ORIGINAL ARTICLE

Effects of perceived job social support on emotions experienced by nurses: the role of difficulties with patient care

Dorota Wlodarczyk[1], Katarzyna Surma[2]

1. Department of Medical Psychology, Medical University of Warsaw, Poland. 2. Nursing Division, Medical University of Warsaw, Poland.

Correspondence: Dorota Wlodarczyk. Address: Department of Medical Psychology, Medical University of Warsaw, ul. Żwirki i Wigury 81A, 02-091 Warsaw, Poland. Email: dorota@wde.com.pl

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Abstract

The focus of the presented research is the emotional state of nurses. It was considered in the context of difficulties with patient care that nurses come across in their daily professional work and in the context of social support perceived by them as available in their working environment. This research examines both promotive and protective effects of perceived job social support on the emotional state of nurses. The postulated intervening variable was difficulties with patient care experienced by nurses. The cross-sectional research group consisted of 100 nurses, 94% women, 50% working in hospitals and 50% in other health-care facilities, predominantly public (87%). Perceived social support at work and positive and negative emotions were measured with existing questionnaires (SSS-8 by Cieslak and POMS by McNair et al.). The difficulties with patient care were determined using an original tool developed by the researchers specially for this study (including six types of difficulties). To verify hypotheses, multiple regression analyses and a bootstrap approach was adopted. First, promotive effect of social support was confirmed in cases of practical and emotional support from Superiors. Second, perceived social support indirectly influenced nurses' negative emotions in the following way: practical social support from Doctors, Other Nurses and Team Members, intensified difficulties with patient care resulting from *demand for information by patient and family* that in turn increased negative emotions (protective effect was negative). The research provides valuable results for professional practice.

Key words

Nurses' emotions, Difficulties with patient care, Sources of social support, Types of social support

1 Introduction

1.1 Importance of the problem

Stable emotional conditions are a very important factor for worker's productivity impacting the course and consequences of their actions. It is particularly important in professions that are both social and service oriented where contact with people suffering and seeking help is the key objective. Nursing satisfies all of these criteria [19]. Due to the high

expectations for task orientation and the fact that nurses are seen as people predetermined to ceaselessly solve specific problems, the emotional aspect of their functioning is marginalized, ignored and sometimes perceived as undesired. From the psychological point of view, emotions (or affect, treated as a broader concept) are an indispensable and important element of human functioning and the marginalization of this aspect can be harmful [10]. Specifically, it refers to the situations when intensity of negative emotions is so strong that it renders functionality in other spheres difficult or impossible. Moreover, recognizing the sources of nurses' emotions well is one of the fundamental elements facilitating the development of effective emotional control and adequate strategies to cope with the adversity at work [5]. The research so far confirmed that the number of factors like shift work, sub-optimal levels of stuffing or patient acuity, workload and insufficient job support contribute to the deterioration in nurse mood at work [21]. However, these factors usually do not act in isolation but rather in specific combinations influencing each other mutually. Thus, in this research nurses' emotional state is considered in the context of both social support and difficulties with patient care.

1.2 Emotions and their outcomes in nurse work environment

Emotion can be described as a subjective psychological state usually accompanied by certain cognitive processes, somatic changes and expressions. It initiates a priority for an action program connected to the given emotion [14]. An emotion is felt as positive when an event accords with the objectives and interests of the individual and is negative when in discord.

A nurse's emotional state is significant for many reasons but two are particularly important: intrapersonal effect and interpersonal effect [6]. First, emotions impact the way of thinking and acting. They affect perception and information processing and the interpretation of facts as well as decision making [15]. The majority of consideration has been given to negative emotions and it has been shown that high levels are connected to worsening of human functionality. For example, it has been found that anxiety narrows attention span and encourages defensive behavior, whereas frustrated needs cause anger which transforms into aggression against the agent or a convenient target, and in situations where information is incomplete emotional factors increasingly impact judgment, especially social evaluation [27]. The most recent research shows that motivational intensity of emotion is an important factor determining the affect-cognition interaction: affect low, as opposed to high, in motivational intensity facilitates attention and cognition broadening (e.g. flexibility) and memory for details [14, 22]. This pattern seems to apply to both negative and positive emotions. In recent years the discussion in the study of professional functioning has been shifting to focus on positive emotional states including work engagement and job satisfaction [2]. For example, joy facilitates the desire to continue the activity that causes it. It makes cognitive organization more flexible and contributes to creativity as well as assistive behavior and cooperation [12]. So a subjectively experienced emotional state is not only a factor determining the effectiveness of an action but also of a sense of satisfaction and happiness. Significantly intensified negative emotions with low levels of positive emotions accompany emotional exhaustion which is an essential element of burnout which underlies various psychological conditions and can be a risk factor for the development of psycho-somatic disorders and somatic illnesses [20].

