptoms, and work satisfaction in critical care nurses. The main results revealed a negative relationship between the severity of depressive symptoms and both empathic skills (perspective taking) and work satisfaction (satisfaction from professional status), and these associations remained significant after controlling for demographic and educational/vocational characteristics. There was no association between empathic skills and work satisfaction. This means that those experiencing depressive symptoms are less likely to be empathic towards their patients, mainly in terms of perspective taking, and less satisfied with their work, especially with their professional status. Based on this, screening tests for depressive symptoms in critical care nursing staff may reveal vulnerable individuals who can benefit from targeted interventions towards the enhancement of empathic attitudes and understanding of the different perspectives of others, mainly patients and their families. Additionally, since it was found that those employed in neonatal ICUs reported less frequent depressive symptoms compared to ED participants, special focus needs to be given to ED nurses. The fact that there was no association between work satisfaction and empathic skills may imply that empathic skills may be less relevant to nurses' emotional responses to their work context and subsequently less likely to be influenced by interventions focused on work satisfaction empowerment or on work-related factors such as payment. Thus, it is important to consider specific parameters of the work environment and the profession, such as organizational culture or professional status and nurses' recognition issues when exploring the relationship between professional attitudes, personal variables and mental health variables (Garcia et al., 2017; Yazdanshenas Ghazwin et al., 2016; Helaly et al., 2018; Sook et al., 2018;). For instance, an Australian study in hospital nurses confirmed the connection between depressive symptoms and quality of work-life (Hegney et al., 2014), as well as a study in Chinese nurses, which revealed that depressive symptoms were associated with ranking, overcommitment to work, and poor relationships with patients and their families (Gao et al., 2012).

Furthermore, since the present study was cross-sectional, the relationship between depressive symptoms, empathic skills, and work satisfaction may be viewed and vice versa. Specifically, those who were dissatisfied with their work status or had not developed the clinical skill

of being able to understand the perspective of others may be viewed as more prone to depressive symptoms. Thus, an additional way to promote well-being in critical care nurses may be through interventions to increase work satisfaction in terms of status and recognition or aiming to promote empathic understanding (Pearson, 2021). Additionally, since it was found that those employed in ICUs reported higher scores of work satisfaction than those working in EDs, special attention needs to be paid to nurses employed in EDs when it comes to interventions aiming to increase work satisfaction.

Moreover, those with 4-5 years of work experience reported lower work satisfaction than those with less than 1 year of work experience in the current work setting. This was also the pattern in the relationship between empathic skills and work experience since those with 10-13 years of work experience reported lower empathic skills than those with one year or less of work experience. These results indicate that more experienced participants had lower work satisfaction and empathic skills.

Specifically, it seems that interaction between employees and work context through the years has an adverse impact on their feelings about work, and their ability to develop caring and compassionate relationships with healthcare service users. This finding is confirmed by Khamisa et al. (2016), who found that longer clinical experience was associated with lower work satisfaction and the presence of burnout symptoms in hospital nurses. Thus, a possible explanation regarding the negative relationship between work satisfaction and length of work experience may be attributed to the added impact of work-related stressors on them. Indeed, there are a number of studies addressing the link between exposure to work-related stressors and work dissatisfaction in critical care nurses (Joshua et al., 2021; Mousazadeh et al., 2019; Saravanabavan et al., 2019). In contrast, Olajide et al. (2020) found a slight positive association between years of work experience and work satisfaction in Nigerian hospital nurses. This positive association between length of clinical experience and work satisfaction was also confirmed in ICU nurses by Oliveira et al. (2017). A possible explanation may include advanced skills in problem-solving and stress control in experienced nurses.

Further qualitative and longitudinal studies are needed to address the difference in empathic skills between novice and experienced critical care nurses over the years. Yet, based on these findings, special attention needs to be given to nurses with clinical experience of 10 years and more when empathic skills enhancement interventions are applied.

Indeed, a number of educational programs on this topic have been found to be effective in enhancing empathic skills in clinicians, such as the empathy continuum approach, which is an evidence-based teaching model of empathy, which may be used to assess and teach the skills required to provide empathic care to patients and their families in nurses (Levett-Jones & Cant, 2020). Immersive simulations that put clinicians in the role of the patient may also be effective in promoting empathic responses in nurses (Engbers, 2020). Overall, training methods in empathy for healthcare clinicians include role-playing, face-to-face training, and videos, with both short and long-term training having high effect sizes (Smith et al., 2020).

