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A CROSS-SECTIONAL MULTICENTRE QUALITATIVE STUDY EXPLORING ATTITUDES AND BURNOUT KNOWLEDGE IN INTENSIVE CARE NURSES WITH BURNOUT

PRESEČNA MULTICENTRIČNA KVALITATIVNA RAZISKAVA O ZNANJU IN STALIŠČIH, KI JIH IMAJO MEDICINSKE SESTRE NA INTENZIVNI NEGI O IZGORELOSTI

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ABSTRACT

Aim: Although nurses in intensive care units (ICUs) are exposed to prolonged stress, no burnout prevention policy has yet been established. This study aims to determine the attitudes and "sense" of knowledge of burnout in nurses with burnout.

Methods: The study, which has a qualitative exploratory phenomenological design, was carried out in several Croatian ICUs in 2017. ICU nurses suffering from burnout according to their score on the Maslach Burnout Inventory were chosen randomly from five hospitals. Their participation was voluntary. Of the 28 participants, 86% were women (n=24) and 14% men (n=4). They were aged mainly between 36 and 45 (n=11 (40%)) and between 26 and 35 (n=10 (36%)). Semi-structured interviews were conducted up to the saturation point. The conversations were audio-recorded and transcribed verbatim. The text was analysed using inductive thematic analysis, with codes derived and grouped into clusters by similarities in meaning, and interpretation as the final stage.

Results: Emergent themes, compromised private life, stressful work demands, stress reduction options, protective workplace measures and sense of knowledge reflected a variety of experiences, attitudes and knowledge of burnout.

Discussion: Nurses with burnout provided an insight into their experience and attitudes, and the problems created by burnout. Given the poor sense of knowledge about this syndrome, there is a need to implement education on burnout in nursing school curricula, and clear strategies in the ICU environment, i.e. information, awareness-raising, and specific guidelines on coping, burnout detection and prevention. Approaching burnout prevention through attitudes/social learning may be a novel and feasible model of addressing this issue.

Keywords: burnout syndrome, coping, intensive care, nurses, experiences, attitudes

IZVLEČEK

Izhodišča: *Medicinske sestre na oddelkih za intenzivno nego (ICU) so izpostavljene dolgotrajnemu stresu, ob tem pa sistem ukrepov za preprečevanje izgorelosti ni vzpostavljen. Cilj študije je bil raziskati odnos do izgorelosti in znanja o tej okvari zdravja pri medicinskih sestrah, ki so že izgorele.*

Metode: *Študija, ki ima kvalitativno raziskovalno fenomenološko zasnovo, je bila izvedena v več hrvaških univerzitetnih kliničnih bolnišnicah, na oddelkih za intenzivno nego, v letu 2017. Medicinske sestre z izgorelostjo glede na z oceno MBItot na vprašalniku izgorelosti Maslach so bile izbrane naključno iz vsake bolnišnice in so sodelovale prostovoljno. Od 28 udeležencev je bilo 86 % žensk (n = 24) in 14 % moških (n = 4), starih 36–45 (n = 11, 40 %) in 26–35 let (n = 10, 36 %). Raziskovalna vprašanja o stališčih do izgorelosti in znanju o izgorelosti, ki prevladujejo pri medicinskih sestrah na intenzivni negi, pri katerih se je že razvil ta sindrom, so ciljala na različna področja izkušenj intervjuvancev. Polstrukturirani intervjuji so potekali, dokler ni bila dosežena nasičenost. Pogovori so bili zvočno posneti in dobesedno prepisani. Besedilo je bilo analizirano z uporabo induktivne tematske analize, pri čemer so bile kode izpeljane in razvrščene v skupine po podobnostih v pomenu; temu je sledila interpretacija kot zadnja faza analize. Odgovori na vsako vprašanje so bili organizirani v eno ali dve glavni temi, vse teme so imele podteme, te so bile izvedene iz več kod, število kod na podtemo se je gibalo med dve in pet.*