Second, emotions fulfill an important social function. They are a very important source of information about attitudes, goals and intentions of the people experiencing them [28]. For an observer, a change in facial expression, muscle tension, and tone of voice can be a valuable guideline for expected behaviors in others. It turns out that anger expressed by workers is connected with a stronger tendency to obey and give ground among observers, and satisfaction expressed by workers generates more positive evaluations of service by recipients but also increases readiness to make demands [32]. In recent years interpersonal processes like emotional contagion or crossover of burnout at work have been gaining more and more interest. They include inter-individual transmission of feelings and attitudes from one employee to another and, consequently, the convergence of emotion [34].

1.3 Effects of social support on emotion in nurses: types and sources of support

In the context of nursing social support, it seems particularly vital for the sake of its potential for generating or modifying emotions. The research to date led to important conceptual distinctions in the area of support [31]. The main differentiated

subcategories include functional support (for example, emotional and informational) and structural (objectively existing and available social networks) [35]. In addition, there is a distinction between perceived (potentially available according to individual's conviction) and received support [16]. It is also necessary to consider the source of support, in other words, to determine where the assistance originates, for example, from coworkers or superiors. It follows from the research that the positive effects of social support appear more often when the sources of support match the specific work context [17]. Studies show a variety of positive consequences for social support [3]. First, its promotive effect was established. It means that by satisfying important human needs, social support can enhance positive emotions and alleviate negative emotions [25]. Second, social support may have protective effect on wellbeing by changes in individual perception of stressors at work. For example, receiving support or believing in its availability, people may develop more adaptive behavior what keeps them safe from potential difficulties. Third, in the context of stressful situations, the buffering effect of support is considered to ameliorate the harmful consequences of stress [25]. Although the majority of studies have reported a variety of positive outcomes of support, it is also worth mentioning that there are studies reporting its negative influence. For example, Deelstra et al. [7] demonstrated that receiving instrumental support at work may trigger negative reactions.

1.4 Difficulties with patient care

Following the ways in which social support affect nurses' wellbeing, it would be important to consider whether it may change the perception of tasks and burdens related to their everyday professional activity. Considering the nature of nursing, contact with patients involves various physical, psychological and social aspects of patient functionality which are closely connected to the relationship with the patient's family [26]. This is due to the various functions that a nurse fulfills for the patient such as caring and nurturing through illness, participating in the process of therapy, preventative care and health promotion as well as preparing the patient for self care and their family to take charge of care at home. The biggest difficulties in nursing related to the patient's physical condition include patient acuity and intensity [9]. The more help the patient needs to satisfy their basic needs (nourishment, physiological needs, personal hygiene) and the more serious their condition (no chances for improvement in life quality, high risk of death, and certain death) the bigger the burden on the health care provider staff. A particular problem is inadequate communication and cooperation with the patient and with their family. There is a high risk that the aforementioned burden will bring a sense of depression and burnout which also impacts coworkers and families [37]. Thus, the term difficulties with patient care is relatively broad and encompasses different characteristics of patient's functioning in nurse-patient interaction.

The ways nurses cope with such difficulties depends on many factors like leadership and management issues, relationship with other clinical staff, workload, but also their competences resulting from education system. It is worth noticing that in European Union countries nurses' education is conducted only on the higher education level and obtaining a Bachelor's degree is a condition of receiving nurses' right to practice. Further academic education and obtaining a Master's degree is also possible. Additionally, nurses who obtained nursing qualifications prior to their country joining the European Union (it refers to Central and Eastern European countries) were obliged to complete higher education according to EU regulations [36].

1.5 Research objectives

The first goal of this study was to identify the higher-order structure of difficulties with patient care in the sampled group. The second goal was to verify both promotive and protective effects of perceived social support on the emotional state of nurses. The theoretical model of relationships between the study variables is presented in Figure 1.

The following hypotheses were formulated. Firstly, it was expected that perception of job support from different sources would improve wellbeing what would manifest in higher positive emotions and lower negative emotions (protective effect, path c at the Figure 1). Secondly, job support by changing the perception of difficulties with patient care may indirectly effect emotions of nurses (promotive effect). Additionally, the significance of selected socio-demographic and work-related factors potentially associated with nurses' emotions were controlled.

