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Impact of Education, Working Conditions, and Interpersonal Relationships on Caregivers' Job Satisfaction

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Abstract

Aim: To explore relationships between caregivers' education, healthcare working conditions, interpersonal relationships, and caregivers' general job satisfaction.

Background: Caregivers job satisfaction is related to several organizational work environment factors, interpersonal relationships, and personal variables such as education and work experience. Research is needed to understand these variables in different countries due to cultural differences, educational background, and different labor markets.

Design: Cross-sectional multicentre survey.

Methods: Survey data were collected from a convenience sample of 1098 caregivers in five Slovene health care institutions in 2012. Statistical analyzes were undertaken using a descriptive and inferential statistics.

Results: No statistically significant differences were found regarding caregivers' education, average lengths of service, and number of working hours on caregivers' job satisfaction. Job rewards and opportunities predicted higher job satisfaction in nurses with diploma degree. Professional empowerment, supervisor and interpersonal relationships with physicians predicted nursing assistants' higher job satisfaction. Job demands were associated with lower job satisfaction in nursing assistants.

Conclusion: This study contributes to an understanding of the contributing factors of caregivers' general job satisfaction. Results have a great practical value for research, practice, education, and management in the health care system in Slovenia and similar countries.

Keywords: job satisfaction, nursing, working environment, interpersonal relationships, education

1. Introduction

A caring nurse and a conducive working environment influence patients' health outcomes such as patients' satisfaction [1, 2]. Patients' satisfaction can be especially influenced by nurses' job satisfaction [3, 4], which is also related to patients' safety and quality of care [5]. Job satisfaction among nurses has been identified as a key factor in nurses' recruitment and retention, but a comprehensive understanding of nurses' job satisfaction and its related factors remains elusive [6]. It is a critical issue for healthcare organizations in recent years, particularly in nursing, because of potential nurses' shortages, their effect on patients' care, and the associated costs. Rapid changes in healthcare and everyday higher patient expectations and awareness of their rights as well as cross border healthcare treatment have also placed more demands on nurses and this has increased the need for organizations to consider ways to sustain and improve nurses' job satisfaction. To achieve this, they need to understand the factors that affect job satisfaction and dissatisfaction [7]. Hospital leaders need information about factors that underlie nurses' job satisfaction so as to prevent nurses' from leaving their jobs [8] and to improve autonomy, empowerment, and decision-making opportunities in their working environment [9] as well as planning for necessary improvements in practice. More research is required to understand the relative importance of the many identified factors relating to job satisfaction of hospital caregivers [6]. Job satisfaction has an impact on professional work, motivation to achieve results, emphatic relationships with coworkers and patients, and on their personal lives.

2. Background

2.1. Job satisfaction

Job satisfaction is defined as the degree of positive effect toward a job and its main components which is influenced by both, working environment and personal characteristics [10]. General job satisfaction refers to the work environment and the relationship between the employees [11]. Nurses' professional status and their value, autonomy, and professional and personal partner-like relationships within teams and with patients and their families are the most important contributing factors to caregivers' job satisfaction [12]. Interpersonal relationships are especially important and are stimulated in the workplace. Results by

Tzeng and Ketefian [3] showed that nurses' general job satisfaction, general feelings of happiness when they are doing their jobs, and their job satisfaction are significantly correlated with inpatient satisfaction, such as explanation of care, art of care, pain management, and arrangement for home care and follow up. Nurses' job dissatisfaction could be reflected in nurses' attitudes and behaviors, adversely affecting nurse-patient interactions and patients' perceptions of those interactions [4]. Interactions between coworkers could also be affected. Nurses' job dissatisfaction is related with the intent to leave [13] and a key factor in nurse' turnover [6]. Job satisfaction is related to a number of organizational, professional, and personal variables [6]. It can be influenced by different working conditions and interpersonal relationships. In addition, nurses' educational background should be considered as an important factor in understanding nurses' job satisfaction [6, 14]. It seems that nurses with tertiary education are less satisfied with their jobs than those who had not received tertiary education [6]. In Slovenia, there are 72% ($n = 12,387$) of caregivers with 4-year secondary vocational education (nursing assistants) and 28% ($n = 4871$) of caregivers with higher or tertiary education in nursing (nurses with diploma degree) [15]. Different issues have greater significance in different countries due to the social context of the different labor markets [6].

2.2. Working conditions and interpersonal relationships

Adequate staffing and resources [16–20], workload and working hours [21], nursing management [8, 17, 22–25], autonomy and decision-making [17, 25–28], status, recognition, job and task requirements, opportunity for advancement [25], and also employee engagement and commitment [29] are frequently reported working conditions that have an impact on nurses' job satisfaction. Listed conditions represent professional characteristics that are strongly associated with intra- and interprofessional relationships that exist in the workplace. For nurses, job satisfaction is the most important nurse physician relationships [4] following interpersonal relationships, such as human relationships with coworkers, feeling of togetherness, interaction and communication, teamwork, and peer support [17, 23].

3. The study

3.1. Aim

The main aim of this study was to explore relationships between caregivers' education, healthcare working conditions, interpersonal relationships, and caregivers' general job satisfaction. We proposed the following research question: "What is the impact of education, working conditions, and interpersonal relationships on caregivers' general job satisfaction."

3.2. Design

The study used a cross-sectional multicentre survey conducted among nursing assistants and nurses with diploma degree.

