

WORK ABILITY AND PSYCHOLOGICAL WELL-BEING IN HOSPITAL STAFF

Gergana Sandeva¹, Krasimira Koleva²

Abstract

Healthcare is an economic sector characterized by unfavorable working conditions, such as psychosocial stress, shift work, and manual handling of loads. It is important to opportunely assess the work ability and psychological well-being of hospital staff to evaluate workers' functional capacity and plan appropriate preventive measures.

Objectives: To assess the work ability and psychological well-being in hospital staff and to determine factors that might influence them.

Methods: Work Ability Index Questionnaire, Psychological Well-being Questionnaire, and statistical analyses.

Results: The mean Work Ability Index (WAI) score was 40.8 ± 4.8 , which corresponded to suitable work ability. The lowest mean WAI score was registered for the physical therapists (38 ± 3.8), and was significantly lower than the WAI score for nurses (41.6 ± 4.8). The mean Psychological Well-being score for all subjects was 187.6 ± 18.4 . The youngest workers (200.8 ± 14.7), and those with shortest length of service (196.7 ± 18.4) had significantly higher mean Psychological Well-being scores than older (180.8 ± 19.9) and more experienced workers (180.3 ± 18.3). A positive correlation was found between WAI and Psychological Well-being scores ($r = 0.37$, $p = 0.003$).

Conclusion: Hospital managers should consider implementing strategies focused on the work ability of hospital staff, as well as on their psychological well-being, to keep workers fit and healthy for longer.

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Introduction

Work ability is a term describing a worker's ability to perform specific work for a period of time while maintaining optimal capacity and quality without showing signs of fatigue or exhaustion. The main determinants of work ability are physical and mental health, motivation, adaptation to the psychosocial environment, adaptation to the workload and work environment, and professional competence (Mincheva & Vangelova, 2008). Therefore, satisfactory work ability is sustained and promoted by strong physical and mental health, as well as by favorable work conditions (Camerino et al., 2008).

Comprehensive evaluation of work ability is often considered difficult to perform as it involves the services of various medical specialists and the use of significant resources. Work ability assessment is a complex undertaking involving the measuring of cardiovascular, musculoskeletal, cognitive and sensory functions (vision and hearing), and mental resources. These limitations have incited occupational specialists to develop easier, but still accurate evaluation methods (Ilmarinen, 2007).

Healthcare is an economic sector, characterized by unfavorable work conditions, such as psychosocial stress, shift work, long working hours (often 12-hour shifts), manual handling of loads, ergonomic risk factors, and biological agents (Escriba-Aguir & Tenias-Burillo, 2004; Pisanti, van der Doef, Maes, Lazzari, & Bertini, 2011; Fisher & Martinez, 2013). Nurses, orderlies, and physical therapists are almost always in the front line, directly responsible for patients' comfort and well-being. The physically strenuous work and emotionally draining contact with patients can lead to decreased work ability and health status, mostly in the form of mental, neurological, and musculoskeletal disorders (Galatsch, Li, Derycke, Müller, & Hasselhorn, 2013). Furthermore, nursing staff with a low work ability is more likely to either change employer or leave the profession altogether (Derycke, Clays, Vlerick, D'Hoore, Hasselhorn, & Braeckman, 2012; Rongen et al., 2014), and these outcomes can cause a significant strain on the healthcare system.

Due to work ability's complex nature, many workplace factors, as well as the worker's own physical and psychological resources, can influence one's work ability. It is therefore important to opportunely

¹ Gergana Sandeva, Medical Faculty, Trakia University, Stara Zagora, Bulgaria, geri_sandeva@yahoo.com

² Krasimira Koleva, Occupational Health Service "Energoremont-Galabovo", Bulgaria, pate65@abv.bg

assess the work ability and psychological well-being of hospital staff in order to evaluate workers' functional capacity and plan appropriate preventive measures.

The aim of this study is to assess the work ability and psychological well-being of hospital nurses, physical therapists, and orderlies, and determine factors that might influence them.