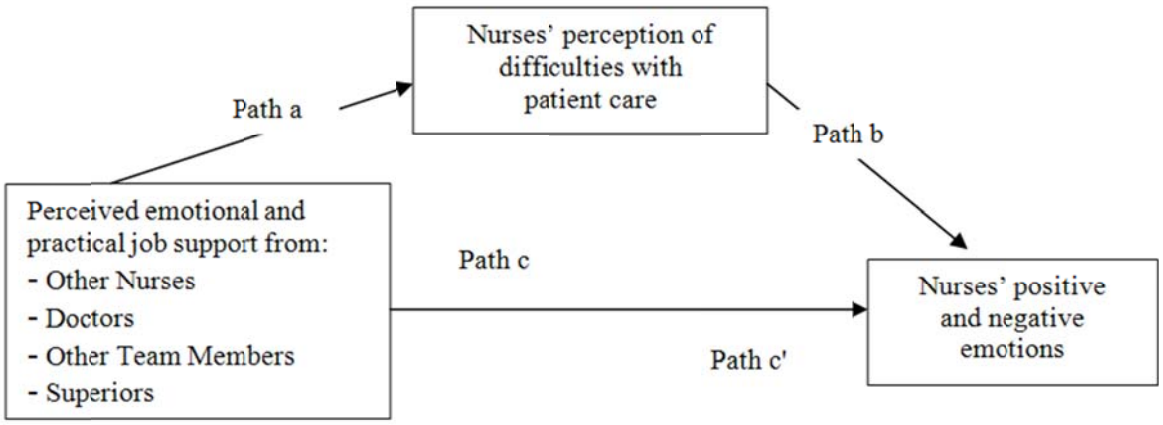

Figure 1. Theoretical model of relationships between the study variables (path a – the effect of support on difficulties with patient care, path b – the effect of difficulties with patient care on emotions, path c – effect of support on emotions, path c' – relation between support and emotions after controlling for difficulties).

2 Method

2.1 Design, sampling and procedure

The study had a cross-sectional design. Data was gathered from November 2010 to February 2011. A convenience sample was recruited using the following inclusion criteria: nurses with a Bachelor's degree employed on a full-time bases as a direct-care provider. The research was conducted among nurses studying during a 2nd year extramural master's course at the Medical University. Before the research began the necessary permission was secured to conduct the surveys. The institutional review board supervised by the Dean of the Faculty approved the project. The research was conducted among nurses enrolled in academic courses in the form of seminars of about 20 people. With proper notice, permission from seminar instructors was secured and a schedule for conducting the surveys was established. Then a manual describing the course and research objectives was presented and permission from participants was secured. The research was voluntary, anonymous, and everyone had the right to refuse to participate. The questionnaires were handed out always organized in the same order (as listed below). The examination lasted around 30 minutes. All invited participants agreed to participate.

2.2 Participants

One hundred participants, including 94 (94%) women took part in the research. They were active professional nurses, the majority of whom were studying at the Medical University as weekend students. They were between 23 and 59 years old (M=36.65; SD=10.15) and their professional experience in nursing ranged between six months and 39 years (M=12.81; SD=9.93). They were employed in hospitals (50%) and other medical care facilities such as clinics and care homes. The facilities were predominantly public (87%). The majority of the participants worked as nurses (only 10% fulfilled managerial functions) and worked in shifts (75%). What is more, 61% of nurses were employed in a single facility, whereas, the remainder were employed in two or more workplaces. The majority (73%) were married and lived in cities (35% in large cities and 26% in mid-sized cities and towns).

2.3 Measures

Social support was measured with a modified version of Social Support Scale-8 developed by Cieslak [25]. Emotions were assessed using a Polish adaptation of the Profile of Mood States, survey developed by McNair, Lorr & Droppleman [8]. The difficulties with patient care were determined using an original tool, Difficulties with Patient Care Inventory, which was developed specially for this study by the researchers.

Difficulties with Patient Care Inventory (DPCI) consists of 30 statements concerning the physical, psychological and social condition of the patient and his/her family (for examples see Table 1). Participants are asked to determine how often they face a given problem in their daily work. The response format was from 1 (never) to 5 (very often). The data acquired with this tool underwent a factor analysis which will be presented in the next section. The results of the factor analysis served as the basis for generating scales which reflected particular difficulties with patient care (S 1 to S 6, see Table 1 for detailed description and reliability coefficients). The higher the score the more frequent the occurrence of a given difficulty.

