


# The Relationship of Nursing Teamwork and Job Satisfaction in Hospitals

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## Abstract

**Introduction:** Teamwork is identified as a key contributor to patient safety and good teamwork is recognized as one of the presumptions of healthy work environment in nursing. The importance of job satisfaction in nursing has repeatedly been confirmed, but only recently has the association of job satisfaction and nursing teamwork been identified.

**Objective:** To identify the level of nursing teamwork in hospitals in Iceland and its relationship with job satisfaction.

**Methods:** This was a quantitative descriptive cross-sectional study. Data were collected with the *Nursing Teamwork Survey* administered to nursing staff in medical, surgical, and intensive care units in hospitals in Iceland. This study is based on data from 567 participants.

**Results:** A logistic regression analysis indicated that work experience on current unit and perceived staffing adequacy contributes to job satisfaction and when controlling for unit type, role, experience on current unit and staffing adequacy, those reporting better teamwork are significantly more likely to be satisfied with their current position. With an additional unit for overall nursing teamwork, participants are almost five times likelier to be satisfied with their current position.

**Conclusion:** Study findings show that there is a significant relationship between nursing teamwork and job satisfaction. The findings of this study confirm the importance of adequate staffing and good teamwork for nurses' job satisfaction. Staffing however, will remain the most challenging part of the equation as lack of nursing staff is foreseen globally in the coming decades turning the spotlight to teamwork. All stakeholders, including clinical nurse leaders, administrators, and instructors, need to emphasize on strengthening nursing teamwork. Good teamwork with increased job satisfaction may prevent turnover and shortage of nurses, an issue expected to grow during and following the COVID-19 pandemic. Facilitating good teamwork should be one of the priorities of every nurse leader.

## Keywords

hospitals, job satisfaction, nurses, nursing, nursing staff, teamwork

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## Introduction

The modern health care delivery system is complex and rapidly changing and it is therefore important for nursing staff to work together to secure patient safety (Jomaa et al., 2021) and quality of care (Kalisch et al., 2007; Zeleníková et al., 2020). Teamwork and team-based care are identified as key contributors to patient safety and quality patient care (Mitchell et al., 2012; WHO, 2016). Good teamwork is also recognized as one of the presumptions for a healthy work environment in nursing as it supports optimal nurse and patient outcomes (Aiken et al., 2013; Elbejjani et al., 2020; Kirwan et al., 2013; Lu et al., 2019). In a healthy work environment, staffing is appropriate, nurses can

practice to their full potential and job satisfaction is high (Kirwan et al., 2013; Kutney-Lee et al., 2013; Zeleníková et al., 2020). Teamwork and job satisfaction are significant

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contributors to patient and staff safety. Effective teamwork has been linked with higher job satisfaction and job satisfaction has been reported to have a strong positive association with nurses' intent to leave work and turnover (Kalisch et al., 2010). The importance of job satisfaction in nursing has repeatedly been confirmed and its effect on turnover, but only a few studies have identified the association of job satisfaction and nursing teamwork (Goh et al., 2020; Kalisch et al., 2010; Rafferty et al., 2001).

Few studies are published on the influence of teamwork on job satisfaction, indicating a need for the matter. The purpose of this study was to identify the level of nursing teamwork in hospitals in Iceland and its relationship with job satisfaction.

## Review of Literature

The importance of teamwork in health care has received substantial attention in recent years as has the importance of job satisfaction in nursing. Teamwork is recognized as being a complex social activity where a group of people work together to achieve a task or goal (Sargeant et al., 2008). Teamwork has always been important in nursing because it is vital for nursing staff to work together to be able to fulfill the goals of patient care needs, although often unrecognized (Leonard et al., 2004). Study findings show the importance of nursing teamwork in the achievement of collaboration and communication (Al Sayah et al., 2014; Kalisch et al., 2007) as well as its association with workload and work-related stress (Kalisch & Lee, 2011), staffing adequacy (Bragadóttir et al., 2019; Goh et al., 2020; Jomaa et al., 2021), nurses health outcomes (Elbejjani et al., 2020), job satisfaction and intent to leave (Abualrub et al., 2012; Gebregziabher et al., 2020; Goh et al., 2020; Kalisch et al., 2010; Rafferty et al., 2001). Internationally, study results indicate that good teamwork may prevent turnover and shortage of nurses and staff (Abualrub et al., 2012; Al Sabei et al., 2022; Estry-Behar et al., 2007).