Materials and Methods

Subjects

Questionnaires were distributed among nurses, orderlies, and physical therapists working at a privately owned hospital in Stara Zagora, Bulgaria. A total of 63 workers from six hospital departments (Neurology, Cardiology, Orthopedics, Physical Therapy, and General and Vascular Surgery) agreed to participate: 35 nurses (55.6%), 9 physical therapists (14.3%), and 19 orderlies (30.1%). All surveyed subjects were female. The age of the participants varied between 25 and 59 years (mean age 44.3 years). Forty women worked day and night shifts (21 nurses and all orderlies), while 23 only worked day shifts (14 nurses and the physical therapists). The surveyed hospital workers also completed a short personal questionnaire concerning work-related musculoskeletal disorders (MSDs).

Work Ability

For evaluating the medical professionals' work ability, we used the Work Ability Index (WAI) Questionnaire (Tuomi et al., 1998), adapted for Bulgaria by Mincheva & Vangelova (2008). The WAI is based on a series of questions that consider the demands of work and worker's health status and resources. Depending on the results, four levels of work ability are possible: excellent (44–49 points), good (37–43 points), moderate (28–36 points), and poor (7–27 points). The main items comprising the questionnaire are presented in Table 1.

Item	Questions	Range
1. Current work ability compared with the lifetime best	1	0 - 10
2. Work ability in relation to the demands of the job	2	2 - 10
3. Number of current diseases diagnosed by a physician	1	1 - 7
4. Estimated work impairment due to diseases	1	1 - 6
5. Sick leave during the past 12 months	1	1 - 5
6. Own prognosis of work ability 2 years from now	1	1 - 7
7. Mental resources (for life in general)	3	1 - 4

Source: Tuomi, Ilmarinen, Jahkola, Katajarinne, and Tulkki (1998)

Psychological Well-being

Psychological well-being was assessed with the 42-item Psychological Well-being Questionnaire (Ryff & Keyes, 1995), translated and adapted for Bulgarians by the study's authors. The questionnaire encompassed six psychological spheres: autonomy, environmental mastery, personal growth, positive relations, self-acceptance, and purpose in life (Table 2). Achieving a score above 28 on a single item indicated a sound capacity, and a score below 15, an unsatisfactory result.

Data Analysis

The Work Ability Index and Psychological Well-being scores were calculated for all studied subjects and the results analyzed using StatSoft Statistica v.8 software package. The participants were divided into groups, based on occupation, hospital department, age, length of service, shift work, and presence of musculoskeletal symptoms. The Student's t-test, and descriptive and correlation analyses were performed.

Results

The mean WAI score for all participants was 40.8 ± 4.8 , which corresponded to "good" work ability. Overall, 23 (36.5%) workers had "excellent" work ability, 24 (38.1%) had "good" work ability, 15

(23.8%) had “moderate”, and only one subject, a nurse, had “poor” work ability. The lowest mean WAI score was registered for the physical therapists (38 ± 3.8), and was significantly lower than the WAI score of the nurses ($p = 0.0439$; Table 3). Comparing the mean WAI score among different hospital departments showed a significant difference between the highest mean score (from the Cardiology Department) and the lowest observed in the Orthopedics Department, $p = 0.018$. When divided by age, the group aged 30–39 years had the highest mean WAI score, which was significantly higher than the mean WAI score for the group aged 50–59 years ($p = 0.019$). No differences in WAI scores were found between the shift and non-shift workers. There was a difference in the mean WAI scores between workers without or with mild musculoskeletal symptoms and those with moderate or severe symptoms. The most reported MSDs were disorders of the upper and lower extremities and lower back pain.

Table 2: The 42-item Psychological Well-being Questionnaire

Item	Description	Questions
Autonomy	The extent to which the subjects view themselves as independent and able to resist social pressures.	1, 7, 13, 19, 25, 31, 37
Environmental mastery	The extent to which the subjects feel in control of the surrounding environment.	2, 8, 14, 19, 26, 32, 38
Personal growth	The extent to which the subjects have a sense of continued development and self-improvement.	3, 9, 15, 21, 27, 33, 39
Positive relations	The extent to which the subjects have satisfying relations to other people.	4, 10, 16, 22, 28, 34, 40
Purpose in life	The extent to which the subjects hold beliefs that give life meaning.	5, 11, 17, 23, 29, 35, 41
Self-acceptance	The extent to which the subjects have a positive attitude about themselves.	6, 12, 18, 24, 30, 36, 42

Source: Ryff & Keyes (1995)

The mean Psychological Well-being score for all subjects was 187.6 ± 18.4 , meaning an overall high score and strong psychological resources. When comparing mean Psychological Well-being scores, no differences were found in respect to occupation, shift work, or MSD symptoms (Table 3). The highest mean score was registered for the Neurology Department and this was significantly higher than the mean scores for the Orthopedics Department ($p = 0.046$) and the Physical Therapy Department ($p = 0.008$). Furthermore, the youngest workers and those with the shortest length of service had significantly higher mean Psychological Well-being score than the older ($p = 0.038$) and the more experienced workers ($p = 0.045$).