3.3. Setting and participants

We collected data from five different health care institutions in Slovenia including a range of hospital types from large university clinical centers to small general hospitals and different units. Convenience sampling was used. Questionnaires were distributed to 1098 caregivers representing 29.84% of 3680 caregivers working in the included five healthcare institutions and 11.68% of 9404 caregivers in all Slovenian hospitals. A total of 613 questionnaires were returned, giving a response rate of 55.83%.

3.4. Data collection

Data collection took place in August 2012. The researchers handed out questionnaires to caregivers in different units of the five health care institutions, including nursing assistants (4-years of secondary vocational education) and nurses with a diploma degree (3-years of higher education in nursing). Return of completed questionnaires was considered as a consent for participation. The completed questionnaires for nurses were returned in a sealed box clearly identifiable in the ward. This box was regularly emptied by researchers.

3.5. Ethical considerations

Approval was obtained from all five healthcare institutions that provided a written permission for research. Caregivers were informed about the study aims prior to administration of the questionnaires.

3.6. Instruments

The survey was adapted from previous research in the United States [29, 30]. Caregivers' education was measured at the individual level. We also used an average length of service on each of study units and caregivers working hours per week on a unit. The work environment was measured using a questionnaire Supports for Individual and Team Performance [29, 30]. The questionnaire contains 54 items related to support for individual and team performance and uses a 1-to-5 Likert scale with the following levels: 1—"Never," 2—"Rarely," 3—"Some of the time," 4—"Most of the time," and 5—"All of the time." Respondents circled the number best corresponding their belief about the statement, where 1 represents never and 5 represents all the time. Items are grouped into eight subscales: hospital decision-making (5-items), staffing and resources (5-items), job demands (3-items), professional empowerment (11-items), job rewards and opportunities (8-items), supervisory relationships (12-items), delivering patient-centered care (4-items), and communication about patients (6-items). Interpersonal relationships were measured using the Team Effectiveness questionnaire. Interpersonal relationships with physicians (10-items), nurses with a diploma degree (10-items), and nursing assistants (10-items) were assessed. The questionnaire uses a 1-to-5 Likert scale with the same levels as in the support for individual team performance questionnaire. Nurses satisfaction was measured using a single question "Overall, how satisfied are you with your job?" It was represented by a Likert scale consisting of the following four options: "Very satisfied", "Somewhat satisfied", "Somewhat dissatisfied" and "Very dissatisfied".

3.7. Validity and reliability

The work environment was measured using a survey item previously used in the United States to research the support for individual and team performance. The original survey was based on the Revised Nursing Work Index, developed by Aiken and Patrician (2000), the Picker Hospital Employee Survey, developed by The Picker Institute (2006), and tools from workplace settings in industries outside of health care, particularly those related to high-performance work systems and teams developed by Weinberg and her team. Unlike the Nursing Work Index, the tool went beyond nursing and examined structural supports for healthcare work for multiple providers. Combined Cronbach's alpha of the original survey was 0.81 [30]. The Slovene version was translated by a professional translator using a standardized translation. Content validity, acceptability, and feasibility of the survey were assured through a nursing group research discussion, including a group of six experienced nursing researchers. Questions regarding caregivers' education and caregivers working hours per week on a unit were adapted to Slovene working conditions. Combined Cronbach's alpha of the Supports for Individual and Team Performance survey was 0.89 and 0.94 for the Team Effectiveness Questionnaire.

3.8. Data analysis

Data were analyzed using R, version 3.0.3 (<http://cran.org>). Descriptive statistics were used to describe caregivers' education, average lengths of service on each of the study units and caregivers working hours per week on a unit. Exploratory analysis was conducted by visualization of the job satisfaction mean value with corresponding 95% confidence intervals for compared groups based on the education, length of service, and weekly working hours.

Additionally, we examined how nurse job satisfaction relates to level of education, eight measures of individual or team performance (ITP), and interpersonal relations (IR). The eight measures of ITP consisted of the following subscales: hospital decision-making, staffing and resources, job demands, professional empowerment, job rewards and opportunities, your supervisor, delivering patient centered care, and communication about patients. Three measures of interpersonal relationships (IR) consisted of the following units: interpersonal relationships with physicians, interpersonal relationships with nursing assistants, and interpersonal relationships with nurses with diploma degree. Level of education was defined as high (nurses with diploma degree) and low (nursing assistants), since most of the caregivers in our study belonged to these two groups.

First, we compared mean values with corresponding confidence intervals for all measures of ITP and IR in both groups based on education. Mean values of both groups were compared using the nonparametric Mann-Whitney U-test for two independent samples. Benjamini and Hochberg [31] procedure was used to control for the false discovery rate due to multiple testing.

Finally, we built two regression models to explore relations between job satisfaction and 11 numeric predictors in two groups of different education level. The output variable of ordinal logistic regression (OLR) models was represented by job satisfaction level and was based on a question "Overall, how satisfied are you with your job?" It was represented by

four ordinal values, including 1—“Very satisfied,” 2—“Somewhat satisfied,” 3—“Somewhat dissatisfied,” and 4—“Very dissatisfied.” Eleven numeric predictors with average ITP and IR subscale scores for each individual were used as predictors. Statistical significance was set at $P < 0.05$.

Participants with missing values were excluded from the model building process. Therefore, the OLR models were built using 293 for low and 246 samples for high education level.

4. Results

Most caregivers belonged to the group of nursing assistants ($n = 327$, 53.3%) and nurses with a diploma degree ($n = 266$, 43.3%). Thirteen (2.3%) respondents had the other educational background and were excluded from further analysis. Detailed sample demographic characteristics are presented in **Table 1**.

