Nurses' Work-Related Fatigue and Related Factors

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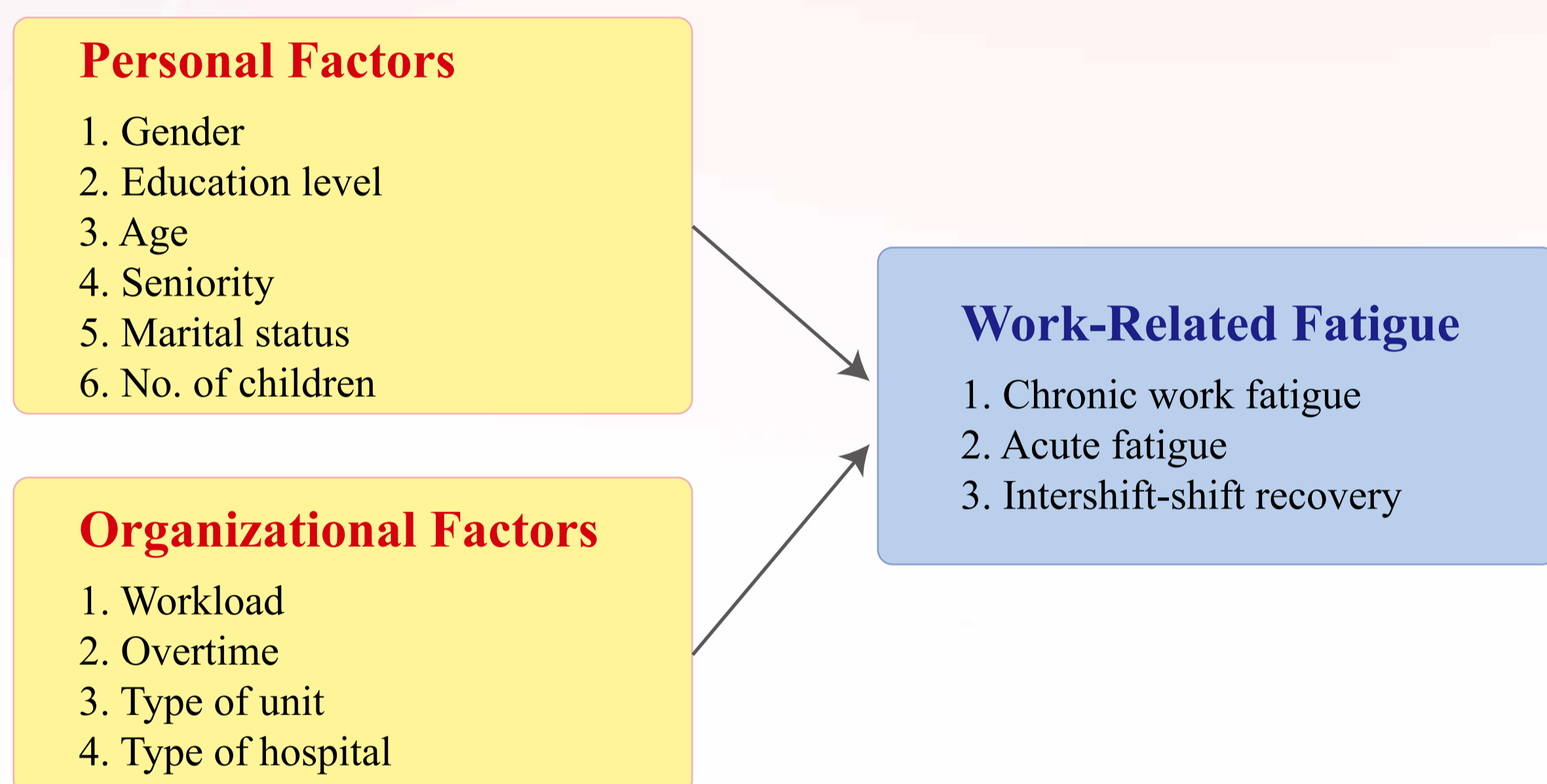
Background

Nurses play multiple roles as caregivers, service providers, educators and more. They face a variety of emergency situations in which they must make immediate decisions. They work a shift pattern. All of these factors cause an accumulation of fatigue. Work-related fatigue is likely to cause adverse consequences, such as an increased incidence of adverse events or absenteeism. Work-related fatigue is also one of the main reasons for the departure of nursing staff.

In Taiwan, 30-70% of new nursing staff members leave their jobs because of work fatigue. This issue has created a precarious situation for nursing manpower. The general shortage of staff results in an increased workload for the remaining nurses and leads to the further deterioration of work fatigue and the departure of even more nurses, thus forming a vicious circle.

Purpose

This study investigates the degree of fatigue and the factors influencing the work-related fatigue of nursing staff.

Framework

Personal Factors
1. Gender
2. Education level
3. Age
4. Seniority
5. Marital status
6. No. of children

Organizational Factors
1. Workload
2. Overtime
3. Type of unit
4. Type of hospital

Work-Related Fatigue
1. Chronic work fatigue
2. Acute fatigue
3. Intershift-shift recovery

Method

Design: This study is designed for cross-sectional correlation research.

Sample and Locations: Participants were recruited from September 1 to September 30, 2015, from a medical center and a regional hospital in southern Taiwan. All the participants had worked full-time for more than a year in the direct care of patients in the adult surgical and medical wards as well as in the intensive care unit. A total of 276 nurses participated in the study; see Table 1 for demographic information.