Despite the significance of empathic skills in the nursing profession, their role in nurses' well-being and work-related attitudes has not been studied adequately, especially in critical care nurses (Karanikola et al., 2020). At the same time, various constructs relevant to empathic skills exist, such as compassion satisfaction, companionate care, or compassion (Gerace, 2020), while only limited studies have assessed the connection of these constructs with other professional attitudes and mental distress; most importantly, existing data is ambivalent (Anzaldua & Halpern, 2021; Craigie et al., 2016). A number of data support that although empathic skills and relevant constructs, such as compassion satisfaction, are significant skills that are negatively associated with emotional exhaustion and burnout (Mottaghi et al., 2020; Anzaldua & Halpern, 2021), these do not seem to directly protect nurses against the development of psychiatric symptoms in nurses employed in an acute care hospital environments (Craigie et al., 2016; Salvarani et al., 2019). Thus, the present relationship between self-assessed empathic skills and the manifestation of depressive symptoms needs to be further explored, including additional variables related to personality traits, such as resilience, and to the work context, such as organizational culture (Anzaldua & Halpern, 2021; Rushton & Pappas, 2020). Relevant data are expected to provide a deeper understanding of personal and professional variables that may function as protective or risk factors on critical care nurses' well-being, quality of professional life, and work-related dysfunctional phenomena.

Limitations

The main limitation of this study includes the cross-sectional design, which does not allow any causal inferences on the direction of the connection between depressive symptoms, work satisfaction, and

empathic skills. Moreover, the generalizability of the findings needs to be with caution since the study's sample was drawn from a particular country through a convenience sampling technique. However, the adequate response rate may partially support the generalizability of present findings to critical care nurses.

Additionally, the fact that highly dissatisfied nurses, or those who experience severe depressive symptoms, are expected to be reluctant to participate in studies may also be an important limitation herein. Specifically, the degree of depressive symptoms may have been underestimated herein, and the level of work satisfaction may have been overemphasized. However, the degree to which non-participation has influenced the present results is impossible to estimate.

Most importantly, the fact that factors such as everyday life stressors, personal traumatic experiences, and genetic predisposition, irrelevant to the work environment, which may be linked to depressive symptomatology or empathic response, were not included in the present study design, is an important limitation, too. Moreover, not self-reported instruments on empathic response, also considering the perspective of patients, as well as instruments on screening of mental distress symptomatology, applied by clinicians may also have given more accurate data on the participants' variables.

CONCLUSION

Data on the association between self-reported depressive symptoms, empath, and work satisfaction were confirmed herein. These findings may inform further qualitative studies and longitudinal research to etiologically assess the factors related to work satisfaction, empathic response, and critical care nurses' well-being, as well as the link with work-related hazards leading to distressing experiences. The optimal goal is to develop interventions to promote a supportive and empowering work environment for critical care nurses.

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Disclosures: Declarations of interest, none.

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	CES-D score	JES-HP total score	"Perspective taking" JES-HP subscale	"Compas-sionate care" ES-HP subscale	"n p s E s
JES-HP total score	-,270**				
"Perspective taking" JES-HP subscale	-,260**	,774**			
"Compas-sionate care" ES-HP subscale	0,112	,699**	0,121		
"Standing in patients' shoes" ES-HP subscale	-,186*	,549**	,200*	,421**	
IWS- Part B total score	-,296	0,119	0,051	0,109	0

Table 2. Univariate associations among the scores of the scales of the main variables and their subscales with the Pearson r

	**				
Autonomy satisfaction IWS subscale	-0,116	0,123	-0,062	,239**	,1
Work relations satisfaction IWS subscale	-,362**	,239**	0,156	,193*	0
Organizational policies satisfaction IWS subscale	-0,067	-0,156	-0,118	-0,141	-(
Payment satisfaction IWS subscale	0,043	-,190*	-0,085	-,207*	-(
Professional status satisfaction IWS subscale	-,268**	0,133	,168*	0,024	0
Performed tasks satisfaction IWS	-0,107	0,098	0,02	0,119	0

subscale						
*p<0.05, **p<0.001						

Multiple linear regression was used to study the correlation between demographic, educational, and vocational characteristics and the main variables. Three regression models were created, with independent variables including age, gender, family status, having children, education level, years of total work experience in Nursing, years of work experience in the current setting, ranking, type of work setting, and sector of employment. The dependent variables were the average cumulative value of CES-D, IWS-Part B and JES-HP scales.