Demographic characteristics	Responses
Education	
Nursing assistants, n (%)	327 (53.3%)
Nurses with diploma degree, n (%)	266 (43.3%)
Other	13 (2.3%)
Missing	7 (1.1%)
Average lengths of service on selected unit, n (%)	
Less than one year	53 (8.6%)
1–2 years	68 (11.1%)
3–4 years	67 (10.9%)
More than four years	418 (68.2%)
Missing	7 (1.1%)
Weekly working hours, n (%)	
Under 40 hours per week	78 (12.7%)
40 hours per week	187 (30.5%)
Over 40 hours per week	337 (55%)
Missing	7 (1.1%)
Gender, n (%)	
Female	526 (85.8%)
Male	80 (13.1%)
Missing	7 (1.1%)

Table 1. Demographic characteristics.

In an additional analysis of relations between the job satisfaction, working conditions, and interpersonal relationships, we analyzed the relation between the job satisfaction and length of service (**Figure 1**). Although we could not find any statistically significant differences between the observed groups for any length of service, one can notice the trend in the gap between the two groups that is increasing with the length of service.

Figure 2 also explores the differences in job satisfaction between the two observed groups and focuses on the weekly working hours expressed in three groups—participants working less, exactly, or more than 40 hours per week. One can observe a decrease in the job satisfaction difference between the observed groups with the increased weekly working hours. None of the differences are statistically significant.

Table 2 presents a summary of individual or team performance and interpersonal relationship predictors for nursing assistants and nurses with a diploma degree. The lowest mean value in the group of nursing assistants was found in ITP decision making ($M = 1.43$, 95% CI 1.34–1.52) and the lowest mean value in the group of nurses with a diploma degree for ITP job rewards and opportunities ($M = 1.69$, 95% CI 1.61–1.78). The highest mean value in the group of nursing assistants was found in IR with nursing assistants ($M = 4.38$, 95% CI 4.32–4.44) and in the group of nurses with a diploma degree for IR with Nurses with Diploma Degree ($M = 4.22$, 95% 4.16–4.28). Statistically significant differences in mean values of both groups were found in ITP Decision Making, IR with Nursing Assistants, and IR with Nurses with a Diploma Degree ($P < 0.001$).

Table 3 represents the results of OLR and corresponding significance values within a group of Nursing Assistants. It should be noted that 1—“Very satisfied” translates to the highest level of job satisfaction, meaning that negative regression coefficients contribute to higher satisfaction. Within the group of Nursing Assistants, Job Demands is a predictor with a positive coefficient that results in 0.632 units’ lower job satisfaction for each unit of increase in ITP

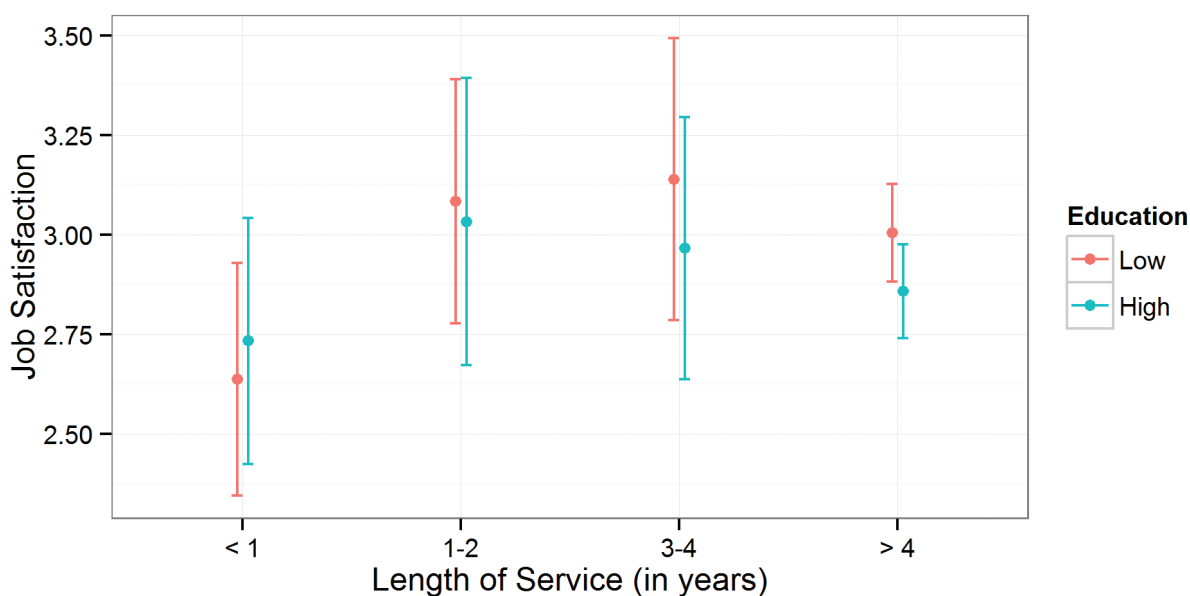


Figure 1. Comparison of job satisfaction for two groups of participants based on their education for different lengths of service.