Instruments: The tool consists of three parts. 1. Demographic information, such as age, gender, level of education level, etc. 2. Workload, measured by the National Aeronautics and Space Administration-Task Load Index (NASA-TLX) (Hart & Staveland, 1988). The index contains 6 subscales: mental demand, physical demand, temporal demand, performance, effort, and frustration. 3. Work-related fatigue, measured by the Occupational Fatigue Exhaustion / Recovery Scale (OFER) developed by Winwood (2006), including acute / end-of-work fatigue, chronic work fatigue, and intershift-shift fatigue recovery.

Ethics:

The institutional review board at the Chi-Mei Hospital approved this study. The purpose of the research and the methods were fully explained to the participants, and they were informed that they were free to decide whether to join the study or to exit it.

The questionnaire content was sealed and anonymous. The participants filled out the questionnaire and then sealed it in an envelope provided by the researcher. After finishing the questionnaire, each participant received a 50-yuan merchandise card as a small gift.

To improve the efficiency of the questionnaire and to ensure the quality of the responses, the participants were requested to fill out the questionnaire in an environment without interruptions. The researchers provided contact information for consultation.

Result

The results show the work-related fatigue of nursing staff. The workload level was very high, and the acute fatigue score was 60.6 points, with acute fatigue as the main type of work-related fatigue.

Among the influencing factors, the significant predictors of chronic fatigue are overtime, work setbacks, acute fatigue, and work fatigue recovery, as shown in table 2. Significant predictors of acute fatigue are overtime, physical workload, work setbacks, and work fatigue recovery, as shown in table 3. Significant predictors of intershift-shift fatigue recovery are age, physical workload, and work setbacks, as shown in table 4.

Table 1. Personal factors

Variables	Mean±SD	Number	(%)	Variables	Mean±SD	Number	(%)
Sex				**Number of children**			
Male		12	4.3	0		197	
Female		264	95.7	1		32	11.6
Age	30.4± 5.1			2		39	14.1
20-25		51	18.5	3		8	2.9
26-30		103	37.3	**Seniority**	7.8±5.3		
31-35		75	27.2	1-5		106	38.4
36-40		37	13.4	5-10		93	33.7
>40		10	3.6	10-15		48	17.4
Education				15-20		24	8.7
Senior vocational		1	4	>20		5	1.8
Five-year college		15	5.4	**Type of unit**			
Bachelor		254	92	Medical ward		65	
MS		6	2.2	Surgical ward		32	
Nursing level				Medical ICU		122	
N0		35	12.7	Surgical ICU		57	
N1		67	24.3	**Type of hospital**			
N2		75	27.2	Medical center		195	70.6
N3		63	22.8	Regional hospital		81	29.4
N4		36	13				
Marital status							
Single		184	66.7				
Married		91	33				
Divorced		1	0.4				

Table 2. Predictors of chronic fatigue

Variables	B	SE	β	t	p	R^2	AdjR^2	$R^2\triangle$
						.600	.580	.600
Age	-.185	.496	-.05	-.37	.033*			
Seniority	.162	.488	.04	.33	.709			
Overtime	2.978	1.314	.10	2.27	<.001***			
Mental demand	.990	.629	.09	1.57	.117			
Physical demand	.056	.778	.00	.07	.942			
Effort	-1.175	.768	-.08	-1.53	.127			
Frustration	1.924	.497	.19	3.87	<.001***			
Acute fatigue	.499	.060	.46	8.37	<.001***			
Intershift-shift recovery	-.243	.061	.09	1.57	<.001***			

Table 3. Predictors of acute fatigue

Variables	B	SE	β	t	p	R^2	AdjR^2	$R^2\triangle$
						.598	.578	.598
Age	.165	.456	.05	.36	.717			
Seniority	.144	.449	.04	.32	.749			
Overtime	1.620	1.216	.05	1.33	.184			
Mental demand	.299	.581	.03	.52	.607			
Physical demand	1.738	.708	.14	2.46	.015*			
Effort	1.166	.705	.08	1.65	.100			
Frustration	-.337	.470	-.04	-.72	.474			
Intershift-shift recovery	-.293	.055	.27	-5.30	<.001***			

Table 4. Predictors of intershift-shift recovery

Variables	B	SE	β	t	p	R^2	AdjR^2	$R^2\triangle$
						.444	.416	.444
Age	.674	.483	.21	1.40	.164			
Seniority	-.906	.474	-.29	-1.91	-1.838			
Overtime	1.068	1.295	.04	.83	-1.481			
Mental demand	.685	.616	.071	1.11	-.528			
Physical demand	-1.333	.756	-.12	-1.76	.079			
Effort	.584	.752	.05	.78	-.898			
Frustration	-.596	.498	-.071	-1.20	.233			

Conclusion

The results of this study show that nurses experienced a high degree of work-related fatigue based on the workload level. Nurses' work-related fatigue is based primarily on acute fatigue. On behalf of nurses, fatigue is very high.

The results show that the main factors that affect the fatigue of nursing staff are organizational, especially the type of unit. Work-related fatigue is higher in a general ward than in the intensive care unit. It is therefore advisable for executives to intervene in the amount of work required for various types of tasks and to allocate the work in a timely manner. Nurses should be regularly screened to detect fatigue. Hospital managers can also increase the proportion of nurses to patients.