Self-assessed depressive symptom severity

The work setting differentiated the level of self-assessed depressive symptoms severity, with Neonatal ICU nurses having a mean depressive symptoms level by 5.7 points lower than those working in the ED (b=-5.7, p=0.052). Moreover, the Professional Status Satisfaction subscale of the IWS-Part B had a moderate negative correlation with depressive symptoms severity (b=-0.43, p=0.02). The Perspective Taking subscale of the JES-HP had a weak negative correlation with depressive symptoms severity level (b=-0.18, p=0.027).

Job satisfaction

The work setting influenced variations in job satisfaction levels, with ICU nurses having an average IWS-Part B score 10.4 points higher than ED nurses (b=10.39, p=0.015). Additionally, participants with 4-5 years of work experience in the current work setting reported lower IWS-Part B score by 12.7 points on average, compared to those with less than 1 year of work experience (b=-12.7, p=0.042).

Self-assessed empathic skills

Work experience in the current setting appeared to differentiate empathic skills level, as 10-13 years of work experience was associated with empathic skills level by 16.8 points lower than those with less than 1 year of experience (b=-16.84, p=0.015).

DISCUSSION

We studied, for the first time, the link between self-assessed empathic skills, depressive symptoms and job satisfaction in critical care nurses. The main results revealed a negative relationship between severity

of depressive symptoms and both empathic skills (perspective taking) and job satisfaction (satisfaction from professional status), and these associations remained significant after controlling for demographic and educational/vocational characteristics. There was no association between empathic skills and job satisfaction. This means that those experiencing depressive symptoms are less likely to be empathic towards their patients, mainly in terms of perspective taking, and less satisfied with their job, especially with their professional status. Based on this, screening tests for depressive symptoms in critical care nursing staff may reveal vulnerable individuals who can be benefit from targeted interventions towards enhancement of empathic attitudes and understanding of the different perspectives in others, mainly patients and their families. Additionally, since it was found that those employed in neonatal ICUs reported less frequently depressive symptoms compared to ED participants, special focus needs to be given to ED nurses. The fact that there was no association between job satisfaction and empathic skills may implies that empathic skills may be less relevant to nurses' emotional respond to their work context, and subsequently less likely to be influenced by interventions focused on work satisfaction empowerment, or on work-related factors such as payment. Thus, it is important to take into account specific parameters of the work environment and the profession, such as organizational culture or professional status and nurses' recognition issues when exploring the relationship between professional attitudes, personal variables and mental health variables (Ghazwin, et al., 2016; Garcia et al., 2017; Sook et al., 2018; Helaly et al., 2022). For instance, an Australian study in hospital nurses confirmed the connection between depressive symptoms and quality of work-life (Hegney, et al., 2014; REF), as well as a study in Chinese nurses, which revealed that depressive symptoms were associated with ranking, overcommitment to work, and poor relationships with patients and their families (Gao et al. 2012).

Furthermore, since the present study was cross sectional, the relationship between depressive symptoms, empathic skills and job satisfaction may be viewed and vice versa. Specifically, those who were dissatisfied with their job status or had not developed the clinical skill of being able to understand the perspective of others may be viewed as more prone to depressive symptoms. Thus, an additional way to promote well-being in critical care nurses may be through interventions towards increase of job satisfaction in terms of status and recognition or aiming to promote empathic understanding (Pearson et al. 2020). Additionally, since

it was found that those employed in ICUs reported higher scores of job satisfaction than those working in EDs, special attention needs to be paid to nurses employed in EDs when it comes to interventions aiming to increase job satisfaction.