Social Support Scale-8 (SSS-8) measures perceived social support. It contains 8 statements, half of which concern emotional support (e.g. "To what degree can you count on being able to share your worries?") and the other half concern practical support (e.g. "To what degree can you count on receiving information necessary to execute job tasks?"). These refer to the four sources of support. The participants answered a total of 32 questions (8 questions for each source of support) on a scale from 1 (a small extent) to 5 (a large extent). The modified version includes the following sources of support: Superiors, Other Nurses, Doctors and Other Team Members. The Cronbach's alpha coefficients for individual scales of SSS-8 were above .90 which shows a high level of reliability: emotional support α=.94, practical support α=.94, support from Superiors α=.93, from Other Nurses α=.92, from Doctors α=.92, from Other Team Members α=.92. The high level of the score in a given scale means high level of perceived support.

Profile of Mood States (POMS) is a psychological questionnaire which is used to measure emotional state. It contains 65 adjectives describing psychological comfort and well-being (e.g. tense, worried, relaxed and furious). Participants are asked to answer on a five point scale (from 0- definitely not to 4- definitely yes) for the degree to which they experience a given mood or feeling on a particular day. The original version of survey consists of 6 scales measuring various types of emotion including five negative emotions (e.g. tension-anxiety, depression-dejection, anger-hostility) and one positive emotion (vigour-activity). For the purpose of this research, scores pertaining to negative emotions were evaluated with factor analysis and one global indicator was obtained (explaining 75% of the total variance). Thus, by means of POMS, two indicators of emotions were computed: negative and positive emotions (Cronbach's alpha coefficients in the study group: .88 and .86 respectively). The higher scores are reflective of more intense emotions.

Additionally, data on selected socio-demographic characteristics (e.g. age, marital status, place of residence) and work-related factors (e.g. years worked as a nurse, post, number of workplaces) was also collected and summarized.

2.4 Statistical analyses

Statistical analyses were carried out on SPSS V20. Factor analysis was used to identify the higher-order structure of difficulties with patient care in the sampled group. Research hypotheses were verified by means of multiple regression analyses and the bootstrapping approach. Additionally, correlational analyses and analyses of variance were performed.

3 Results

3.1 The role of controlled variables

Before statistical analysis began, the distributions of variables were matched to normal distributions. According to the Kolmogorov-Smirnov test the vast majority of results were statistically irrelevant (p>.05), so it could be assumed that the distributions satisfied the criteria for normality.

In the research, selected socio-demographic and work factors were controlled for. The only significant work related factor was the number of workplaces. It turned out that nurses working in only one place, compared to those working in more than one place, had higher level of negative emotions (F=6.96; p=.01).

3.2 Difficulties with patient care: results of factor analysis

The first step of the analysis was to establish the types of difficulties with patient care as perceived by nurses in the study group. In order to do that, the results from the DPCI were subjected to factor analysis. The Principle Components and Varimax Rotation methods were used [4]. The most important conditions to perform factor analysis are proper sample size and the magnitude of factor loadings. The recommendations available in the literature pertaining to the number of people per statement are quite divergent, ranging from 2 (very liberal) [1] to 10 or 15 (very restricted) [11]. In this analysis only a liberal criterion was met, it was more than 3 people per statement. All thirty statements from the DPCI were introduced into the analysis but 27 statements entered in the final factor solution. Three statements' factor loadings were too low. The analysis revealed that the vast majority of factor loadings reached values over .60. Field (p. 647) [11] quotes that if a factor has loadings greater than .60 it is reliable regardless of sample size. As a result, six factors were singled out which explained 73% of the total variance (Eignevalues greater than 1) [18]. Table 1 shows the descriptions of the acquired factors in the form of a general name, number of items in a given factor, Cronbach's alpha and an example item.

Table 1. Results of factor analysis for Difficulties with Patient Care Inventory (N=100)

Factor/Scale	N	Alpha	Example
1. Patient acuity and intensity	12	0.96	*"Patient requires help to change their body position."*
2. Bad relations with family	5	0.86	*"The patient's family does not cooperate or participate in care."*
3. Patient dissatisfaction	3	0.79	*"The patient filed a complaint against your actions"*
4. Patient aggression	3	0.75	*"The patient is verbally aggressive towards you."*
5. Demand for information by patient and family	2	0.75	*"The patient demands information you can't disclose."*
6. Impact of burden on nurse comfort and team dynamics	2	0.55	*"Serious patient condition/pessimistic prognostication impacts you negatively."*

The first factor includes the largest number of statements which concerns different aspects of patient wellness (necessary assistance to maintain hygiene, nourishment and mobility) and seriousness of patient condition (treatment doesn't yield expected results, risk of death and death). The other four factors refer to a larger extent to psychological issues like patient dissatisfaction and aggression, and the communication with the patient and their family (bad relations and demand for information). There is a separate factor concerning the nurse's subjective sense of burden resulting from interaction with a patient.

