

# Inadequate teamwork and burnout as predictors of intent to leave nursing according to seniority. Stability of associations in a one-year interval in the European NEXT Study.

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## 1. Introduction

Europe's nursing shortage has drawn attention from both practitioners and scientists. The effects of health care economic constraints and restructuring have had a deleterious effect on the job satisfaction of nurses. At the same time, the average stay duration of patients' decreases and patients' acuity rises. The nursing profession has become more technical and difficult (Ootim 2002; Baker et al. 2004). There is a serious need for improvement of teamwork communication and decision sharing (Kalisch, Begeny 2005) in or-

der to prevent overtime work and emotional distress, the latter being a potential factor leading to errors (Silen-Lipponen et al. 2005; Spear, Schmidhofer 2005), and premature leave. Patients cared for within units characterized as having adequate staff, good administrative support, and good relations between doctors and nurses are likely to report high satisfaction with their care, and their nurses report significantly less burnout (Vahey et al. 2004). Also, in studies conducted across different departments, multidisciplinary teamwork has shown to increase job satisfaction (Foley et al. 2002; Ernst et al. 2005). Factors that proved

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to predict turnover intentions include low job satisfaction, work-related distress and burnout, lack of career prospects, poor salary, managerial environment, employment conditions as well as individual characteristics, such as being young and having short job tenure (Fischer et al. 1994; Janssen et al. 1999; Shields, Ward 2001), and musculoskeletal disorders (Fochsen et al. 2006). In this contribution we investigate how personal, team and organizational characteristics are related to intent to leave nursing (ITL) according to seniority.

## **2. Methods**

### **2.1. The NEXT Study**

The part of the NEXT Study that is reported here investigated nurses and nursing aids in Belgium, Finland, France, Germany, Italy, Netherlands, Norway, Poland, Slovakia, and UK. A stratified sample was used aimed at covering the distribution of nurses across the country's regions, the different types of health care institutions, and the professional levels nursing worked at (qualified registered and specialized nurses, head nurses, as well as nursing aids and ancillary staff). Finally, 185 hospitals and private clinics, 76 home care services, 185 nursing homes, and 163 outpatient care institutions were included (see Hasselhorn et al. 2003 for more specific information).

### **The 'baseline questionnaire'**

The 'baseline questionnaire' (Q0) was developed by a group of experts (medical doctors, nurses, and psychologists), drawing on previous research, interviews with nursing staff, and three pilot studies. It covers occupational biography, private situation, work demands, work organization, social work environment, individual resources, and future occupational plans. The first assessment was carried out between October 2002 and June 2003. Completed questionnaires were returned by postal mail to the national research institutions by means of a pre-paid envelope.

### **The 'twelve-month follow-up questionnaire'**

The follow-up assessment (Q12) was performed among all respondents who have

remained in their institution in all countries, except for the UK and Norway. For this measurement 55,571 questionnaires were sent out. The response rate was 42.3%, as compared to 51.4% for the Q0 that was sent to 77,681 nurses.

### **2.2. Sample**

In order to increase the comparability of the respondents in our sample, the analysis was restricted to registered nurses (71% of all respondents). The analysis pertaining to the Q0 concerned 28,418 state-registered nurses without managerial tasks, among whom 17.3% had obtained a diploma in a nursing specialization. Q12 analysis comprised 16,734 state-registered nurses without managerial duties, of whom 10.6% were specialized. Mean age in the total sample was 38.78 years (SD=8.96); 15.3% of the respondents had less than five years of seniority, 36.9% 5 to 14 years, 31.7% between 15 to 24 years, and 16.1% had 25 years of seniority or more; 10.7% of the respondents were male with great differences between the participating countries.

### **2.3. Measures**

#### **2.3.1. Dependent variable**

Intent to leave (ITL) was measured by one item: "How often during the course of the past year have you thought about giving up nursing?". The scale anchors comprised: "never", "sometimes a year", "sometimes a month", "sometimes a week", and "every day". "Sometimes a month" or more often was interpreted as frequent ITL (15.6% of the total sample).