Job satisfaction seems to differ significantly between countries (Burmeister et al., 2019; Sanner-Stiehr et al., 2021). In Iceland, nurses' job satisfaction is known to be high (Burmeister et al., 2019; Gunnarsdóttir et al., 2009), and indications are that number of variables contribute to nurses' job satisfaction, not least job stress and support from nurse unit managers (NUMs) (Flygenring & Sveinsdóttir, 2014), but the extent to which teamwork contributes to job satisfaction of nursing staff in Iceland has not been studied previously. A previous descriptive study using the same data set, revealed a statistically significant correlation between teamwork and job satisfaction indicating more satisfaction of nursing staff with both their role and current position with better teamwork. Other studies on teamwork and job satisfaction among nursing staff in Iceland were not identified.

Job satisfaction indicates the extent to which people like or dislike their job (Spector, 1997). However, job satisfaction does not depend entirely on the nature of the job, but no less on the expectations people have about their job (Lu et al., 2012). Job

satisfaction is the variable that has been studied widely in nurses' work environment, especially because of its strong positive link to nurses' turnover. Job satisfaction of nurses has also been found to link positively to a variety of work-related factors. Among others these factors are type of unit, the work environment of nurses, whether working overtime or not, absenteeism and length of tenure. Type of unit may contribute to job satisfaction as a cross-sectional study from the United States (US) with a sample of 53,851 nurses from 162 hospitals showed that nurses working in medical-surgical units reported significantly higher job satisfaction than those working in other type of units (Klaus et al., 2012). A recent study conducted in hospitals in the Czech Republic, with a sample of 513 nurses providing direct patient care, indicated significantly more satisfaction with role as well as profession with better practice environment and better teamwork (Zeleníková et al., 2020). Study findings indicate that nurses job satisfaction is significantly less when they work overtime (Han et al., 2015; Klaus et al., 2012) and nurses with fewer absences from work are more satisfied with their work (Burmeister et al., 2019; Roelen et al., 2013). Nurses with longer tenure are more satisfied than those with shorter tenure (Björk et al., 2007) and nurses' job satisfaction correlates positively with their intention to stay in work (Gebregziabher et al., 2020; Lu et al., 2019) which is a strong predictor of nursing staff turnover (Murrells et al., 2008).

Although studies on the influence of teamwork on job satisfaction are limited in number, they show that nurses with high interprofessional teamwork scores are more satisfied with their work and intend to stay in work (Al Sabei et al., 2022; Ma et al., 2015; Rafferty et al., 2001). Also, a higher level of nursing teamwork leads to greater general job satisfaction (Goh et al., 2020) as well as greater satisfaction with role and current position (Kalisch et al., 2010; Zeleníková et al., 2020) and nurses feel more satisfied with their work when they experience high-quality communication with other team members (Trybou et al., 2015). Low scores of teamwork have been associated with increased intent to leave work among nurses (Estry-Behar et al., 2007). In summary, indications are that nursing teamwork may contribute significantly to job satisfaction, which in turn impacts a nurse's decision whether to stay or leave current work.

## Methods

### Design

The study was a quantitative descriptive cross-sectional study using a paper-and-pencil questionnaire.

### Research Questions

The following research questions are addressed in this study:

1. How do nursing staff in hospitals in Iceland evaluate the level of nursing teamwork on their unit?

2. What are the relationships of hospital, unit and staff characteristics, and nursing teamwork and job satisfaction?
3. To what extent do unit and staff characteristics and nursing teamwork predict job satisfaction?

### Setting and Sample

All nursing staff reporting to each NUM were included in the sample including the NUMs as well as registered nurses (RNs), practical nurses (PNs), and unit secretaries. Due to the small population of Iceland, and therefore the relatively low total number of nursing staff working in hospital units meeting the inclusion criteria, all eligible nursing staff were included in the study. The inclusion criteria for participating in the study were as follows: be at least 18 years old, belong to the nursing staff on the unit, be permanently employed, provide direct patient care, spend the majority of ones working time on the unit, understand Icelandic. Temporary staff were excluded from the study. The sample consisted of the entire nursing staff ( $N = 925$ ) in all Icelandic inpatient medical, surgical, and intensive care units (ICUs) in the eight hospitals in the country. Total return rate was 69%. Data from 567 participants (61%) are used in this study.