The acquired factors have in the majority high or very high Cronbach's coefficients which shows their high reliability. The only exception is Factor 6 which had an alpha score of .55 and may be recognized as merely satisfactory. It requires a cautious interpretation of the results connected to this factor.

The factors are interrelated. Most of the correlations are weak (below .30) or statistically irrelevant however some are above .40. Scale 3/*patient dissatisfaction* is connected with Scale 2/*bad relationship with family* (r=.45; p<.01), with Scale 4/*patient aggression* (r=.47; p<.01) and with Scale 5/*demand for information by patient and family* (r=.47; p<.01). Scale 2 correlates with Scale 4 (r=.46; p<.01).

3.3 Social support, difficulties with patient care and emotions in nurses

The analysis concerning social support began by analyzing the significance of particular sources of support (Superiors, Other Nurses, Doctors and Other Team Members) regardless of types of support. The correlational analysis showed that only perceived support from Superiors was connected with the experienced emotions: with a lower level of negative emotions (r= -.21; p<.05) as well as a higher level of positive emotions (r= .24; p=.02). When the type of social support regardless of its source was taken into account only emotional support was connected with positive emotions (r=.24; p<.05).

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When the type and the source of support was considered simultaneously, the results were slightly more varied (see Table 2).

Table 2. Correlation coefficients (*r* Pearson) between types and sources of social support, difficulties with patient care, and positive and negative emotions (N=100)

	Practical Support from				Emotional Support from				PE	NE
	Nurses	Doctors	Team	Superior	Nurses	Doctors	Team	Superior		
S 1	.01	-.34**	-.22*	-.17	-.20*	-.32**	-.28**	-.13	.06	-.10
S 2	.01	.09	-.14	.08	.08	.05	.09	.01	.11	-.09
S 3	.02	.15	.05	.09	-.03	.14	.03	-.12	-.01	.35**
S 4	.10	-.23*	-.28**	-.31**	-.07	.13	-.24*	-.18	-.01	.03
S 5	.28*	.32**	.28**	.03	.11	.11	.07	.08	-.18	.32**
S 6	.06	-.15	-.15	.05	.05	.05	-.10	-.07	-.03	.04
PE	.09	-.05	.01	.18	.24*	.14	.18	.27**	-	-
NE	.04	.18	.01	-.19	-.06	.05	.01	-.21*	-	-

Notes: S 1: *Patient acuity and intensity; S 2: Bad relations with family; S 3: Patient dissatisfaction; S 4: Patient aggression; S 5: Demand for information by patient and family; S 6: Impact of burden on nurse comfort and team dynamics*; PE – Positive emotions; NE – Negative emotions *p<.05; **p<.01

Table 2 presents that the higher perceived emotional support from Superiors and Other Nurses is the more intense the positive emotions are. Negative emotions relate negatively only to emotional support from Superiors. Surprisingly, practical support from any sources does not link with both positive and negative emotions.

As can also be seen in Table 2, only two types of difficulties with patient care were connected with negative emotions reported by nurses: *patient dissatisfaction* (Scale 3) and *demand for information by patient and family* that the nurse can not disclose (Scale 5). No significant correlations with positive emotions were observed.

We also observed significant connections between practical and emotional social support from different sources and the frequency of difficulties with patient care. Perceived social support from Doctors relates to lower number of problems resulting from *patient acuity and intensity and patient aggression* and more difficulties concerning *demand for information by patient and family*. The same pattern of connections refers to practical support from Other Team Members. Perceived practical support from Superiors links with less number of problems resulting from *patient aggression*, whereas this type of support from Other Nurses again is related to increase in *demand for information by patient and family*.

Perceived emotional support from Doctors, Other Team Members and Other Nurses correlated with lower number of problems resulting from *patient acuity and intensity*. Support from Other Team Members also coincided with less difficulties concerning *patient aggression*. High emotional support from Doctors was related to more intense *demand for information by patient and family*.

3.4 Perceived social support as a predictor of nurses' emotional state

To verify the hypothesis on predictive role of perceived job support for nurse's emotional state, multivariate regression analyses were conducted, separately for sources of practical and emotional support and separately for positive and negative emotions as outcome variables (four regression analyses, Table 3). It turned out that significant predictors of negative emotions were practical support from Doctors, β=.34; p=.02 and from Superiors, β=-.30; p=.03 (F=3.08; p=.02) and emotional support from Superiors, β=-.40; p=.01, but the model was not significant (F=2.14; p=.08). In regards to positive emotions, the only predictor was practical support from Superiors, β=.28; p=.04, but both models were insignificant (F=1.69; p=.07 for the model including sources of practical support and F=1.9; p=.08 for the model including sources of emotional social support). These analyses revealed the important role of practical and emotional support from

Superiors for predicting nurses' emotions. It is related to an increase in positive emotions and a decrease in negative emotions. At the same time practical support from Doctors elevated the level of negative emotions.