#### **2.3.2. Predictor variables**

As indicators for **psychosocial risk factors** the following variables were used: (1) quality of teamwork, (2) quality of interpersonal relationships, (3) possibilities for development, (4) uncertainty regarding treatments. The scale reliabilities using Cronbach's alpha were respectively .78, .69, .76, and .72. The scales were divided into tertiles with the nurses with the best situation as the reference group. More detailed information on the psychometric properties of the varia-

bles 2, 3 and 4 can be found in Hasselhorn et al. (2003).

**Quality of teamwork** was measured by means of two sub-scales and one combined item. A four-item scale ‘satisfaction with teamwork’ based on the answers to the following questions: “How pleased are you with...?” (a) psychological support at your workplace, (b) the way your abilities are used, (c) your opportunities to give your patients the care they need, and (d) your work prospects. A four-point rating scale was used. Three-item and five-point rating scale pertaining to the ‘quality of information sharing’: (a) “How often do you have to perform tasks for which you are not qualified enough?”, (b) “How often do you receive information, which is relevant to your work, insufficiently or too late?”, and (c) “How often do you receive conflicting/contradictory orders concerning the performance of your work?”. An additional single item was: “In your department, are there opportunities to discuss professional matters which you think are important?”. For the UK, quality of teamwork could not be calculated as not all items of the measure were included in the survey. The following tertiles were used, nurses with the most favorable situation as the reference group: (1) low, 1–3.19; (2) medium, 3.20–3.70; and (3) high, 3.71–5.

As indicators for **personal risk factors** the following variables were included: age, seniority, gender, occupational level, personal situation, work-family conflict (five-item scale, Cronbach’s alpha .88), and satisfaction with pay (three-item scale, Cronbach’s alpha .80).

As indicators for **health risks**, self-reported musculoskeletal disorders, mental health disorders, and personal burnout (Copenhagen Burnout Inventory – Kristensen, Borritz 2001) were used.

First, bivariate analyses using Pearson’s Chi-square test have been conducted in order to determine the influence of the predictors upon ITL. Subsequently, for each seniority group, a separate multiple logistic regression has been run to investigate the relationship

between the above-mentioned factors and ITL. Finally, the same association was tested by means of multiple logistic regression analyses in both the baseline and the follow-up assessments, while controlling for several factors, including seniority. All analyses were conducted using SPSS version 13.0.

### 3. Results

#### 3.1. Intent to leave according to seniority

Among the participating nurses in the UK, Italy, Germany, Finland, and in France, ITL was higher than 16%, while it appeared to be much lower in the other countries. It was as low as 9.2% in the Netherlands. In the total sample, nurses with 5–14 years of seniority revealed the highest percentage of frequent ITL (17.6%), followed by those who more recently entered the health care (16%). Nurses with 15–24 years of seniority had lower ITL (14.6 %) and those with 25 years or more the lowest (11.9%). In Finland, Germany, Norway, Slovakia and Poland nurses under five years of seniority most frequently declared ITL. In Italy nurses with 5–14 years of seniority showed most frequent ITL. In France, ITL increases regularly with seniority.

#### 3.2. Intent to leave according to quality of teamwork

For the total sample, it was found that low quality of teamwork increases ITL by a factor of five as compared to the nurses that gave high scores for teamwork quality (27.6% versus 4.7%,  $p < 0.001$ ). ITL was even increased by a factor of six or more for Belgium, Germany, Finland, Norway, and the Netherlands.

#### 3.3. Intent to leave according to burnout

Burnout appears to be strongly linked with ITL, with 26% of nurses with a high burnout score reporting a high ITL, as against 7.6% among those with low burnout. Burnout has a great influence, increasing ITL by a factor of four or more in Germany, France, Norway and Belgium, and by a factor of more than two in the other countries.

### **3.4. Risk factors for ITL by seniority groups in multivariate analysis**

Low quality of teamwork appears to be a major risk factor for ITL in each seniority group (see Tab. 1). The influence is highest for nurses in their mid-career phase (OR=4.60 for nurses with 5–14 years of seniority; OR=4.68 for nurses with 15–24 years of seniority). Bad interpersonal relationships become a significant risk factor for ITL after 15 years of seniority (OR=1.38), and among nurses with at least 25 years of seniority (OR=2.02).