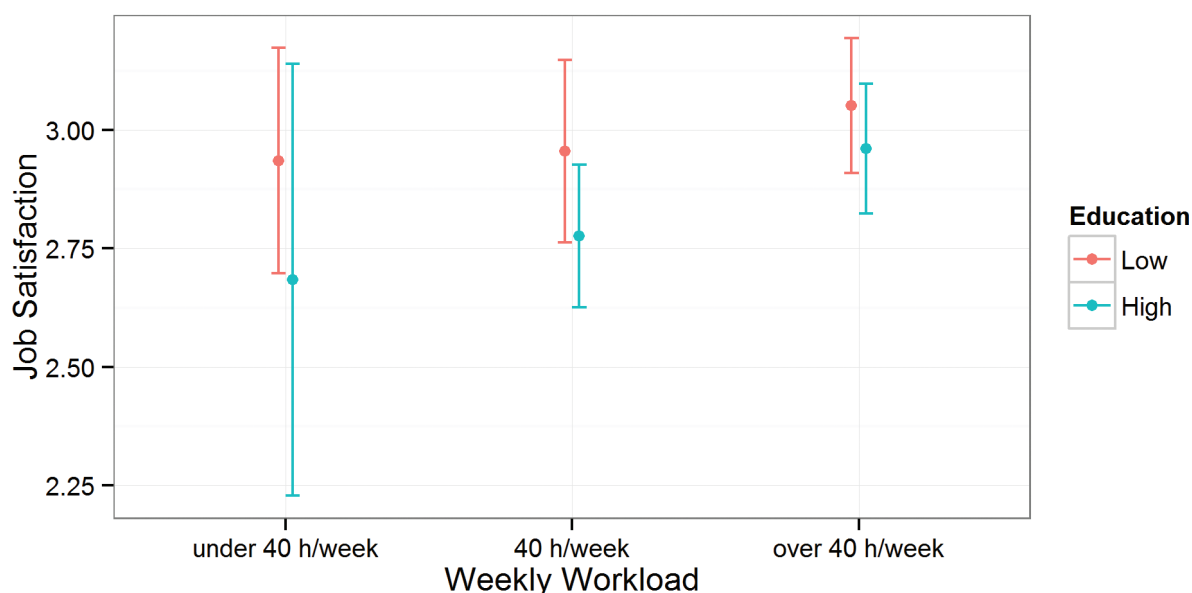


Figure 2. Comparison of job satisfaction for two groups of participants based on their education for different weekly working hours.

Predictor	Nursing assistants		RNs with diploma		Mann-Whitney <i>P</i> value
	Mean	95 % CI	Mean	95% CI	
ITP hospital decision-making	1.43	1.34–1.52	1.72	1.61–1.82	<0.001
ITP staffing and resources	2.46	2.38–2.54	2.46	2.39–2.54	1.000
ITP job demands	2.80	2.74–2.87	2.77	2.70–2.84	0.409
ITP professional empowerment	2.97	2.93–3.02	3.02	2.97–3.06	0.305
ITP job rewards and opportunities	1.59	1.51–1.67	1.69	1.61–1.78	0.108
ITP supervisor	2.23	2.17–2.28	2.30	2.24–2.36	0.108
ITP delivering patient-centered care	3.17	3.10–3.24	3.16	3.09–3.23	0.958
ITP communication about patients	2.55	2.46–2.63	2.58	2.50–2.65	0.694
IR with physicians	3.70	3.63–3.77	3.74	3.67–3.81	0.430
IR with nursing assistants	4.38	4.32–4.44	4.12	4.04–4.19	<0.001
IR with nurses with diploma degree	3.97	3.90–4.05	4.22	4.16–4.28	<0.001

All *p*-values below 0.05 are mentioned in bold.

Table 2. Summary of individual or team performance and interpersonal relationship predictors for two groups of participants based on education level ($n = 539$).

Job Demands in the log odds scale. Two predictors, Professional Empowerment and Your Supervisor in the measure of an individual or team performance are predictors related to higher job satisfaction. Professional empowerment is a predictor with a negative coefficient -0.872 that results in higher job satisfaction ($P = 0.016$). The supervisor is a predictor with a negative coefficient -0.750 that contributes to higher job satisfaction ($P = 0.011$). In interpersonal relationships measure, only IR with Physicians is a predictor with a negative coefficient

Predictor	Value	Std. error	t value	P value
ITP hospital decision making	0.299	0.183	1.636	0.102
ITP staffing and resources	0.036	0.247	0.150	0.881
ITP job demands	0.632	0.249	2.539	0.011
ITP professional empowerment	-0.872	0.363	-2.402	0.016
ITP job rewards and opportunities	-0.398	0.224	-1.775	0.076
ITP supervisor	-0.750	0.293	-2.556	0.011
ITP delivering patient centered care	-0.052	0.235	-0.223	0.824
ITP communication about patients	0.073	0.207	0.354	0.724
IR with physicians	-0.848	0.259	-3.281	0.001
IR with nursing assistants	0.008	0.279	0.027	0.978
IR with nurses with diploma degree	-0.193	0.253	-0.764	0.445

ITP, individual or team performance; IR, interpersonal relations.
 All p-values below 0.05 are mentioned in bold.

Table 3. Ordinal logistic regression results for prediction of the job satisfaction level within a group of nursing assistants ($n = 293$).

-0.848 that significantly contributes to higher job satisfaction ($P = 0.001$). All other predictors were not statistically significant for job satisfaction within a group of Nursing Assistants.

Table 4 represents the results of OLR and corresponding significance values within a group of Nurses with Diploma degree. In the group of Nurses with Diploma Degree, only Job Rewards and Opportunities was a significant predictor of job satisfaction, a predictor with a negative coefficient -0.631 that contributed higher job satisfaction ($P = 0.017$).