Rezultati: *Pet glavnih tem, ki odražajo izkušnje in vedenje o izgorelosti, je: (i) okrnjeno zasebno življenje s podtemami pomanjkanje prostega časa, zaostreni odnosi, projiciranje nezadovoljstva v družino, neustrezno spoprijemanje in učinki; (ii) stresne delovne zahteve (podteme: objektivni delovni pogoji, psihološke obremenitve, medosebni odnosi) in možnosti za zmanjšanje stresa z dvema podtemama (spontano uporabljene in povezane z upravljanjem); (iii) zaščitni ukrepi na delovnem mestu s štirimi podtemami (vodenje, preventiva in psihosocialna podpora, organizacijski ukrepi ter nadzor kakovosti in nagrade) in občutek znanja o izgorelosti s petimi podtemami (prepoznavanje, poznavanje in razumevanje izgorelosti, ideje o lajšanju izgorelosti in možni viri informacij (o sindromu izgorelosti)).*

Razprava in zaključki: *Izpovedi izgorelih medicinskih sester so omogočile uvid v izkušnje, stališča in težave, ki jih povzroča izgorelost. Glede na slabo znanje o tem sindromu bi bilo treba v učne programe zdravstvenih šol na vseh ravneh študija vključiti izobraževanje o izgorelosti in spoprijemanju s stresom. V oddelkih intenzivne nege pa so potrebne jasne strategije in protokoli, tj. informacije, ozaveščanje in posebne smernice za prepoznavanje, blaženje in preprečevanje izgorelosti. Pristop k preprečevanju izgorelosti preko spreminjanja stališč oziroma z uporabo socialnega učenja je lahko nov in izvedljiv model reševanja tega vprašanja, ki zadeva blagostanje in učinkovitost zdravstvenih delavcev povsod po svetu.*

Ključne besede: *izgorelost, spoprijemanje s stresom, intenzivna nega, medicinske sestre, izkušnje, stališča*

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1 INTRODUCTION

Burnout is a response to long-term emotional and interpersonal stressors, usually in the context of the workplace, and is largely determined by work environment and workload (1, 2). ICUs are a specific environment characterised by high-tech devices, high levels of responsibility, rapid patient turnover, and stress (3). Nurses employed in ICUs are exposed to work-related stress (4) and burdened with high levels of burnout (5–8), which can lead to frequent physical illness, reduced well-being (e.g. insomnia and irritability), eating problems and depression, and increased turnover, absenteeism and sick leave (6, 9). Moreover, burnout in nurses can affect the quality of patient care they are able to offer (10). Several factors have been found to be associated with the development of burnout syndrome: personal characteristics, working conditions (prolonged overload), conflicts with patients, families or other staff members, lack of support, and a feeling that the work is not useful (11–13).

Numerous studies have determined the prevalence and assessment of burnout in ICU healthcare providers, the risk factors, and the organisational impact, yet burnout therapies have been relatively unexplored (13, 14). There have been several studies conducted on nurses diagnosed with burnout aimed at identifying measures to strengthen workplace well-being (15), interventions for reducing burnout symptoms, and the application of coping strategies (16). ICU nurses' well-being was shown to be better when they re-focused on their own resources using yoga and mindfulness, together with organisational support (e.g. peer supervision, official conversation, and teamwork (16)).

This study was conducted to fill the gap in information on the attitudes and experience of burnout in participants previously assessed as burnt out. The approach also targeted the sense of knowledge among ICU nurses, e.g. describing their own knowledge as sufficient, superficial, non-existent etc. The findings could be of the utmost importance when planning burnout prevention, and could provide a better understanding of the phenomenon, which has been clearly recognised as a current problem in all healthcare systems. They might, therefore, be of international relevance.

2 METHODS

The study had a qualitative phenomenological design with semi-structured interviews, and is reported in accordance with the Consolidated Criteria for Reporting Qualitative Research checklist. The inductive approach enabled the researchers to develop a thematic framework emerging from the data ("from the ground up"), while a semantic approach was needed to explore the participants' experiences, beliefs and views (17).

2.1 Participants and procedure

This study was carried out as part of a larger cross-sectional study conducted in Croatia from April to September 2017. The participants included 620 ICU nurses working in cardiac surgery, neurosurgery, paediatric and neonatal ICUs, medical ICUs, general surgery, coronary ICUs and neurology ICUs at five Zagreb university hospitals. A convenience sampling method was used, and the target population was intensive care nurses employed at intensive care units (ICUs) at five Croatian university hospitals. Participation was voluntary, and the inclusion criterion for this study was more than six months of work experience.