A lack of possibilities for development is an important risk factor for each seniority group, except for the oldest one. Uncertainty regarding treatment appears not to contribute significantly, after controlling for the other risk factors. For each seniority group, nurses working part-time display a higher ITL as compared with nurses working full-time, except for nurses with at least 25 years of seniority. Also, as compared with registered nurses, specialized nurses have a higher ITL, and this discrepancy even increases after 15 years of seniority.

Male nurses in their mid-career have a slightly higher ITL as compared with the female ones. Age does not contribute significantly, after controlling for seniority group, except for nurses with 5–14 years of experience, where each supplementary year is associated with less ITL (OR=0.98). Nurses with a low seniority who live alone show more frequent ITL than nurses living with another adult. Nurses living with another adult and a child report less frequent ITL, and this outcome appears to be significant for the first two groups of seniority (OR=0.62 for nurses with less than 5- and OR=0.70 for nurses with 5–14 years of seniority).

Work-family conflict is significantly associated with ITL for nurses in their mid-career while a lack of satisfaction with pay plays a significant role, yet only in the beginning of the nurses' careers.

Within each seniority group, a medium score for burnout is already a significant risk factor for ITL, with odds ratios always abo-

ve 1.30. A high burnout prevalence appears to be the second major risk factor for ITL in each seniority group, and has the highest impact for nurses in the second part of their career (OR=2.18 for nurses with 15–24 years of seniority, and OR=3.03 for nurses with at least 25 years of experience). Psychological exhaustion appears to have a greater impact as compared with physical exhaustion. The latter is shown by the absence of a significant impact of musculoskeletal disorders (a slight exception being the group with 5–14 years of seniority), and by the demonstration of the importance of mental disorders.

### **3.5. The longitudinal part of the study**

Quality of teamwork appears to be the highest risk factor for ITL in both Q0 and Q12 assessments, with odds ratios above five (see Tab. 2). We observed an exposure-outcome gradient in both assessments implying that lower perceived teamwork quality goes together with a higher ITL.

Nurses working part-time show a higher ITL in both Q0 and Q12 data. Overwork appears to be a factor of importance in the Q0 only, yet its influence is rather small. Specialized nurses have a higher ITL compared with registered nurses in the Q0 assessment, though this influence is not shown in the follow-up measurement, even although the trend is similar. Male nurses have a higher ITL as compared with female ones, and this difference becomes even more apparent in the follow-up assessment. Age appears to play a significant role, even after adjusting for seniority. In the Q0, each supplementary year is associated with less ITL, but this is not the case in the Q12. In both assessments, nurses living with another adult and child have a lower ITL as compared with those living with only another adult. Living alone has proven to be a more significant factor in determining ITL in Q12 than in Q0, where we could only find a trend but no significant relationship.

Work conflicting family is associated with a higher ITL. A high burnout score is the second major risk factor for ITL in the baseline and follow up assessments, with odds

**Table 1.** Multivariate analysis of factors linked with intent to leave nursing among registered or specialized nurses with no management responsibilities in 9 European countries, according to seniority.