Predictor	Value	Std. error	t value	P value
ITP hospital decision making	0.005	0.194	0.024	0.981
ITP staffing and resources	-0.011	0.297	-0.036	0.972
ITP job demands	0.395	0.272	1.451	0.147
ITP professional empowerment	0.076	0.371	0.205	0.838
ITP job rewards and opportunities	-0.631	0.264	-2.386	0.017
ITP supervisor	-0.615	0.329	-1.872	0.061
ITP delivering patient centered care	0.126	0.261	0.482	0.630
ITP communication about patients	-0.277	0.279	-0.993	0.321
IR with physicians	-0.495	0.277	-1.791	0.073
IR with nursing assistants	-0.137	0.287	-0.4732	0.636
IR with nurses with diploma degree	-0.438	0.356	-1.230	0.219

All p-values below 0.05 are mentioned in bold.

Table 4. Ordinal logistic regression results for prediction of the job satisfaction level within a group of nurses with diploma degree ($n = 246$).

5. Discussion

The aim of our study was to explore the relationships between caregiver education, healthcare working conditions, interpersonal relationships, and caregivers' general job satisfaction.

No statistically significant differences were found regarding caregiver education, lengths of service, and number of working hours on their job satisfaction, which is in contrast to other studies. Lu et al. [6], for example, found that hours of work are a significant predictor of job satisfaction. One of the possible reasons for our results is a small sample size (only 19 nurses with a diploma degree in category working less than 40 hours per week). Additional research using a bigger sample size is needed to confirm this trend. Nonetheless, we can observe a trend between increased weekly working hours and increased job satisfaction. One possible explanation is that caregivers, although facing increased workload, have high job control or high job social support that enhances intrinsic work motivation [32]. Increased weekly working hours could be related also to pay increases, especially if caregivers are working at weekends or night shifts.

Examining the working environment, we found statistical differences within two researched groups of caregivers, nursing assistants, and nurses with diploma degree. In the group of nursing assistants, job demands resulted in lower job satisfaction. Research results showed that they have to work very fast and very hard most of the time. Job demands were found to be a significant factor for caregivers' lower job satisfaction also in Bégat et al. [33], Seo et al. [34], Chu et al. [35], Demerouti et al. [36]. Current nursing work environments are characterized by heavy workloads that contribute to stress among caregivers [37]. That is also true for Slovenian healthcare system, where caregivers are burdened with heavy workloads and are underpaid. We also have a higher proportion of nursing assistants when compared to nurses with diploma degree. So nursing assistants are sometimes responsible also for nursing interventions for which they do not have formally obtained knowledge and competences. This can happen especially in situations of increased workload at wards (i.e., increased number of hospitalization, sick leave). It is, therefore, especially important to establish congruence between nurses' workload and their rewards [36] and job demands.

Regarding the work environment, there were more significant predictors that positively affected job satisfaction in nursing assistants than in nurses with diploma degree. Professional empowerment and supervisor were a significant predictor of nursing assistants' job satisfaction, whereas job rewards and opportunities was the only predictor of higher job satisfaction in nurses with diploma degree. This is not so surprising because nursing assistants need to receive more assistance and resources to enhance their job satisfaction [38]. Our research results showed that nursing assistants estimate the work they do as important and they use their knowledge; however, they need more resources and support.

Professional empowerment is important for job satisfaction, because an employee can be satisfied with the basic content of the job, but may be frustrated if it does not allow one to grow or move into roles in other areas of the organization [39]. Highly educated nurses may have more work opportunities than those with lower levels of education [40], while nursing assistants have less control over their work and less autonomy. That is why they need more opportunities for continuing education [12]. Additionally, nursing assistants wish to improve professional

empowerment, thereby creating a positive working environment [12]. In Slovenian hospitals, we have also a lack of a comprehensive career development system [41]. Caregivers in our research claim that they never or rarely have opportunity to get a better job in their respective institution.

Nurse managers have a strong role in promoting nurses' job satisfaction [16, 17, 42]. Attention should be paid especially to strengthen nurses' interpersonal relationships and facilitate nurses' capacity to deliver high-quality patient care [17]. Aiken et al. [13] researched nursing job satisfaction in five different countries with different health care systems and found that fewer than half of the nurses reported that management in their hospitals is responsive to their concerns, provides opportunities for nurses to participate in decision-making, and acknowledges nurses' contributions to patient care. Our research results showed that respect, trust, recognition, support in further education and training and inclusion in decision-making are important factors that should be addressed by nursing administrators in practice.

Our results underline the importance of reward in relation to job satisfaction, as found in different studies [42, 43]. In the group of nurses with diploma degree, only job rewards and opportunities were found to be a significant predictor of higher job satisfaction. Nurses with a diploma degree in Slovenia have much greater autonomy, control over work, better salary, and professional status and are also more empowered when compared to nursing assistants. However, a trend of labor migration can be seen in Slovenia; caregivers search jobs in other western countries, where salaries, working conditions, and career development opportunities are better.