### Measures

A multiple-choice questionnaire was used for data collection including questions on background variables, questions on job satisfaction, and a question on nursing teamwork. The questionnaire used in this study is an Icelandic version of the *Nursing Teamwork Survey (NTS)*, *NTS-Icelandic*, developed in the US (Kalisch et al., 2010). The *NTS*, both the US and Icelandic versions, have undergone rigorous testing processes of its acceptability, reliability, and validity (Bragadóttir et al., 2016; Kalisch, Lee & Salas, 2010). An overall test-retest intraclass correlation coefficient for the *NTS-Icelandic* was 0.693 (lower bound = 0.498, upper bound = 0.821) ( $p < .001$ ) with Cronbach's alpha reliability for the total scale and subscales ranging from 0.737 to 0.911. A confirmatory factor analysis indicated a good fit of the data with the five-factor model for nursing teamwork (Bragadóttir et al., 2016).

Hospitals were categorized into teaching hospitals with one university hospital and one teaching hospital, and other hospitals with six small regional hospitals in rural areas. Patient units were categorized into medical units (11), surgical units (8), mixed medical and surgical units (5), and ICUs (3). All mixed medical and surgical units were in the small hospitals whereas all the ICUs were in the teaching hospitals. Participants were asked about the staffing adequacy on their unit, as to how often they felt the unit staffing was adequate, where they answered 100%, 75%, 50%, 25%, or 0% of the time. The staff characteristic variables used in this study were gender, age, role (job title), number of hours worked

per week, what type of shift usually worked, experience in role, experience on current unit, overtime, sick days, and intent to leave.

The *NTS* has five subscales with a total of 33 items put forward as statements on: *trust* (7 items), *team orientation* (9 items), *backup* (6 items), *shared mental model (SMM)* (7 items), and *team leadership* (4 items). Participants are asked to answer by marking on a 5-point Likert-type scale to what extent each statement applies to their team: (1) rarely, (2) 25% of the time, (3) 50% of the time, (4) 75% of the time, and (5) always. A higher score indicates better teamwork.

Job satisfaction was measured with two questions with a 5-point Likert-type scale ranging from (1) "very dissatisfied" to (5) "very satisfied." One question asked about the satisfaction of the participant with current position and another question asked about how satisfied the participant was in their role, that is, RN, PN, NUM, or a unit clerk/secretary, independent of their current job.

### Ethical Considerations

The study was approved by the Institutional Review Board in each hospital, or analogue body in the smaller hospitals and notified to the Data Protection Authority of Iceland (S5388/2011). Participation was anonymous and participating equaled a written informed consent. The names of participants were never revealed to the researchers and the liaison persons distributed the questionnaires with an invitation letter and a response envelope, to staff members. All data were preserved in a protected space.

### Data Collection Procedures

Data were collected with the help of NUMs and a liaison person in each unit. The liaison oversaw the distribution of a questionnaire with a cover letter and a return envelope to each staff member. Participants returned their completed questionnaire in a sealed envelope, by dropping it in the in-house hospital mailbox or special study drop-box located on their unit.

### Data Analysis

IBM SPSS version 24.0 (IBM Corp., Armonk, NY) was used for data analysis. The unit of analysis was the individual staff member. Data from participants who had answered at least 70% of the *Nursing Teamwork Survey* questions were included. Missing data were not compensated. Demographic and background variables were defined as categorical variables and recorded as dummy variables. The variable of nursing teamwork was defined as a continuous variable. For teamwork, an overall mean score was calculated as well as a mean score for each subscale and each item. For data analysis when using the chi-square test and for regression analysis, both variables of job satisfaction were treated as binary

variables categorizing answers into “dissatisfied” (combining “neutral”, “dissatisfied,” and “very dissatisfied”) and “satisfied” (combining “very satisfied” and “satisfied”).

A previous study revealed that the overall teamwork score and the subscales of *NTS* were highly correlated opposing using the overall scale and as well as the subscales as separate measures for regression analysis (Kalisch & Lee, 2010). As the variables hospital and unit covariate, only the variable unit was used for the model testing. For the model testing, satisfaction with current position was used as the variable for job satisfaction.