Table 3. Results of regression analyses: perceived social support as a predictor of nurses' emotional state

Predictor	B	SEB	Beta	Model fit	R^2
Negative emotions					
Emotional support from Other Nurses	.01	.04	.05	F=2.15	.09
Emotional support from Doctors	.03	.04	.14	*p*=.08	
Emotional support from Other Team Members	.03	.04	.12		
Emotional support from Superiors	-.09	.04	-.40*		
Practical support from Other Nurses	.01	.04	.01	F=3.08	.12
Practical support from Doctors	.07	.03	.34*	*p*=.02	
Practical support from Other Team Members	-.01	.04	-.06		
Practical support from Superiors	-.07	.03	-.30*		
Positive emotions					
Emotional support from Other Nurses	.18	.27	.12	F=1.91	.07
Emotional support from Doctors	-.06	.22	-.04	*p*=.11	
Emotional support from Other Team Members	-.02	.25	-.02		
Emotional support from Superiors	.28	.22	.21		
Practical support from Other Nurses	.18	.27	.10	F=1,69	.07
Practical support from Doctors	-.14	.20	-.11	*p*=.15	
Practical support from Other Team Members	-.21	.21	-.16		
Practical support from Superiors	.37	.18	.28*		

* $p<.05$

3.5 Establishing indirect effects of perceived social support on nurses' emotional state through difficulties with patient care

Trying to gain the understanding of the relationships among studied variables, it was postulated that perceived job support affects nurses' emotional state not only directly but also indirectly, and difficulties with patient care is considered an intervening variable. According to Preacher and Hayes [29] an important distinction should be drawn between the terms mediated effect and indirect effect although they are used sometimes interchangeable. It is possible to find a significant indirect effect which does not represent mediation. To establish mediated effect it is necessary (besides other conditions) that total effect between independent and dependant variables is present. When assessing indirect effect, there is no such assumption [29].

The results of correlations included in Table 2 provide preliminary suggestions where difficulties with patient care may be an intervening factor in the linkage between sources of emotional and practical support, and nurses' emotions. The significant correlations were observed between emotional support from Other Nurses and positive emotions (r=.24) and from Superiors and positive emotions (r=.27). There are some bases to assume that difficulties resulting from *demand for information by patient and family* may intervene in the relationships between selected sources of practical support and negative emotions.

To verify the hypothesis on intervening role of difficulties with patient care in the relationships between perceived social support and nurses' emotional state, a bootstrap approach was adopted [29]. It is one of the most widespread approaches (besides path analysis) facilitating the assessment of both indirect and mediated effects. The number of bootstrap resamples was 2000. There were no significant mediating effects. Summary of the results pertaining to indirect effects of job social support on nurses' emotions is presented in Table 4. The significant findings refer only to negative emotions.

As shown in Table 4, significant indirect effects of job social support on nurses' emotions are present in cases of practical support from Doctors, Other Nurses and Other Team Members only with reference to negative emotions. The intervening variable is *demand for information by patient and family*. The indirect effect is significantly different from zero at $p<.05$ (zero is not included in the 95% confidence interval). It is worth remembering that the total effects of practical support from that source on nurses' emotions were not significant. So we can not call these effects mediating [29]. Following the data presented in Table 2 we can state that practical support from Doctors, Other Nurses and Other Team Members may change the perception of difficulties resulting from *demand for information by patient and family*, precisely their frequency increases. Simultaneously, the presence of these difficulties, elevate the level of negative emotions. It would indicate that perceived practical support from these sources has a negative indirect effect on nurses' wellbeing. These relationships do not refer to perceived practical support from Superiors and to emotional support from any of analyzed sources.

Table 4. Summary of indirect effects with difficulties with patient care intervening the linkage between perceived social support and negative emotions –a bootstrap approach

Parameters	**Practical social support from**			
	Nurses	**Doctors**	**Team**	**Superiors**
Intervening variable	**Demand for Information by Patient and Family**			
Path a	.28***	.23***	.28***	.26***
Path b	.10**	.08**	.07**	.009
Path c	.001	.04	.001	-.04
Path c'	-.03	.01	-.02	-.04
PE	.029*	.021*	.020*	.002
LL95CI	.007	.004	.005	-.012
UL95CI	.061	.045	.43	.020

Notes: Paths: a, b, c, c' – see Figure 1; PE – The bootstrap point estimate; LL95CI – lower limit of 95% confidence interval for PE; UL95CI – upper limit of 95% confidence interval for PE

4 Discussion

The focus of the presented research is the emotional state of nurses. It was considered in the context of difficulties with patient care that nurses come across in their daily professional work and in the context of social support perceived by them as available in their working environment.