A systematic review found that the most commonly used instrument in ICU burnout studies was the Maslach Burnout Inventory (MBI) (2, 13). This was therefore used for the assessment. The MBI scores were collapsed into low, moderate and high according to Maslach et al. (2). A score of 57 out of a possible 132 points on the MBI scale was considered as high burnout, according to the definition of the sub-scales (18). High burnout was reported by 72 (12%) of the 620 participants. Of this number, nurses with burnout were chosen randomly from each participating ICU to ensure diversity of experience. Randomisation was carried out using the statistical programme MedCalc for Windows, Version 15.1 (19).

The principal investigator, who did not have any bias towards the participants, either in terms of their age, profession or sexual orientation, contacted the head nurse of each participating ICU to arrange a meeting to share the background and aims of the study, and present the semi-structured interviews that would be used. In the cross-sectional study that preceded this one, several demographic characteristics were already collected, i.e. age, gender, education, time working in the ICU and type of ICU. After informed consent had been obtained, a time and place for the interviews was agreed. A series of 28 interviews with ICU nurses was eventually carried out. The principal investigator conducted the interviews, and the participants were informed about the reasons for the study. Only the interviewer and the participant were present.

Each interview lasted 30–60 minutes and was audio-recorded. Saturation was reached when a rapid decrease in new codes was noted. This occurred after the 26th participant. All the interviewees were informed about the study and gave written consent to participation. They had the possibility of withdrawing or interrupting their participation at any time.

2.2 Data analysis

A detailed transcript of the conversations (verbatim) was made, followed by an inductive thematic content analysis. According to Guest et al. (20), this is an "organic approach" to coding and theme-generation, allowing

for the in-depth exploration of experiences, beliefs and views, and providing a comprehensive understanding of the knowledge that participants had about burnout (21). The analysis was performed as follows: after becoming familiar with the data while reading the transcripts, the initial codes were generated in the first stage of open coding. Themes based on the codes were subsequently constructed by organising the data into meaningful groups. A review of the initial codes and their (re)combination into previous/new themes took place before the names of the themes were developed and defined. A theme captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set. This process corresponds to the axial coding procedure. Finally, the number of themes was reduced to a more manageable set of important themes (main themes (21)). The data from each stage was treated collaboratively and corroboratively. All the researchers coded the data and confirmed the thematic analysis to ensure that one person's perspective did not bias interpretation of the date. This made the working methods trustworthy and valid (investigator triangulation) (22).

3 RESULTS

There were 4 (14%) male and 24 (86%) female nurses aged between 18 and 25 (n=6 (21%)), 26 and 36 (n=10 (36%)), and 36 and 45 (n=11 years (40%)), with one person over 45 years of age. They were mostly single (n=18 (64%)), with one divorced person, and had secondary levels of education (n=12 (43%)) or higher. Of the total number, 11 (40%) had less than five years' work experience, while the others reported between five and ten years (n=5 (18%)), 11 to 15 years (n=3 (11%)), 16 to 20 years (n=6 (21%)) or 21 or more years of professional experience (n=3 (11%)). They were employed at Zagreb university hospitals (n=17 (61%)), Sestre Milosrdnice (n=4 (14%)), Sveti Duh (n=3 (11%)), Merkur (n=3 (11%)) and Dubrava (n=1 (3%)).

For each question, the analysis displayed the main themes that recurred throughout the conversation. An inventory of the themes, including the codes, is presented in Tables 1–4.

There were four research questions. These covered different areas of the interviewees' experience. The data collected was organised into three sub-levels: code(s), sub-theme(s) and main theme(s). The answers to each question were organised into one or two main themes. All the themes had sub-themes based on several codes, with the number of codes per sub-theme varying from two to five.

Table 1. How does your work influence your home and your private life?

PRIVATE LIFE COMPROMISED				
LACK OF LEISURE TIME (N=12)	**STRAINED RELATIONSHIPS (N=7)**	**PROJECTING DISSATISFACTION ONTO FAMILY (N=5)**	**INADEQUATE COPING (N=12)**	**EFFECTS (N=14)**
Time-consuming	Stress impacts family relationships	Emotional strain causing dissatisfaction at home	Mentally and physically tired	No negative effects
Unfinished work carried home	Frustration	Avoidance	Performing duties outside my line of work	Some positive influence
Assignments given outside working hours	Thinking about stressful events after work	Personal changes/harm	Working overtime	Occasional negative effects
Work schedule more important than family time	Overwhelming work-related strain		Unrealistic demands	