Frequency distribution, correlation test, and logistic regression analysis were used to answer the research questions. A chi-square test was used to calculate the differences between groups within each characteristic of hospitals, units, and participants. Where the expected frequency was low, the Yates’ chi-square test was used. An independent *t*-test was used to identify the relationship between job satisfaction and overall teamwork and each of the subscales of teamwork. Binary logistic regression was used to test two models to answer the research question about the relationship of the unit and staff characteristics and nursing teamwork to job satisfaction. Model 1 tested to what extent unit and staff characteristics predicted the variance in job satisfaction and Model 2 tested the extent to which nursing teamwork predicted the variance in job satisfaction when controlling for unit and staff characteristics.

## Results

### Sample Characteristics

Table 1 shows the characteristics of hospitals, units, and participants. Most participants worked in the teaching hospitals (78.94%), in medical units (34.87%) and surgical units (31.15%). The majority were women (98.58%), 54 years or younger (81%), RNs (57.52%) and PNs (35.58%), working rotating shifts (81.59%), 30 h or more per week (76.02%). Most of them had greater than 10 years’ experience in their current role (54.30%) and more than 5 years’ experience on their current unit (55.90%). The minority (25.77%) had not worked any overtime in the past three months. Less than half of the participants (46.44%) had been absent more than one day in the past three months. The majority (70.86%) of the participants identified the staffing on their unit adequate half or less (0%, 25%, or 50%) of the time. The vast majority had no intent to leave their current position within the next year (87.84%).

### Nursing Teamwork

Table 2 shows the mean (M) and standard deviation (SD) for the nursing teamwork scores. The mean overall teamwork score was 3.89 (SD = 0.47). The subtheme scoring highest was *SMM* with a mean score of 4.20 (SD = 0.48) and *team*

*leadership* getting the lowest mean score of the subthemes, 3.65 (SD = 0.75).

### Relationship of Characteristics of Hospitals, Units, and Participants and Nursing Teamwork With Job Satisfaction

Table 1 shows the unit and staff characteristics that had a statistically significant correlation with job satisfaction. A statistically significant relationship was identified between perceived adequacy of staffing and intent to leave current position and both satisfaction with current position and satisfaction in role. Participants who perceived staffing on their unit adequate half or more of the time and those who had no intention of leaving their position within the next year were more satisfied with their current position as well as in their role. Also, there was a significant relationship between years of experience on current unit and satisfaction with current position. Correlational tests showed no significant relationship between hospital, unit type, gender, age, role, work hours, hours worked per week, overtime, absenteeism, or years of experience in role.

Table 3 shows the relationship of nursing teamwork with satisfaction with current position and Table 4 shows the relationship of nursing teamwork with satisfaction in role. A statistically significant relationship was identified between overall nursing teamwork as well as all the subscales of teamwork and both satisfaction with current position and satisfaction in role. An independent *t*-test indicated that with higher overall teamwork as well as higher trust, team orientation, backup, *SMM*, and team leadership scores, there was more satisfaction with current position (Table 3). Satisfaction in role tested significantly more with higher overall teamwork as well as higher team orientation, backup, and *SMM* (Table 4).

### The Extent to Which Unit and Staff Characteristics and Nursing Teamwork Predict Job Satisfaction

As seen in Table 5, the two models tested with logistic regression analysis show a significant contribution of experience on current unit, perceived staffing adequacy, and overall nursing teamwork to job satisfaction. The testing of Model 1 indicated a non-significant contribution of unit type and role to the variance of satisfaction with current position. However, those participants who have up to 2 years’ work experience on current unit are more than two times likelier to be satisfied than those with more than 2 years’ experience, those who perceived the staffing on their unit adequate more than half of the time are almost three times as satisfied with their current position compared to those who perceived the staffing adequate half or less of the time. Model 1 explains 8% of the variance in job satisfaction. When adding overall nursing teamwork to the model (Model 2), the logistic regression shows that when controlling for unit type, role, experience on current unit, and staffing adequacy, those reporting

**Table 1.** Characteristics of Hospitals, Units, and Participants ( $N = 567$ ) and the Relationship With Job Satisfaction (Satisfaction in Role and Satisfaction With Current Position).