In relation to examining interpersonal relationships, only interpersonal relationships with physicians was a predictor of higher job satisfaction, but again only in nursing assistants group. Nurses' job performance in hospitals is dependent upon their relationships with physicians [44], so nurse-physician collaboration was found to be a major predictor of job satisfaction [45]. This predictor was not significant in nurses with diploma degree. One of the possible reasons of this result is, as already previously stated, lack of autonomy and control over the work in group of nursing assistants. Another possible reason is our legislation that states that physicians are those who are responsible for the complex process of healing and treatment. Physicians and nurses also tend to work together or consult each other at times, whereas nursing assistants tend to have more a hierarchical, subservient relationship with physicians and nurses [46]. Differences between intraprofessional and interprofessional communication is expected because of cultural differences between caregivers and physicians [47], which was also shown by our research results. Caregivers assessed intraprofessional relationships better than interprofessional relationships with physicians. In our healthcare system, hierarchical relationships in healthcare teams are firmly rooted. There should be more emphasis on interdisciplinary and multidisciplinary collaboration. Nurses should be aware of their role of being "connective" [12].

Other research shows that not only nurse-physician relationships but also peer relationships are important contributing factors of nurses' job satisfaction [10, 48]. Utriainen and Kyngäs [17] found that interpersonal relationships such as human relationships with coworkers, feeling of togetherness, interaction and communication, team work, social climate and ethicality, and peer support are important in hospital nurses' satisfaction, which contrasts with of our findings. Interpersonal relationships with peers were not found as a significant predictor of job satisfaction. Nursing assistants and nurses were very satisfied with their interpersonal relationships, mean values for interpersonal relationships with nursing assistants, and interpersonal relationships with nurses

with diploma degree were higher in both groups when compared to other predictors and ranged from 3.97 (95% CI 3.90–4.05) to 4.38 (95% CI 4.32–4.44). However, as is evident in **Table 2**, both nursing assistants and nurses with a diploma degree rated communication with their own peers better than communication with group of caregivers with different level of education, and the differences were statistically significant. Hierarchy is present not only within healthcare teams but also in nursing teams. It is also known that nurses usually possess the conceptual knowledge of the meaning of communication and collaboration, but struggle with this in the practice setting [49]. A sense of belonging, being one of them, appreciated, loved, able to rely on coworkers make us feel safe in our workplace so relationships and communication in nursing teams need to be addressed in practice. It is the essence of nursing that professionals are aware of human and equal interpersonal relationship based on trust and respect [12].

The important element that nursing is entitled to and which will help it to gain autonomy and social acknowledgment is academic education. Nursing has achieved a lot through formal education, but it is still in a dependent position relative to other professions, especially to medicine [12].

Nurses' job satisfaction is especially important in the current context of nurse shortages [13], so the results of this study can contribute to the understanding of such a complex phenomenon and will help managers to plan effective interventions. Also in our country, healthcare system is faced with a lack of caregivers because of the economic crisis.

5.1. Limitations

The main limitation of this study is the study design. We have presented a cross-sectional study that cannot positively and accurately confirm the established causalities. Further longitudinal studies are required to confirm our results. Second, convenience sampling of the caregivers was used, so results cannot be generalized.

5.2. Implications for policy/practice/research/education

Results of this study have a great practical value and utility for managers when preparing strategies and selecting a sound nursing theory to support intraprofessional and interprofessional relationships and to assure overall satisfaction of caregivers in countries with similar health care service. Additional research using a larger sample size is needed to confirm trends of increased weekly working hours and increased job satisfaction. Greater emphasis should be placed on lifelong education and training in intraprofessional and interprofessional communication and collaboration. Empowerment, improvement of career development opportunities, and enhancement of professional growth are required by nursing assistants.

6. Conclusion

This study has provided a depiction of the relationships between caregiver education, health-care working conditions, interpersonal relationships, and caregivers' general job satisfaction. Two factors of working environment, professional empowerment and supervisor, and one factor of interpersonal relationships, interpersonal relationships with physicians were found

to be positively affect nursing assistants' job satisfaction. One factor, job demands, was found to negatively affect nursing assistant's job satisfaction. Job satisfaction of nurses with diploma degree was found to be positively affected only by job rewards and opportunities.

The results of this study serve as a good foundation for future studies of these multifactorial and complex phenomena in the healthcare setting. Additional research is needed to confirm and explore trends of increased weekly working hours and increased job satisfaction using not only quantitative approach but also qualitative or mixed methods research.

Results have implication for caregivers' education and training in nursing practice. Greater emphasis on education and training in intraprofessional and interprofessional communication and collaboration should be placed in curricula. Empowerment of nursing assistants, improvement of their career development opportunities, and enhancement of their professional growth is needed. Results have, therefore, a great practical value also for managers in the healthcare system in Slovenia and similar countries. Furthermore, significant strategies should be prepared to assure overall satisfaction of caregivers. Increasing the number of nurses with higher education degree is one of the first steps in ensuring the safety and making progress in the quality, safety, and efficiency of healthcare delivery.