There was one main theme identified in the answers to this question (Table 1), ***Private life compromised***, with five sub-themes (lack of leisure time, strained relationships, projecting dissatisfaction onto family, inadequate coping and the effects). With regard to the main theme *Private life compromised*, the participants most often mentioned two sub-themes, namely a lack of leisure time, and strained family relationships ("*I rarely see my family*" or "*Sometimes I get calls late in the afternoon outside working hours and I have to do something for work before I go there the next time*"). On the one hand, work-related

stress manifests itself in a limited amount of leisure time (due to the long working hours and sometimes also due to work assignments/telephone calls outside working hours); on the other hand, work affects nurses' mood and mental state in such a way that they seclude themselves from family members or they pass their stress on to their families ("*I bring home the things that happen at work and I mull over them and cannot devote myself to my family as normal*").

The participants tried to alleviate the negative effects on their families as much as possible, yet most of them stated that they did not have an efficient method of achieving that goal. The two sub-themes were therefore labelled Inadequate coping and *Projecting dissatisfaction onto family*, due to the participants' lack of constructive coping strategies, so they ended up projecting dissatisfaction at home and felt mentally and physically tired. The participants felt that stress in their private lives stemmed from a lack of sleep (primarily because of night shifts) and long shifts ("*I am privately strained because of fatigue, chronic stress, insufficient rest between shifts and so on*") and also from the difficulty of the job itself. The fifth sub-theme covered the *Effects*, derived from the codes "no" and/or "occasional negative effects" and "some positive influence", for the participants who said they experienced them. Very few participants (three in all) said they did not feel any negative consequences from work stress, or even had positive impacts (resisting stress) on their private lives.

The participants' answers were grouped around two main themes: ***Stressful work demands*** (sub-themes: objective working conditions, psychological strain, interpersonal relationships) and ***Stress-reduction options*** with two sub-themes, i.e. spontaneously applied and management-related (Table 2). All agreed that their work was extremely stressful and demanding. Besides its objectively demanding characteristics, such as unpredictability, great responsibility and extreme workload, the participants also reported objective stressors, such as responsibility and rapid decision-making about human lives ("*Too much to do, not enough staff, you try to do everything you need*"). Being surrounded by human suffering, death and dying also makes the job emotionally demanding/tiring. The third cause of workplace stress is poor workplace environment and poor interpersonal relationships ("*It's not fair*" or "*I think some people work a lot more and a lot better than others do, and for practically the same amount of money*").

Besides talking about the presence of stress at work, some participants spontaneously mentioned certain techniques to reduce stress (second theme, ***Stress reduction options***). They suggested means of stress relief and work environment improvements that were already in place on their wards, e.g. socialising outside work, or creating smaller work groups on the ward that encourage teamwork and cooperation ("*I think it is important to foster a good team spirit in various ways*"). Unfortunately, there was just a handful of examples of these successful strategies. Most proposals made by the nurses were wishes and unfulfilled needs, but they included very specific guidelines on stress relief in the workplace: "*The only thing that comes to my mind is to increase the medical staff. I think everyone here gives the best that they can, but sometimes they can't do what's best because they simply don't have enough time*" or "*For example, they could provide us with the supplies needed for work that we often don't have... Providing enough equipment and supplies, providing enough staff, all of that relieves stress*". These are all management-related.

Table 2. Intensive care is said to be a very stressful environment. What is your view?

	STRESSFUL WORK DEMANDS		STRESS REDUCTION OPTIONS	
OBJECTIVE WORKING CONDITIONS (N=14)	**PSYCHOLOGICAL STRAIN (N=13)**	**INTERPERSONAL RELATIONSHIPS (N=14)**	**SPONTANEOUSLY APPLIED (N=8)**	**MANAGEMENT-RELATED (N=8)**
Stressful, demanding, high pressure	Human suffering	Poor interpersonal relationships	Socialising outside work	Mediating interpersonal relationships
Unpredictability	Emotionally overwhelming	Unfairness	Smaller teams	Efficient work organisation
Workload	Psychological toll	General dissatisfaction		Improving work conditions
Constant changes in technology				Increasing competencies

Table 3. Thinking about stress in your workplace, what do you think the employer's role is?