Variable	<i>n</i>	%	Job satisfaction - current position % satisfied	Job satisfaction - in role % satisfied
<b>Hospital<sup>a</sup></b>				
Teaching hospital	446	78.94	87.67	92.83
Other hospital	119	21.06	85.71	94.12
<b>Unit<sup>a</sup></b>				
Medical	197	34.87	87.82	92.89
Surgical	176	31.15	85.23	93.18
Mixed medical-surgical	90	15.93	92.22	92.22
ICU	102	18.05	85.29	94.12
<b>Gender<sup>b</sup></b>				
Female	555	98.58	87.21	92.97
Male	8	1.42	87.50	100.00
<b>Age<sup>a</sup></b>				
Under 25 years	22	3.9	95.50	100.00
26–34 years	130	23.0	91.50	90.80
35–44 years	143	25.3	85.90	94.40
45–54 years	163	28.8	43.30	92.00
55–64 years	95	16.8	96.30	95.80
65 years or older	12	2.1	100.00	83.30
<b>Role<sup>b</sup></b>				
RN	325	57.52	87.08	93.54
PN	201	35.58	86.57	91.54
NUM	19	3.36	89.47	100.00
Secretary	20	3.54	95.00	95.00
<b>Work hours<sup>b</sup></b>				
Days (8 or 12 h shifts)	59	10.44	88.14	94.92
Evenings (8 or 12 h shifts)	18	3.19	88.89	94.44
Nights (8–12 h shifts)	27	4.78	85.19	88.89
Rotating shifts (day, nights, and/or evenings)	461	81.59	87.20	93.06
<b>Hours worked per week<sup>a</sup></b>				
Less than 30 h	135	23.98	84.44	93.33
30 h or more	428	76.02	88.08	92.99
<b>Hours of overtime in past 3 months<sup>a</sup></b>				
None	143	25.77	84.62	95.10
1–12 h	246	44.32	88.62	91.46
More than 12 h	166	29.91	87.35	93.37
<b>Days or shifts absent in past 3 months<sup>a</sup></b>				
None-1 day or shift	301	53.56	86.71	94.02
2 or more days or shifts	261	46.44	88.12	91.95
<b>Years of experience in role<sup>a</sup></b>				
Up to 2 years	75	13.44	93.33	93.33
Greater than 2 years to 5 years	81	14.52	85.19	87.65
Greater than 5 years to 10 years	99	17.74	88.89	94.95
Greater than 10 years	303	54.30	85.81	93.73
<b>Years of experience on current unit<sup>a</sup></b>				
Up to 2 years	125	22.32	93.60	92.80
Greater than 2 years to 5 years	122	21.79	80.33	90.98
Greater than 5 years to 10 years	114	20.36	86.84	93.86
Greater than 10 years	199	35.54	87.94	93.97
<b>Perceived adequacy of staffing<sup>a</sup></b>				
51–100% of the time	162	29.14	7.78	87.04
0–50% of the time	394	70.86	91.37	95.69
<b>Intent to leave<sup>b</sup></b>				
			***	*

(continued)

Table 1. Continued.

Variable	<i>n</i>	%	Job satisfaction - current position % satisfied	Job satisfaction - in role % satisfied
Intent to leave within a year	68	12.16	64.71	86.76
No intent to leave	491	87.84	91.04	94.09

<sup>a</sup>Chi-square test.

<sup>b</sup>Yates' chi-square test.

Significant difference: \**p* < .05; \*\**p* < .01; \*\*\**p* < .001.

Table 2. Mean and Standard Deviation of Teamwork.