	< 5 years (Frequent IITL = 413/2854)			5–14 years (Frequent IITL = 1129/6785)			15–24 years (Frequent IITL = 703/5287)			> 24 years (Frequent IITL = 239/2206)		
	n	adj. OR	95% CI	n	adj. OR	95% CI	n	adj. OR	95% CI	n	adj. OR	95% CI
Score of quality of teamwork	1055	1		1984	1		1747	1		829	1	
High	991	2.24***	1.58 3.19	2240	2.16***	1.67 2.78	1734	1.66**	1.22 2.25	717	1.72*	1.05 2.83
Medium	808	4.41***	3.04 6.40	2561	4.60***	3.54 5.98	1806	4.68***	3.44 6.36	660	3.70***	2.24 6.11
Score of quality of interpersonal relationships	899	1		1725	1		1496	1		732	1	
Good	1066	0.96 NS	0.71 1.32	2270	0.76*	0.61 0.94	1840	1.03 NS	0.79 1.36	706	1.65*	1.04 2.61
Medium	889	0.97 NS	0.70 1.34	2790	1.00 NS	0.81 1.23	1951	1.38*	1.06 1.79	768	2.02**	1.29 3.16
Bad	1323	1		2235	1		1741	1		800	1	
Score of possibilities for development	816	1.05 NS	0.79 1.39	1875	1.10 NS	0.91 1.34	1569	1.05 NS	0.82 1.34	632	0.78 NS	0.52 1.18
Medium	715	1.40*	1.07 1.84	2675	1.40***	1.18 1.67	1977	1.50***	1.20 1.86	774	1.26 NS	0.89 1.78
Low	616	1		1574	1		1307	1		644	1	
Score of uncertainty regarding treatments	1032	1.00 NS	0.70 1.41	2397	0.88 NS	0.71 1.08	2064	0.81 NS	0.63 1.04	847	1.01 NS	0.66 1.56
Medium	1206	0.88 NS	0.63 1.25	2814	0.99 NS	0.81 1.21	1916	0.79 NS	0.61 1.01	715	1.26 NS	0.82 1.93
High	2294	1		4696	1		3303	1		1488	1	
Work week duration	560	1.71***	1.28 2.28	2089	1.27**	1.07 1.51	1984	1.73***	1.41 2.12	718	1.22 NS	0.87 1.73
<35 hours	1729	1		4678	1		3935	1		1649	1	
Overwork	1125	1.17 NS	0.93 1.48	2107	1.14 NS	0.98 1.32	1352	1.17 NS	0.96 1.41	557	0.99 NS	0.71 1.38
Yes	2854	0.98 NS	0.96 1.01	6785	0.98*	0.97 0.99	5287	0.99 NS	0.97 1.01	2206	0.96 NS	0.92 1.00
Age	2457	1		5787	1		4825	1		1960	1	
Female nurses	397	1.11 NS	0.81 1.53	998	1.33**	1.10 1.61	462	1.69***	1.28 2.24	246	0.92 NS	0.55 1.55
Male nurses	2490	1		5667	1		4232	1		1696	1	
Occupational level	364	1.14 NS	0.81 1.59	1118	1.28**	1.06 1.54	1055	1.55***	1.23 1.89	510	1.51*	1.06 2.14
Specialised nurses	1517	1		1763	1		615	1		641	1	
Personal situation	671	1.51**	1.17 1.96	843	0.97 NS	0.77 1.21	400	1.30 NS	0.90 1.87	253	0.96 NS	0.59 1.58
Alone	46	1.15 NS	0.48 2.74	281	0.72 NS	0.49 1.04	408	0.69 NS	0.46 1.03	157	0.57 NS	0.31 1.04
Alone with child	620	0.62**	0.44 0.87	3898	0.70***	0.59 0.83	3864	0.81 NS	0.62 1.07	1155	0.70 NS	0.49 1.00
With adult and child	795	1		1783	1		1746	1		779	1	
Score of work conflicting family	1034	1.08 NS	0.77 1.51	2366	1.10 NS	0.89 1.37	1764	1.18 NS	0.92 1.52	705	1.06 NS	0.69 1.60
Medium	1025	1.27 NS	0.90 1.79	2636	1.43***	1.16 1.77	1777	1.49**	1.17 1.90	722	1.30 NS	0.87 1.94
High	1201	1		2414	1		2025	1		923	1	
Score of satisfaction with pay	858	1.11 NS	0.84 1.48	1903	1.04 NS	0.86 1.25	1326	0.86 NS	0.68 1.09	526	0.91 NS	0.61 1.36
Medium	795	1.58***	1.20 2.08	2468	1.21*	1.02 1.44	1936	1.17 NS	0.94 1.45	757	0.95 NS	0.67 1.36
Low	995	1		2388	1		1967	1		856	1	
Burnout score (CBI)	981	1.43*	1.03 1.98	2208	1.30**	1.07 1.59	1685	1.36*	1.05 1.75	685	1.68*	1.06 2.65
Medium	878	1.98***	1.39 2.81	2189	1.95***	1.59 2.40	1635	2.18***	1.68 2.83	605	3.03***	1.90 4.83
High	2459	1		5505	1		4210	1		1745	1	
Mental disorders	313	1.47*	1.07 2.00	962	1.23*	1.02 1.48	787	1.48***	1.19 1.84	326	1.24 NS	0.86 1.79
Yes, own diagnosis	82	1.32 NS	0.76 2.32	318	1.77***	1.35 2.32	290	1.56**	1.13 2.16	135	1.67*	1.02 2.73
Yes, physician	1722	1		3476	1		2227	1		795	1	
Musculoskeletal disorders	615	1.04 NS	0.79 1.37	1676	1.00 NS	0.84 1.19	1362	0.94 NS	0.75 1.17	564	1.04 NS	0.70 1.54
Yes, own diagnosis	517	1.01 NS	0.75 1.36	1633	1.24**	1.05 1.47	1698	1.05 NS	0.85 1.29	847	0.89 NS	0.62 1.28
Yes, physicians												