PROTECTIVE WORKPLACE MEASURES			
LEADERSHIP (N=8)	**PREVENTION AND PSYCHOSOCIAL SUPPORT (N=9)**	**ORGANISATIONAL MEASURES (N=12)**	**QUALITY CONTROL AND REWARDS (N=13)**
Relaxed approach	A defined system for help provision	Increased staff numbers	Regular recuperation/days off
Supervisors creating a better climate	Team building	Maintenance of equipment and supplies	Participation in the shift schedule
	Questionnaire/problems list	Education focused on job-related technical demands	Unified rules and assessment of work quality
	Stress prevention programmes	Better communication within the team	Rewards for better work
	Protocols/system of reporting	Improved working conditions	

When asked directly about the role of the employer, the nurses gave suggestions that fall into one major theme called ***Protective workplace measures*****,** and four sub-themes (Table 3). The first sub-theme was leadership: "*Creating a positive work environment, having teams that work well together, whose members work well together, because if the environment is positive, if people communicate well, then it's easier to bear it all*". The second sub-theme was creating preventive and psychosocial support. The employer needs to provide education/training on stress prevention for employees, as well as a support system when the negative impacts of stress appear: "*In the sense of support for various programmes and training in stress prevention, it doesn't exist here, so you're left to your own devices when it comes to coping*". As the third sub-theme, Organisational measures, states, prerequisites for stress reduction are better working conditions in the sense of improved staff education ("*The better the staff are educated, the less insecurity at work*"), and better-equipped wards. Finally, the fourth sub-theme recognises that rewards and quality control are also important – it seems that the existing system of rewards is not satisfying because of a lack of unified criteria for quality assessment. Nurses are aware of the differences in work quality, and feel it is both necessary and encouraging to reward better nurses and give them some privileges.

Table 4. Please can you tell me what you know about burnout syndrome?

SENSE OF KNOWLEDGE				
RECOGNISING BURNOUT (N=15)	**BEING ACQUAINTED WITH IT (N=10)**	**BEING ABLE TO DESCRIBE IT (N=14)**	**BURNOUT RELIEF (N=9)**	**SOURCES OF INFORMATION (N=5)**
No/never	Superficial knowledge	Something that happens after several years on the job	Specialist help (psychology/ counselling)	Not mentioned at school
Not enough knowledge	Being able to describe what it is	Irritated, depressed, not able to sleep because of work	Awareness-raising workshops	Heard about it at school
Experiencing burnout by myself	Knowledgeable	Tired/concerned about becoming physically ill	The team leader as a problem-solving facilitator	Lectures at work/knew about it at work
		Definitions/notions about burnout	Leaving for an easier workplace	Information from various sources, various sources of knowledge
			Do not know what to do	

The main theme is one of the recurring themes on burnout (Table 4), ***Sense of knowledge of burnout***, with five sub-themes (recognising and being acquainted with burnout, being able to describe it, ideas about burnout relief, and possible sources of information). The participants' personal experience varies: most stated that they had some notion

about what burnout might be, but insufficient knowledge, while a lower number stated that they were already feeling the symptoms of burnout (“*I think I have felt the full scope of burnout and that it struck because I thought it could not happen to me and that I could control it. I did not have support, but it wasn’t until I realised that I couldn’t function, that I couldn’t sleep, that I couldn’t function privately, that I realised I had a problem*”). This is an indicative finding, since the interviews were carried out only with those with burnout (MBI_{TOT}) and those who had stated a higher level of negative stress influence.

In line with this, it was generally acknowledged in the second sub-theme that other nurses also did not know enough about burnout syndrome, but that they could only say what it was on purely a superficial level: “*I think knowledge is insufficient and most do not understand what it means at all*”. Only a few individual participants felt that nurses were sufficiently well-informed.

How nurses feel about burnout syndrome and what they know about it is best seen through their own words: “*For me, it represents a state where I no longer have the willpower to go to work after a while when a lot of these things have accumulated*”.

The two additional sub-themes were burnout relief and sources of information, which vary (although it seems that they are primarily found at work). Some nurses had heard about the syndrome at college/school, but most had reportedly heard of it for the first time at work (from co-workers, through organised courses). There is definitely a need for certain strategies, i.e. information, awareness-raising and specific guidelines about who to turn to for help and how to proceed. An important role is attributed to the team leader/head nurse (“*The head nurse knows best what interpersonal relations are like and what kind of a work place this is, so I think she should take up a bigger role here, since she knows everything, and she should encourage people to talk to each other, to get frustrations out in a civilised manner, to just talk*”).