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References

- [1] Cossette S, Cote JK, Pepin J, Ricard N, D'Aoust LX. A dimensional structure of nurse-patient interactions from a caring perspective: refinement of the Caring Nurse-Patient Interaction Scale (CNPI—Short Scale). *Journal of Advanced Nursing* 2006;55(2):198–214.
- [2] Finfgeld-Connett D. Meta-synthesis of caring in nursing. *Journal of Clinical Nursing* 2008;17(2):196–204.
- [3] Tzeng HM, Ketefian S. The relationship between nurses' job satisfaction and inpatient satisfaction: an exploratory study in a Taiwan teaching hospital. *Journal of Nursing Care Quality* 2002;16(2):39–49.
- [4] Larrabee JH, Ostrow CL, Withrow ML, Janney MA, Hobbs GR, Jr., Burant C. Predictors of patient satisfaction with inpatient hospital nursing care. *Research in Nursing & Health* 2004;27(4):254–68.
- [5] Atefi N, Abdullah KL, Wong LP, Mazlom R. Factors influencing registered nurses perception of their overall job satisfaction: a qualitative study. *International Nursing Review* 2014;61(3):352–60.
- [6] Lu H, Barriball KL, Zhang X, While AE. Job satisfaction among hospital nurses revisited: a systematic review. *International Journal of Nursing Studies* 2012;49(8):1017–38.
- [7] Maqballi MA. Factors that influence nurses' job satisfaction: a literature review. *Nursing Management (Harrow, London, England: 1994)* 2015;22(2):30–7.
- [8] Larrabee JH, Janney MA, Ostrow CL, Withrow ML, Hobbs GR, Jr., Burant C. Predicting registered nurse job satisfaction and intent to leave. *The Journal of Nursing Administration* 2003;33(5):271–83.
- [9] Erenstein CF, McCaffrey R. How healthcare work environments influence nurse retention. *Holistic Nursing Practice* 2007;21(6):303–7.
- [10] Adams A, Bond S. Hospital nurses' job satisfaction, individual and organizational characteristics. *Journal of Advanced Nursing* 2000;32(3):536–43.
- [11] Yang J, Liu Y, Chen Y, Pan X. The effect of structural empowerment and organizational commitment on Chinese nurses' job satisfaction. *Applied Nursing Research: ANR* 2014;27(3):186–91.
- [12] Pajnkihar M. Theory development for nursing in Slovenia [PhD thesis] 2003 Manchester: University of Manchester, Faculty of Medicine, Dentistry, Nursing and Pharmacy.
- [13] Aiken LH, Clarke SP, Sloane DM, Sochalski JA, Busse R, Clarke H, et al. Nurses' reports on hospital care in five countries. *Health Affairs (Millwood)* 2001;20(3):43–53.
- [14] Cicolini G, Comparcini D, Simonetti V. Workplace empowerment and nurses' job satisfaction: a systematic literature review. *Journal of Nursing Management* 2014;22(7):855–71.

- [15] National Institute of Public Health of the Republic of Slovenia. Izvajalci zdravstvene dejavnosti/Health care resources 2014 [Available from: https://podatki.nijz.si/pxweb/sl/NIJZ%20podatkovni%20portal/NIJZ%20podatkovni%20portal__6%20Zdravstvene%20storitve%20in%20sistem%20zdravstvenega%20varstva__6d%20Izvajalci%20zdravstvene%20dejavnosti/BPI_TB02.px/table/tableViewLayout2/?rxid=feb078b4-3bb6-405b-bfe2-ceba0f2ce56d].
- [16] Aiken LH, Clarke SP, Sloane DM. Hospital staffing, organization, and quality of care: cross-national findings. *International Journal for Quality in Health Care: Journal of the International Society for Quality in Health Care/ISQua* 2002;14(1):5–13.
- [17] Utriainen K, Kyngäs H. Hospital nurses' job satisfaction: a literature review. *Journal of Nursing Management* 2009;17(8):1002–10.
- [18] Tervo-Heikkinen T, Kvist T, Partanen P, Vehvilainen-Julkunen K, Aalto P. Patient satisfaction as a positive nursing outcome. *Journal of Nursing Care Quality* 2008;23(1):58–65.
- [19] Bruyneel L, Li B, Ausserhofer D, Lesaffre E, Dumitrescu I, Smith HL, et al. Organization of hospital nursing, provision of nursing care, and patient experiences with care in Europe. *Medical Care Research and Review: MCRR* 2015;72(6):643–64.
- [20] Wolf ZR, Colahan M, Costello A. Relationship between nurse caring and patient satisfaction. *Medsurg Nursing: Official Journal of the Academy of Medical-Surgical Nurses* 1998;7(2):99–105.
- [21] Griffiths P, Dall'Ora C, Simon M, Ball J, Lindqvist R, Rafferty AM, et al. Nurses' shift length and overtime working in 12 European countries: the association with perceived quality of care and patient safety. *Medical Care* 2014;52(11):975–81.
- [22] Upenieks VV. Assessing differences in job satisfaction of nurses in magnet and nonmagnet hospitals. *The Journal of Nursing Administration* 2002;32(11):564–76.
- [23] Cummings GG, Olson K, Hayduk L, Bakker D, Fitch M, Green E, et al. The relationship between nursing leadership and nurses' job satisfaction in Canadian oncology work environments. *Journal of Nursing Management* 2008;16(5):508–18.
- [24] Cummings GG, MacGregor T, Davey M, Lee H, Wong CA, Lo E, et al. Leadership styles and outcome patterns for the nursing workforce and work environment: a systematic review. *International Journal of Nursing Studies* 2010;47(3):363–85.
- [25] Sengin KK. Work-related attributes of RN job satisfaction in acute care hospitals. *The Journal of Nursing Administration* 2003;33(6):317–20.
- [26] Iliopoulou KK, While AE. Professional autonomy and job satisfaction: survey of critical care nurses in mainland Greece. *Journal of Advanced Nursing* 2010;66(11):2520–31.
- [27] Bjork IT, Samdal GB, Hansen BS, Torstad S, Hamilton GA. Job satisfaction in a Norwegian population of nurses: a questionnaire survey. *International Journal of Nursing Studies* 2007;44(5):747–57.