\*p<.05 \*\*p<.001 \*\*\*p<.001 NS=non significant

ratios above two. Mental disorders remain more important over the duration of the study compared with musculoskeletal disorders in determining ITL.

#### **4. Discussion**

Quality of teamwork appears to be the major factor associated with ITL for each seniority group of nurses. Hostile relations within teams doubled the risk to leave prematurely for nurses who were at the end of their career, while low possibilities for development doubled the risk at the beginning of their career. The longitudinal part of our study demonstrates the impact of the risk factors and points out that the health care sector should be urged to work on improvements in order to 'turn the tide' and to prevent a further shortage in nursing staff.

Possibly nurses working part-time are already dissatisfied with their job or with their work-home balance, and thus are more prone to ITL compared with their full-time counterparts.

Male nurses and specialized nurses are significantly more recruited for marketing jobs within the pharmacy and medico-technical industry with less stressful conditions, yet, with less job security as well. On the contrary, this explains the relatively higher retention of (female) nurses with children, but only in case work is not conflicting excessively with family.

Contradictory to Fochsen et al. (2006), after controlling for teamwork and burnout, nurses with MSDs appeared not to have a much higher ITL. Probably, these nurses have difficulties to find other jobs outside health care (Estryn-Béhar et al. 2005) due to their limited employability (Van der Heijden 2005). Ergonomic interventions and team quality enhancement aimed at reducing physical workload are of major importance to keep the workforce healthy.

In the analysis by country, for France and slightly in the UK and Italy, we have

found that seniority is a risk factor for ITL, while age is negatively correlated with ITL, therefore distinguishing the two variables from one another. Indeed, nurses with 25 years of seniority may be only 45 years old. At this age, it is certainly possible to look for other job options if the environment associated with working with patients proves unsatisfying, and in case the nurse is not responsible for small children.

Our results confirm the core importance of teambuilding (Mc Hugh 1997; Leonard et al. 2004). Turnover may be prevented by means of a high quality collaboration and multidisciplinary teamwork (nurses, nursing aids, physicians, pharmacists), and by team training approaches and ward design which facilitates teamwork (Estryn-Béhar 1996, 1997a,b). Changes towards organizations where physicians and non-physician professionals collaborate in teams are now recommended (Rosenstein 2002; Curtis et al. 2006).

Work-family conflicts and being a male nurse increases ITL in the mid-career (see also Jansen et al. 2006). In health care, many work situations require long working hours, frequent overtime work, understaffing implying high extensive demand and frequent change of shifts with short notice. This may result in work-family conflicts (WFC) with mid-aged nurses predominantly looking for another work situation allowing a better work-family balance. On the contrary, with low or medium WFC, female nurses, and nurses not living alone have less intent to leave in order to protect their work-family balance. Again, good teamwork and interpersonal relationships facilitate fitting the different team members' needs.

#### **5. Limitations of our study and recommendations for future research**

As we have used self-reports' measures, for both the predictor variables and the dependent variable, i.e. intent to leave, a common-method bias may exist (Doty, Glick 1998).

**Table 2.** Multivariate analysis of factors linked with intent to leave nursing among registered or specialized nurses with no management responsibilities in 10 European countries – longitudinal study.