First, the factor analysis of the initial 30 difficulties with patient care allowed the isolation of six higher order factors. It is worth noting that the acquired picture is a consequence of a holistic approach to the patient and their family as seen by nurses (it concerns the physical, psychological and social aspects). It allows for the determination of the nature of the problematic daily interaction with patients. It calls attention to the high number of factors that concern psychosocial questions despite the fact that the initial pool of statements included a broad range of elements concerning physical condition and patient wellness. Finally, all items pertaining to physical condition and patient wellness loaded only one factor patient acuity and intensity. It is possible that difficulties belonging to this group are appraised by nurses as similar because they require a similar set of professional skills. The rest of the difficulties predominantly demand confrontations with various psychological issues concerning the patient and their family.

Second, not all of these difficulties with patient care were connected with the emotions experienced by nurses in a given moment. Correlations were only found in the case of patient dissatisfaction and demand for information by patient and family. These elements were significantly connected with negative emotions like confusion-bewilderment, tension-anxiety, anger-hostility. It would mean that these are the characteristics of clinical practice that are especially

problematic in patient-nurse interaction [26]. It seems that frequently facing such difficulties may have enduring effect on nurse mood and influence subsequent care provision. It can promote faster exhaustion of psychological resources and lead to emotional exhaustion and its further consequences [20]. However, a question arises whether the lack of correlations between other difficulties with patient care and emotions experienced by nurses indicates a real lack of relationships. It seems very likely that in a lot of professional situations the exposure to factors burdening a nurse is successfully modified by effective coping undertaken by them. But this variable was not taken into account in this study. The emotion-coping interplay is a very serious methodological problem often faced in research related to coping with stress: it is difficult to overcome even in prospective research [13, 24]. Thus, it seems possible that difficulties resulting from *patient acuity and intensity*, *bad relations with family*, *patient aggression* and *impact of burden on nurse comfort and team dynamics* were not directly connected with the nurses' emotions as they were able to successfully cope with these types of problems. Experienced nurses (like in the study group where the average job seniority was approx. 13 years) are in possession of a range of practical skills which allow them to actively tackle such challenges. Proper understanding and acceptance of their professional role also protects them from helplessness, defeat and an excessive sense of responsibility. This interpretation would suggest that the nurses handled *patient aggression* and *bad relations with family* (mainly lack of cooperation) better than cases of *patient dissatisfaction* and *demand for information by patient and family*. Experiencing aggression triggers defensive behavior and sometimes even a need for revenge which can paradoxically enhance a sense of control and power among nurses (especially when the privileged position of nurses in the ward as well as the dependent position of the patient and family are abused). At the same time the patient's family's participation can be perceived as interference and close inspection, especially since not all facilities have developed the tradition of cooperation with the family (some hospitals are still not technically and logistically prepared for that). On the other hand, it is harder to cope with cases of patient and family dissatisfaction when the nurse is fully engaged and trying to do their best in a given situation. Low quality of nursing is one of the most burdening nurses' concerns confirmed in many studies [33, 36].

Third, the perceived social support was connected with participant's emotions only to a small extent. Practical support from Superiors predicted low negative emotions and high positive emotions. Emotional support from Superiors (calming, comforting, caring and interest) was a negative predictor of negative emotions. These results confirm that perceived practical and emotional support from Superiors has a beneficial effect on nurses' mood. Nurses believing that they may rely on their Superiors when facing problems at work demonstrated its beneficial consequences. This effect refers only to support from one source of perceived support which confirms the importance of distinguishing between types of support (perceived and received) and its sources [17]. The role of support from Superiors may be different depending on the type of support. According to Jones and Johnston [21] nurses who reported being the recipient of managerial support following an serious clinical incident revealed significantly lower levels of positive affect compared to those reporting no such contact. The authors conclude that further research would determine the positive and negative effects of managerial support on the mood experienced by nurses at work. As the results of this study show, one of the directions could be to examine not only received but also perceived support from Superiors and factors related to them.