- [28] Roberts-Turner R, Hinds PS, Nelson J, Pryor J, Robinson NC, Wang J. Effects of leadership characteristics on pediatric registered nurses' job satisfaction. *Pediatric Nursing* 2014;40(5):236–41, 56.
- [29] Weinberg DB, Avgar AC, Sugrue NM, Cooney-Miner D. The importance of a high-performance work environment in hospitals. *Health Services Research* 2013;48(1):319–32.
- [30] Weinberg DB, Cooney-Miner D, Perloff JN. Analyzing the relationship between nursing education and patient outcomes. *Journal of Nursing Regulation* 2012;3(2):1–4.
- [31] Benjamini Y, Hochberg Y. Controlling the false discovery rate: a practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society Series B (Methodological)* 1995:289–300.
- [32] Van Yperen NW, Hagedoorn M. Do high job demands increase intrinsic motivation or fatigue or both? The role of job control and job social support. *Academy of Management Journal* 2003;46(3):339–48.
- [33] Bégat I, Ellefsen B, Severinsson E. Nurses' satisfaction with their work environment and the outcomes of clinical nursing supervision on nurses' experiences of well-being—a Norwegian study. *Journal of Nursing Management* 2005;13(3):221–30.
- [34] Seo Y, Ko J, Price JL. The determinants of job satisfaction among hospital nurses: a model estimation in Korea. *International Journal of Nursing Studies* 2004;41(4):437–46.
- [35] Chu CI, Hsu HM, Price JL, Lee JY. Job satisfaction of hospital nurses: an empirical test of a causal model in Taiwan. *International Nursing Review* 2003;50(3):176–82.
- [36] Demerouti E, Bakker AB, Nachreiner F, Schaufeli WB. A model of burnout and life satisfaction amongst nurses. *Journal of Advanced Nursing* 2000;32(2):454–64.
- [37] Spence Laschinger HK, Wilk P, Cho J, Greco P. Empowerment, engagement and perceived effectiveness in nursing work environments: does experience matter? *Journal of Nursing Management* 2009;17(5):636–46.
- [38] Kuo HT, Yin TJ, Li IC. Relationship between organizational empowerment and job satisfaction perceived by nursing assistants at long-term care facilities. *Journal of Clinical Nursing* 2008;17(22):3059–66.
- [39] Lautizi M, Laschinger HK, Ravazzolo S. Workplace empowerment, job satisfaction and job stress among Italian mental health nurses: an exploratory study. *Journal of Nursing Management* 2009;17(4):446–52.
- [40] Yin JC, Yang KP. Nursing turnover in Taiwan: a meta-analysis of related factors. *International Journal of Nursing Studies* 2002;39(6):573–81.
- [41] Skela Savič B, Robida A. Usposobljenost srednjega managementa na področju dela z ljudmi v slovenskih bolnišnicah = Capacity of middle management for working with people in Slovenian hospital. In: Skela Savič B, Hvalič Touzery S, Skinder Savič K, Zurc J, Avberšek-Lužnik I, Bregar B, et al., editors. *Zbornik predavanj z recenzijo = Proceedings*

- of lectures with peer review; 5 mednarodna znanstvena konferenca Kakovostna zdravstvena obravnava skozi izobraževanje, raziskovanje in multiprofesionalno povezovanje – prispevek k zdravju posameznika in družbe, 7–8 junij 2012 = 5th International Scientific Conference Quality Health Care Treatment in the Framework of Education, Research and Multiprofessional Collaboration – Towards the Health of Individuals and the Society, 7th–8th June 2012; Ljubljana. Jesenice: Visoka šola za zdravstveno nego = College of Nursing; 2012. pp. 276–85.
- [42] Gelsema TI, van der Doef M, Maes S, Janssen M, Akerboom S, Verhoeven C. A longitudinal study of job stress in the nursing profession: causes and consequences. *Journal of Nursing Management* 2006;14(4):289–99.
- [43] Tourangeau AE, Cummings G, Cranley LA, Ferron EM, Harvey S. Determinants of hospital nurse intention to remain employed: broadening our understanding. *Journal of Advanced Nursing* 2010;66(1):22–32.
- [44] Van Bogaert P, Clarke S, Wouters K, Franck E, Willems R, Mondelaers M. Impacts of unit-level nurse practice environment, workload and burnout on nurse-reported outcomes in psychiatric hospitals: a multilevel modelling approach. *International Journal of Nursing Studies* 2013;50(3):357–65.
- [45] Zangaro GA, Soeken KL. A meta-analysis of studies of nurses' job satisfaction. *Research in Nursing & Health* 2007;30(4):445–58.
- [46] Lancaster G, Kolakowsky-Hayner S, Kovacich J, Greer-Williams N. Interdisciplinary communication and collaboration among physicians, nurses, and unlicensed assistive personnel. *Journal of Nursing Scholarship: An Official Publication of Sigma Theta Tau International Honor Society of Nursing/Sigma Theta Tau* 2015;47(3):275–84.
- [47] Nørgaard B, Ammentorp J, Kofoed PE, Kyvik KO. Training improves inter-collegial communication. *Clinical Teaching* 2012;9(3):173–7.
- [48] Purpora C, Blegen MA. Job satisfaction and horizontal violence in hospital staff registered nurses: the mediating role of peer relationships. *Journal of Clinical Nursing* 2015;24(15-16):2886–94.
- [49] Moore J, Prentice D. Collaboration among nurse practitioners and registered nurses in outpatient oncology settings in Canada. *Journal of Advanced Nursing* 2013;69(7):1574–83.