4 DISCUSSION

The aim of this study was to explore intensive care nurses’ experience of and attitudes towards burnout, and to identify their sense of knowledge about this syndrome. Five main themes were generated from a rich amount of data, including, inevitably, a reflection of the authors’ perspective: ***Compromised private life*** with five sub-themes (lack of leisure time, strained relationships, projecting dissatisfaction onto family, inadequate coping and the effects); ***Stressful work demands*** (sub-themes: objective working conditions, psychological strain, interpersonal relationships) and ***Stress reduction options*** with two sub-themes (spontaneously applied and management-related); ***Protective workplace measures*** with four sub-themes (leadership, prevention and psychosocial support, organisational measures, and quality control and rewards) and ***Sense of knowledge*** of burnout with five sub-themes (recognising and being acquainted with burnout, being able to describe it, ideas about burnout relief and possible sources of information).

The study tried to present what a group of ICU nurses felt, experienced and knew about burnout. Their perceptions and perspectives were all analysed, and then used to create an understanding of this part of their professional experience in a broader sense. The nurses’ expectations and proposals for protective workplace measures, e.g. leadership, prevention and psychosocial support, organisational measures, and quality control and rewards are among the very illustrative findings of this study (Table 3). In addition, the results also showed that participants had a poor sense of knowledge about burnout (Table 4).

High dependency departments are very stressful environments and can lead to a greater incidence of burnout, especially by way of emotional exhaustion and poor personal accomplishment. Nurse education has been increasing in the past decade, but it has not been followed by more competencies and greater autonomy (23). This study aimed to provide an insight into the attitudes towards and knowledge of burnout among ICU nurses with burnout. A poor sense of knowledge of burnout was identified in the participants (Table 4). The participants tried to alleviate the adverse effects on their families as much as possible, yet most of them stated that they did not have an efficient method of achieving that goal (Table 1). This accords with Shanafelt et al. (10), who reported poor communication with families, with the effects of work spilling over into personal life in healthcare providers who came home upset and unhappy.

The participants felt that the causes of the adverse effects (Theme 3, Table 1) and stress in their private lives stemmed not only from a lack of sleep (primarily because of night shifts) and long shifts, but also from the difficulty of the job itself (Table 2). Research has shown that high stress contributes to the development of lethargy, which can worsen further due to difficulty sleeping (24, 25). The participants reported an array of difficulties, and the study’s findings confirmed that ICU nurses considered their work to be extremely stressful and emotionally demanding (Table 3). The interviewees reported objective stress sources, such as responsibility and rapid decision-making about human lives (Table 3), similarly to Donchin (26), who described the ICU as an extremely stressful environment, and other authors who focused on workload as an independent factor in the development of burnout (5). Research exploring a reduction in burnout levels has shown promising results for burnout recovery when combined with individually and professionally focused

activities (27, 28). An improvement in work organisation has been shown to be the most important factor for reducing stress (29), and the need for a balanced interaction between job demands and resources in order to prevent burnout in hospital nurses has been confirmed among Croatian hospital nurses in previous research (30).

In this study, one frequently mentioned cause of workplace stress was an unpleasant or poor work environment and poor interpersonal relationships (Table 3). Others have also confirmed that the work environment and interpersonal relationships are linked to burnout (1, 9, 31). This study participants suggested some solutions to address occupational stress, including changes in organisational and working conditions, refining interpersonal communication, and obliging supervisors/superiors/head nurses to implement them (Table 4), which accords with research findings that stress in hospital nurses is related to the organisation of work (32, 33). In their cross-sectional survey conducted in 2006-2007, Golubić et al. identified several major groups of occupational stressors in hospital nurses: organisation of work and financial issues; public criticism; hazards and interpersonal conflicts in the workplace; shift work; and professional and intellectual demands. They advised hospital managers to develop strategies to address and improve the quality of working conditions for nurses in Croatian hospitals (34). Other authors have also proposed that head nurses be encouraged to accept suggestions from staff, given how employees feel about their work and how personal relationships in the workplace affect their well-being (35). This is similar to this study participants' expectations and proposals (Tables 3, 4). Providing specialist help and awareness-raising workshops (Table 4) could help to reduce nurses' occupational stress levels and staff turnover (Table 4, "Leaving for an easier workplace"), and enable nurses to maintain their capacity to work.