Factors and statements	M	I–5 (SD)
<b>Mutual trust</b>	<b>3.90</b>	<b>(0.56)</b>
Team members trust each other (Q.33)	4.22	(0.67)
Team members readily share ideas and information with each other (Q.24)	4.08	(0.74)
Team members communicate clearly what their expectations are of others (Q.4)	3.64	(0.91)
When someone does not report to work or someone is pulled to another unit, we reallocate responsibilities fairly among the remaining team members (Q.32)	4.01	(0.81)
Team members value, seek and give each other constructive feedback (Q.31)	3.50	(0.95)
My team readily engages in changes in order to make improvements and new methods of practice (Q.23)	4.01	(0.81)
Team members clarify with one another what was said to be sure that what was heard is the same as the intended message (Q.25)	3.85	(0.87)
<b>Team orientation</b>	<b>3.80</b>	<b>(0.67)</b>
When a team member points out to another team member an area for improvement, the response is often defensive (Q.13)	4.08	(1.02)
If the staff on one shift is unable to complete their work, the staff on the on-coming shift complains about it (Q.15)	4.27	(0.95)
Team members are more focused on their own work than working together to achieve the total work of the team (Q.26)	3.64	(1.21)
Some team members spend extra time on breaks (Q.11)	3.84	(1.25)
Feedback from team members is often judgmental rather than helpful (Q.22)	4.23	(1.05)
Practical nurses and nurses do not work well together as a team (Q.18)	4.33	(1.09)
Team members ignore many mistakes and annoying behavior of teammates rather than discussing these with them (Q.5)	3.42	(1.24)
Staff members with strong personalities dominate the decisions of the team (Q.16)	3.13	(1.20)
Most team members tend to avoid conflict rather than dealing with it (Q.17)	3.33	(1.20)
<b>Backup</b>	<b>3.78</b>	<b>(0.63)</b>
My team believes that to do a quality job, all of the members need to work together (Q.9)	4.40	(0.69)
Team members willingly respond to patients other than their own when other team members are busy or overloaded (Q.30)	4.01	(0.90)
Within our team, members are able to keep an eye out for each other without falling behind in our own individual work (Q.28)	3.87	(0.84)
The nurses who serve as charge nurses or teamleaders are available and willing to assist team members throughout the shift (Q.19)	3.80	(1.03)
Team members frequently know when another team member needs assistance before that person asks for it (Q.3)	3.42	(0.91)
Team members notice when a member is falling behind in their work (Q.20)	3.35	(1.10)
<b>Shared mental model</b>	<b>4.20</b>	<b>(0.48)</b>
Team members understand the role and responsibilities of each other (Q.29)	4.24	(0.70)
When the workload becomes extremely heavy, team members pitch in and work together to get the work done (Q.21)	4.21	(0.81)
Team members respect one another (Q.12)	4.24	(0.67)
Team members know that other members of their team follow through on their commitment (Q.7)	4.06	(0.71)
All team members understand what their responsibilities are throughout the shift (Q.1)	4.37	(0.66)
The shift change reports contain the information needed to care for the patients (Q.10)	4.28	(0.73)
Team members are aware of the strengths and weaknesses of other team members they work with most often (Q.14)	3.77	(0.77)
<b>Team leadership</b>	<b>3.65</b>	<b>(0.75)</b>
The nurses who serve as charge nurses or teamleaders give clear and relevant directions as to what needs to be done and how to do it (Q.27)	3.71	(0.95)
The nurses who serve as charge nurses or teamleaders balance workload within the team (Q.8)	3.90	(0.78)
The nurses who serve as charge nurses or teamleaders monitor the progress of the staff members throughout the shift (Q.2)	3.70	(0.97)
When changes in the workload occur during the shift (admissions, discharges, patients problems etc.), a plan is made to deal with these changes (Q.6)	3.29	(1.23)
<b>Overall nursing teamwork</b>	<b>3.89</b>	<b>(0.47)</b>

**Table 3.** The Relationship of Teamwork and Satisfaction With Current Position.

		<i>n</i>	Mean	SD	Independent <i>t</i> -test	Sig.
Trust	Satisfied	485	3.95	0.51	4.28	***
	Dissatisfied	72	3.57	0.75		
Team orientation	Satisfied	491	3.86	0.63	4.83	***
	Dissatisfied	71	3.39	0.79		
Backup	Satisfied	493	3.83	0.58	4.35	***
	Dissatisfied	72	3.40	0.81		
Shared mental model	Satisfied	493	4.23	0.45	3.88	***
	Dissatisfied	72	3.94	0.61		
Team leadership	Satisfied	486	3.70	0.71	3.88	***
	Dissatisfied	71	3.27	0.90		
<b>Overall nursing teamwork</b>	Satisfied	493	3.94	0.43	5.46	***
	Dissatisfied	72	3.53	0.62		

Significant difference: \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

**Table 4.** The Relationship of Teamwork and Satisfaction With Role.

		<i>n</i>	Mean	SD	Independent <i>t</i> -test	Sig.
Trust	Satisfied	518	3.92	0.55	1.66	
	Dissatisfied	39	3.72	0.75		
Team orientation	Satisfied	523	3.83	0.65	3.45	**
	Dissatisfied	39	3.45	0.75		
Backup	Satisfied	526	3.80	0.61	2.04	*
	Dissatisfied	39	3.53	0.80		
Shared mental model	Satisfied	526	4.21	0.46	3.15	**
	Dissatisfied	39	3.96	0.66		
Team leadership	Satisfied	518	3.66	0.74	1.24	
	Dissatisfied	39	3.51	0.86		
<b>Overall nursing teamwork</b>	Satisfied	526	3.91	0.46	3.50	***
	Dissatisfied	39	3.64	0.63		

Significant difference: \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

better teamwork are significantly more likely to be satisfied with their current position. With teamwork added to the model it explains 18% of the variance in job satisfaction. With an additional unit for overall nursing teamwork, participants are almost five times likelier to be satisfied with their current position.