Moreover, those with 4-5 years of work experience reported lower job satisfaction than those with less than 1 year of work experience in the current work setting. This was also the pattern in the relationship between empathic skills and work experience, since those with 10-13 year of work experience reported lower empathic skills than those with one year or less of work experience. These results denote that more experienced participants had lower job satisfaction and lower empathic skills. Specifically, it seems that interaction between employees and work context through the years has an adverse impact on their feelings about work, and their ability to develop caring and compassionate relationships with healthcare service users. This finding is confirmed by Khamisa et al. (2016) who found that longer clinical experience was associated with lower job satisfaction and presence of burnout symptoms in hospital nurses. Thus, a possible explanation regarding the negative relationship between job satisfaction and length of work experience may be attributed to the added impact of work-related stressors on them. Indeed, there is a number of studies addressing the link between exposure to work-related stressors and job dissatisfaction in critical care nurses (Joshua et al. 2021; Saravanabavan et al. 2019; Mousazadeh et al., 2019). In contrast, Olajide et al. (2020) found a slight positive association between years of work experience and job satisfaction in Nigerian hospital nurses. This positive association between length of clinical experience and job satisfaction was, also, confirmed in ICU nurses by Oliveira et al. (2017). A possible explanation may include advanced skills in problem solving and stress control in experienced nurses.

Regarding the different level of empathic skills between novice and experienced critical care nurses, further qualitative and longitudinal studies are needed to address this change through the years. Yet, based on these findings, special attention needs to be given to nurses with clinical experience of 10 years and more when intervention on empathic skills enhancement are applied.

Indeed, a number of educational programs on this topic have been found to be effective in enhancing empathic skills in clinicians, such as the

empathy continuum approach, which is an evidence-based teaching model of empathy, which may be used to assess and teach the skills required to provide empathic care to patients and their families in nurses (Levett-Jones & Cant 2019). Immersive simulations that put clinicians in the role of the patient may be effective in promoting empathic response in nurses, too (Engbers 2019). Overall, training methods in empathy for healthcare clinicians include role-playing, face-to-face training and videos, with both short and long term training having high effect sizes (Smith et al., 2020).

Despite the significance of empathic skills in nursing profession, its role in nurses' well-being and work-related attitudes has not been studied adequately, especially in critical care nurses (Karanikola et al. 2020). At the same time, various constructs relevant to empathic skills exist, such as compassion satisfaction, companionate care, or compassion (Gerace et al. 2020), while only limited studies have assessed the connection of these constructs with other professional attitudes and mental distress; most importantly, existing data is ambivalent (Anzaldua et al., 2019; Craigie et al. 2016). A number of data support that although empathic skills and relevant constructs, such as compassion satisfaction, are significant skills which are negatively associated with emotional exhaustion and burnout (Mottaghi et al., 2020; Anzaldua et al., 2019), these do not seem to directly protect nurses against the development of psychiatric symptoms in nurses employed in an acute care hospital environments (Craigie et al. 2016; Salvarani et al., 2019). Thus, the present relationship between self-assessed empathic skills and manifestation of depressive symptoms needs to be further explored, including additional variables, related to personality traits, such as resilience, and to the work context, such as organizational culture (Rushton et al., 2020; Anzaldua et al., 2019). Relevant data are expected to provide a dipper understanding on personal and professional variables which may function as protective or risk factors on critical care nurses' well being, quality of professional life and work-related dysfunctional phenomena.

Limitations

The main limitation of this study includes the cross-sectional design, which does not allow any causal inferences on the direction of the connection between depressive symptoms, job satisfaction and empathic skills. Moreover, the generalizability of the findings needs to be with

caution, since the sample of the study was drowned from a particular country through a convenience sampling technique. However, the adequate response rate may partially support the generalizability of present findings into critical care nurses.

Additionally, the fact that highly dissatisfied nurses, or those who experience severe depressive symptoms are expected to be reluctant to participate in studies may be also an important limitation herein. Specifically, the degree of depressive symptoms may has been underestimated herein, and the level of job satisfaction may has been overemphasized. However, the degree to which non-participation has influences the present results is impossible to be estimated.

Most importantly, the fact that factors such as every-day life stressors, personal traumatic experiences and genetic predisposition, irrelevant to the work environment, which may be linked to depressive symptomatology or empathic response were not included in the present study design, is an important limitation, too. Moreover, not self-reported instruments on empathic response, also taking into account the perspective of patients, as well as instruments on screening of mental distress symptomatology, applied by clinicians may also have given more accurate data on the participants' variables.

CONCLUSION

Data on the association between self-reported depressive symptoms, empath and job satisfaction were confirmed herein. These findings may inform further qualitative studies and longitudinal research to etiologically assess the factors related to job satisfaction, empathic response, and critical care nurses' well-being, as well as the link with work-related hazards leading to distressing experiences. The optimal goal is to develop interventions to promote a supportive and empowering work environment for critical care nurses.

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