This study showed that there was an insufficient sense of knowledge of burnout syndrome, with information coming from a variety of sources (Table 4). This makes it difficult to diagnose burnout early, and to prevent and possibly treat it. However, the ICU environment should primarily target the prevention of burnout (36). This could be accomplished by developing capacity-building to help staff become more aware of the issue, and encouraging them to talk about it (37). It has already been suggested in Croatia that developing prevention plans and including psychological education as an intervention would greatly reduce both the incidence and the adverse effects on the health system (38). Given that differences in job satisfaction and psychological and subjective well-being have been found to be conditioned by level of education, i.e. nurses with a higher level of education are more satisfied with their jobs (35), continuing education could affect both burnout and job satisfaction. Within continuous education, lectures should provide information about coping skills (39). There is definitely a need for certain strategies for ICU nurses, i.e. information, awareness-raising and specific guidelines about who to turn to for help and how to proceed (Table 4).

To produce more conclusive findings with an international impact, it is of the utmost importance that research using a mixed (quantitative and qualitative) methodology is carried out again in the region, in hospitals with similar organisational set-ups and conditions. Aside from this, absenteeism and career changes related to working conditions and demands in ICU nurses should be taken into account when planning further research.

4.1 Strengths and limitations of the study

This study was focused on how ICU nurses perceived and experienced burnout. The results have provided us with a profound and detailed understanding of this phenomenon. This study's findings should also help hospital management and other decision-makers to better understand nurses' concerns. The results based on phenomenological analysis can be recognised as natural rather than artificial findings. Although data collected by interview offer insights on the relationship between a stressful working environment and burnout, and on the consequences on ICU nurses' well-being and family life, the qualitative nature of the data limits generalisation of the conclusions to the entire population of ICU nurses and technicians with burnout. Considering the fact that this form of research generally works with small groups, it can be dubious to claim the results are typical of all ICU nurses. The reliability and validity of this approach is a primary limitation of this study. Although data-gathering took up a great deal of time and resources, and the results are valuable because they provide us with a better understanding of nurses' perceptions and feelings with regard to stressful working conditions and burnout, they lack objective measures and specific behaviours that manifest these thoughts and feelings. This was partly overcome by means of the semi-structured approach (vs. completely unstructured), which made it possible to compare information and organise it into meaningful patterns and themes. However, potential bias should be taken into account. Researcher-induced bias might have influenced the outcome of the analysis, since this type of research is based more on opinion and judgement than on results, meaning that this qualitative study, as in all qualitative research, would be difficult to replicate. Given that qualitative research is open-ended, it is safe to conclude that the participants had more control over the content of the data collected.

Qualitative phenomenological research is not the proper means of knowledge assessment, so it is only feasible to discuss the participants' sense of their own knowledge. The suggestion would be first to provide knowledge about burnout in nurses' education, then to follow up the effects and possibly provide some ongoing skill-development

programmes for this professional group as a general preventive measure.

Quantitative data is required for circumstances that need statistical representation. That is not part of the qualitative research process.

In the near future, it will be very important to cross-reference the data obtained in this study with quantitative data.

5 CONCLUSIONS

In order to prevent or reduce burnout syndrome levels, compromised private life and stressful work demands, the various levels of the nursing education system should address stress reduction options, protective workplace measures and the poor sense of knowledge among ICU nurses. These should also be addressed within administrative and institutional settings. The information provided can help ICU nurses, and nurses in general, to understand how burnout affects their professional and family lives, and offers a variety of methods aimed at mitigating these harmful effects. Finally, the findings can motivate healthcare professionals with limited skills and/or knowledge of burnout to at least accept the necessity to modify their coping strategies so that they are more problem-oriented and constructive.

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CONFLICTS OF INTEREST

The authors declare that no conflicts of interest exist.

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ETHICAL APPROVAL

The study procedures were conducted in accordance with the Declaration of Helsinki, and the study was approved by all the ethics committees at the university hospitals at which the study was conducted (Zagreb University Hospital, 8.1-16/179-2, 21 November 2016; Sestre Milosrdnice University Hospital, EP-18818/16-2, 28 November 2016; Merkur University Hospital, 0311-12251, 8 December 2016; Sveti Duh University Hospital, 01-1916, 1 June 2017; Dubrava University Hospital, EP 17-05-2017, 17 May 2017).

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