Next, practical support from Doctors (guidance, advice and information concerning performed tasks) was a significant positive predictor of negative emotions. Thus, the results confirmed negative effect of support from that source. Deelstra, et al. [7] provided the evidence showing that receiving instrumental support at work is not always welcome and may be appraised as a threat to self-esteem and personal competence. This happens when support is seen by receiver to be imposed. Again, there is a question regarding the types of support (perceived versus received) and their outcomes. Additionally, perceived support from Doctors predicts harmful consequences in the form of higher negative affect. There arises a question of matching sources of support to type of difficulties and individual needs for them or effectiveness of social support [30]. Data measuring received support indicates that when support was effective, its quantity was not associated with the distress of receiver; however, when support was ineffective, receiving a greater quantity of it was associated with substantially elevated distress. According to the treat–to–self-esteem model, the consequences of receiving support depends on the recipient's reaction to be being helped: if it is perceived as self-supportive, it leads to positive reactions, but if it is perceived as self-threatening, it elicits negative reactions [7].

The acquired results show that perceiving doctors as providers of guidance and practical advice induces negative emotions, like irritation and anger, in nurses. There are a lot of factors contributing to the way nurses appraise doctors and the range of support they may expect from them. Experience from professional practice suggests that it can be an effect of communication between doctors and nurses, condescending attitudes of doctors toward nurses or prejudice of nurses towards doctors. It doesn't exclude situations in which the true intention of providing support by doctors was to highlight the nurse's incompetence and validate the speaker. On the other hand, nurses may demonstrate oversensitivity towards negative doctors' intentions responding with feelings of inferiority and incompetence. The other sources of support didn't predict the nurses' emotions.

The last issue considered in the study referred to the intervening role of difficulties with patient care in the linkage between social support and nurses' emotions. The results showed that *demand for information by patient and family* intervene in the relationships between perceived practical support from Doctors, Other Nurses, Other Team Members and negative emotions. Perceiving practical support from these sources leads to more difficulties resulting from *demand for information by patient and family* which in turn increases the level of negative emotions. These findings can be helpful in understanding the mechanisms underlying perceived support-emotions linkage. Considering the situation of delivering information to patient and/or family, nurses may expect practical support for many reasons. First, feeling overloaded by other duties, they may expect that someone takes over the tasks related to communicating with patient and/or family. Second, by appraising communication with patient and/or family (e.g. breaking bed news) as difficult and burdening, they may want to avoid this situation thinking that someone else may take on this role. Third, they may believe that other staff is responsible for informing the patient and/or family (e.g. in Poland nurses are responsible for delivering information on the course of care, whereas doctors and only doctors may inform on the diagnosis and treatment). The problems begin with the expectation that nurses have to face the *demand for information by patient and family*. They may feel disappointed that other staff let them down or frustrated that they have to fulfill others' duties. Moreover, they may feel burdened with the emotional consequences of such contact or confused when having to refuse the request of patient and/or family. Thus, it seems that further research should be aimed at determining what the individual believes to be related to perceived social support from different sources and their effects on everyday practice of nursing.

The research carried out has important limitations. First of all, it was cross-sectional. Thus the results pertaining to prediction and intervening effects have to be treated with caution. The sample size was also relatively small. The participants were a select group of nurses which continue their education and in the process of undertaking masters studies while working. We may hypothesize that such nurses may be more motivated to extend their professional and personal competences being more aware of how important relationships are among medical staff and more skilled in avoiding and overcoming conflicts at work. The limited range of difficulties with patient care may be also recognized as some shortcoming of the study. They also had relatively general character and did not reflect the specificity of the ward where the participating nurses worked. Taking into account wider spectrum of emotions would be also recommended.

Nevertheless, the study provided interesting findings that in the light of existing data encourage further investigation of the relationship between social support and nurses' mood. The acquired results allow one to formulate certain practical implications. The difficulties with patient care concerning the relationships with patients and families seem to be especially important in nursing practice. Among them, *patient dissatisfaction* and *demand for information by patient and family* were connected with negative emotions. This suggests that it's necessary to develop nurse competence further in this domain. The relationship between emotions and support from Superiors shows that it is meaningful to develop this aspect of professional relationships through daily contact at work. It is still one of the most underappreciated and neglected aspects of support in the nursing profession. Other interesting findings that may be easily transferred into practice are that high perceived practical support from Doctors, Other Nurses and Other Team Members is associated with more difficulties resulting from *demand for information by patient and family* which in turn increases the level of negative emotions. It confirms that proper flow of information, knowledge on the staff members' competences and adequate expectations towards each other, are key elements of healthy working environment [23]. Another important aspect of the

study is the relationships between nurses and doctors, their attitudes towards each other and the quality of the cooperation between them. This issue also needs further investigation.

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