	Baseline assessment (Q0)				twelve month follow up assessment (Q12)			
	N	adj. OR	P	95% CI	N	adj. OR	P	95% CI
Score of quality of teamwork	High	5218	1		3811	1		
	Medium	8224	2.39 ***	2.03 2.82	5257	2.13 ***		1.73 2.62
	Low	6087	6.32 ***	5.36 7.46	3939	5.04 ***		4.08 6.23
Score of possibilities for development	High	6498	1		4239	1		
	Medium	5602	1.07 NS	0.94 1.20	3956	1.07 NS		0.90 1.26
	Low	7429	1.48 ***	1.33 1.64	4812	1.52 ***		1.30 1.78
Work week duration	35 hours +	13551	1		9233	1		
	<35 hours	5978	1.28 ***	1.16 1.43	3774	1.29 ***		1.12 1.49
Overwork	No or not specified	13764	1		10021	1		
	Overwork	5765	1.14 **	1.04 1.25	2986	0.97 NS		0.85 1.11
Age	(continuous)	19 529	0.97 ***	0.96 0.98	13 007	0.99 NS		0.98 1.00
Gender	Female	17249	1		11697	1		
	Male	2280	1.47 ***	1.29 1.67	1310	1.73 ***		1.46 2.05
Occupational level	Registered nurses	15916	1		11543	1		
	Specialized nurses	3613	1.45 ***	1.30 1.63	1464	1.16 NS		0.97 1.39
Seniority	< 5 years	2881	1		1574	1		
	6 - 14 years	7513	1.26 **	1.09 1.46	4744	1.07 NS		0.87 1.31
	15 - 24 years	6308	1.24 *	1.02 1.51	4595	1.04 NS		0.81 1.34
Personal situation	> 24 years	2827	1.16 NS	0.88 1.53	2094	0.92 NS		0.65 1.29
	With adult	5084	1		3375	1		
	Alone	2325	1.13 NS	0.99 1.30	1407	1.30 **		1.08 1.56
Score of work conflicting family	Alone with child	1074	0.71 **	0.57 0.87	759	0.81 NS		0.63 1.04
	With adult and child	11046	0.75 ***	0.67 0.83	7466	0.76 ***		0.66 0.87
	Low	5910	1		4813	1		
Burnout	Medium	6586	1.12 NS	0.99 1.28	3786	1.18 *		1.01 1.38
	High	7033	1.44 ***	1.27 1.63	4408	1.69 ***		1.46 1.96
	Low	6940	1		4249	1		
Mental disorders	Medium	6361	1.43 ***	1.25 1.62	4628	1.34 ***		1.13 1.60
	High	6228	2.19 ***	1.92 2.50	4130	2.30 ***		1.93 2.76
	No	15818	1		10402	1		
Musculoskeletal. disorders	Yes, own diagnosis	2747	1.35 ***	1.21 1.52	2015	1.33 ***		1.15 1.52
	Yes, physician diagnosis	964	1.68 ***	1.43 1.99	590	1.50 ***		1.21 1.87
	No	9185	1		6299	1		
Yes, own diagnosis	Yes, own diagnosis	4806	0.99 NS	0.88 1.10	3131	1.04 NS		0.90 1.19
	Yes, physicians diagnosis	5538	1.19 ***	1.07 1.33	3577	1.11 NS		0.96 1.27

Due to missing values for several variables taken into account, the total numbers included in the multivariate analysis are different from the total sample.

Method bias is a problem as it is one of the main sources of measurement error. Also in our approach, common method variance (i.e., variance that is attributable to the measurement method rather than to the constructs the measures represent) is a potential problem that needs further attention. Moreover, future research is needed wherein micro- and meso-level models, taking into account individual, job-related, and organizational characteristics ought to be integrated with the so-called broader micro-sociological models describing labour market circumstances and opportunities (Van der Heijden 2005). In situations wherein

one is suffering from inadequate teamwork and burnout, in case of a lack of suitable jobs, i.e. disadvantageous labour market circumstances, one's employability is something to be even more concerned about.

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