## Discussion

The findings of this study show that there is a significant relationship between nursing teamwork and job satisfaction. The study reveals both strengths and potentials for improvement of nursing teamwork on inpatient units in Icelandic hospitals, where experience on the unit and staffing need to be taken into consideration. These findings clearly indicate the importance of teamwork on job satisfaction.

When compared with findings from other countries using the same questionnaire, the mean overall score of nursing teamwork in our study seems higher than is seen in other studies (Chapman et al., 2016; Goh et al., 2020; Kaiser &

Westers, 2018; Kalisch & Lee, 2010). Similarities and differences are seen in the ranking of highest and lowest mean scores of subthemes, indicating some difference in work environment, systems, and culture. In our study, the ranking of subthemes of teamwork was: SMM, trust, team orientation, backup, and team leadership. In a recent study from the US, the ranking of subthemes was in the following order: SMM, team leadership, trust, backup, and team orientation (Kaiser & Westers, 2018), and in another recent study from Singapore, the ranking of subthemes was in the following order: SMM, team leadership, backup, trust, and team orientation (Goh et al., 2020). These findings may indicate cultural as well as organization and systems differences between countries. The important leadership role of NUMs for efficient nursing teamwork may be better recognized in both the US and Japan (Furkawa & Kashiwagi, 2021; Manges et al., 2016), than in Iceland. In comparison to the US, one explanation of this difference may be that in the US the TeamSTEPPS® program, providing evidence-based tools for improving teamwork among health care professionals

**Table 5.** Logistic Regression—Predictors of Job Satisfaction (Satisfaction With Current Position).

	Model 1		OR	Sig.	Model 2		OR	Sig.
	B	SE			B	SE		
<b>Unit</b>								
ICU (R)								
Medical	−0.42	0.47	0.66		−0.03	0.49	0.97	
Surgical	−0.55	0.46	0.58		−0.20	0.48	0.82	
Mixed	−0.74	0.50	0.48		−0.47	0.52	0.62	
<b>Role</b>								
Secretary (R)								
RN	−0.94	1.06	0.39		−0.31	1.06	0.73	
PN	−0.86	1.06	0.42		−0.26	1.07	0.77	
NUM	−0.57	1.29	0.56		−0.40	1.29	0.67	
<b>Experience on unit</b>								
Greater than 2 years (R)								
Up to 2 years	0.88	0.40	2.41	*	0.84	0.41	2.31	*
<b>Perceived adequacy of staffing</b>								
0–50% of the time (R)								
51–100% of the time	1.04	0.27	2.82	***	0.78	0.28	2.18	**
<b>Teamwork</b>								
Overall nursing teamwork					1.53	0.30	4.63	***
N	551				551			
Nagelkerke R <sup>2</sup>	0.08				0.18			
−2 Log	390.315				361.283			
df	8				9			

\**p* < .05; \*\**p* < .01; \*\*\**p* < .001.

(<https://www.ahrq.gov/teamstepps/index.html>), has been in place for almost two decades (King et al., 2008). This may have made a difference in the improvement of clinical team performance and helped clarify the role of nursing team leaders (Manges et al., 2016). No comparable teamwork training program is offered nationwide in Iceland.

Regarding job satisfaction, the majority of our participants were satisfied with their current position and with their role. Job satisfaction among nurses in Iceland has been measured high (Gunnarsdóttir et al., 2009), and in a recent study including data from seven countries around the world, Icelandic nurses were the most satisfied with their current position as well as with their role (Burmeister et al., 2019). A recent study including nurses from the US, Italy, and Finland, with the aim of identifying the difference in job satisfaction and multigenerational nursing characteristics between countries and generations, indicated a significant difference between nurse job satisfaction between countries and multigenerational characteristics, but not between generations (Sanner-Stiehr et al., 2021). These findings are a manifesto about how complex the phenomenon of job satisfaction is as it does not only depend on the nature of the job, but also on the expectations people have about their job (Lu et al., 2012) which again may depend on a number of different factors.

Staffing, not least nurse staffing, is one of the biggest challenges facing health care systems in the world at present and

in the future (WHO, 2020). In our study staffing adequacy and teamwork contribute significantly to job satisfaction. These findings point to the importance of preventing a vicious cycle of inadequate staffing, inefficient teamwork, job dissatisfaction, and turnover (Sasso et al., 2019). Looking at the two influential variables, staffing and teamwork, it may be equally important for nursing and health care leaders to strengthen their teams through effective interventions (Buljac-Samaradzic et al., 2020), as it is to secure adequate staffing (WHO, 2020).

Interestingly our findings on participants with up to 2 years' work experience on the unit being significantly more satisfied with current position is in concordance with findings from a comparable study in Singapore (Goh et al., 2020), indicating some sort of honeymoon period in the first 2 years in nurses working life, which needs attention. These findings point to the importance of developing interventions to support the continuum of job satisfaction and retain nurses in their transition to practice (Boamah & Laschinger, 2016; Brunetto et al., 2013; Edwards et al., 2015; Laschinger et al., 2016).

The key findings of this study are that experience on current unit, perceived staffing adequacy, and nursing teamwork contribute significantly to job satisfaction of nursing staff in hospitals in Iceland. These findings are somewhat comparable to those from a study in the US (Kalisch, Lee, & Rochman, 2010) as well as a study from Singapore (Goh



et al., 2020) where experience on current unit, perceived staffing adequacy, and nursing teamwork were among variables that contributed significantly to job satisfaction, showing a significant positive relationship of teamwork and job satisfaction.

### Implications for Practice

The findings of this study confirm the importance of adequate staffing and good teamwork for nurses' job satisfaction, and therefore quality of care, having implications for all stakeholders of health care services. Staffing however, will remain the most challenging part of the equation as lack of nursing staff is foreseen globally in the coming decades turning the spotlight to teamwork. Therefore, clinical nurse leaders, administrators, and instructors are encouraged to emphasize on strengthening nursing teamwork for the benefit of quality patient care.

### Study Strengths and Limitations

This study has both strengths and limitations. The main strengths of this study are the use of a reliable and valid tool, the *NTS-Icelandic*, and a satisfactory response rate of 69% from a national sample of nursing staff. The first-time use of the questionnaire in Icelandic may be a limitation, also the varying response rates of each unit, and that no extraneous variables were controlled. However, the study is considered to have served its purpose.

### Conclusion

Teams and team-based health care are identified as core components for patient safety (Mitchell et al., 2012; WHO, 2016) where nurse clinicians as well as nurse leaders play a key role (Institute of Medicine, 2004). Nurse leaders not only have the role and responsibility of leading teams but also it is their duty to see to it that nursing staff get any education and training needed for practicing effective teamwork (Logan & Malone, 2018). Studies show that education and team training in nursing and health care is successful, not the least when it includes role plays and simulation (Brodsky et al., 2013; Campbell et al., 2020; Kalisch et al., 2013). The findings from our study as well as the study from Kalisch et al. (2010) from the US and the study from Goh et al. (2020) from Singapore not only identify the significant association of nursing teamwork and job satisfaction, but also the importance of identifying characteristics at the organizational, unit and individual staff level which may influence teamwork. Therefore, culturally sensitive interventions (Rice et al., 2021), directed at individual staff members, as well as the team or unit level, or even the organizational level, should be tailored to the different groups of staff according to work experience (Delisle et al., 2020). During the COVID-19 pandemic this has become an even bigger

concern than before and recent studies, conducted during the COVID-19 pandemic, confirm the importance of keeping our focus on teamwork and job satisfaction for nurse retention and quality of nursing care (Anjara et al., 2021; Lavoie-Tremblay et al., 2022; Said & El-Shafei, 2021; Zhang et al., 2022). Facilitating and supporting good teamwork should therefore be one of the priorities in every nurse leader's work.

### Authorship Contribution Statement

It is confirmed that all listed authors meet the authorship criteria and all authors are in agreement with the content of the manuscript.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.


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### Ethical statement

The study was approved by the Institutional Review Board in each hospital, or analogue body in the smaller hospitals and notified to the Data Protection Authority of Iceland (S5388/2011). Participation was anonymous and participating equaled a written informed consent. The names of participants were never revealed to the researchers and the liaison persons distributed the questionnaires with an invitation letter and a response envelope, to staff members. All data were preserved in a protected space.

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### Supplemental Material

Supplemental material for this article is available online.

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