Correlation analyses found a positive correlation between WAI scores and Psychological Well-being scores of all participants ($r = 0.37$, $p = 0.003$).

Discussion

The mean WAI score for all surveyed subjects was similar to the mean score of health professionals reported by other authors from different continents (Fisher & Martinez, 2013; Knezevic et al., 2011; Monteiro, De Santana Pi Chillida, & Moreno, 2012). The distribution of work ability levels (excellent, good, moderate, and poor) among the surveyed staff was also close to previous reports (Costa et al., 2005); thus indicating an overall satisfactory result. Costa et al. (2005) also observed that skin and neuropsychic disorders lowered WAI scores to a greater extent than other illnesses; a finding concurring with our study, since only one subject had a poor WAI score, a nurse suffering from severe depression.

Work ability typically decreases with age (Tuomi, Huhtanen, Nykyri, & Ilmarinen, 2001; Monteiro et al., 2012), and this was also proven in this study, although not within the usual distribution. The highest mean WAI score was calculated for the group aged 30–39 years. This result could be

explained by the combination of relatively young ages, “good” health status, and sufficient professional experience that are typical for the 30–39 age group, and all of which have a positive effect on work ability. In comparison, workers of the youngest age group have less experience and somewhat lower work ethics, resulting in a relatively lower WAI score. A more interesting observation was that psychological well-being also decreased with age, suggesting a link between work ability and existing psychological resources.

Table 3: Mean Work Ability Index and Psychological Well-being scores

	N	Work Ability Index Score		Psychological Well-being Score	
		Mean	SD	Mean	SD
Occupation					
Nurse	35	41.57*	4.8	187.74	16.3
Physical Therapist	9	38.00*	3.8	185.89	17.6
Orderly	19	40.74	5.1	187.84	22.7
Department					
General Surgery	9	40.33	7.5	191.56	14.5
Cardiology	12	42.95*	3.1	186.33	12.6
Neurology	11	41.63	4.3	199.91*	21.9
Orthopedics	8	38.10*	5.3	179.50*	18.3
Physical Therapy	17	40.70	4.2	179.60*	15.5
Vascular Surgery	6	39.58	4.3	193.50	22.7
Age (years)					
25-29	6	40.33	8.1	200.83*	14.7
30-39	14	42.86*	2.9	187.79	18.0
40-49	27	40.90	4.5	188.26	17.0
50-59	16	39.03*	5.1	180.81*	19.9
Length of Service (years)					
<10	10	40.30	6.6	196.70*	18.4
10-19	22	42.32	3.9	188.31	19.5
20-29	19	39.79	4.5	186.21	15.9
30-39	12	40.08	5.1	180.33*	18.3
Shift Work					
Yes	40	40.95	5.1	187.03	15.9
No	23	40.57	4.4	188.22	22.1
MSD Symptoms					
None	22	42.63*	5.3	190.23	18.3
Mild	23	41.28*	3.2	188.74	17.4
Moderate	16	38.53*	4.8	184.31	19.5
Severe	2	33.50*	3.5	167.5	4.9

*p < 0.05

Source: Authors

Differences in mean WAI scores between different hospital departments may be linked to work organization (Golubic, Milosevic, Knezevic, & Mustajbegovic, 2009), poor interpersonal relationships (Knezevic et al., 2011), or work load (Rotenberg et al., 2008). Considerable workloads including manual handling of loads by female staff are still very common in Bulgarian hospitals, especially in orthopedic departments. More pronounced manual handling of loads may also explain the significantly lower mean WAI score of physical therapists compared with nurses. Furthermore, problems in work organization and workload might be reasons for the lower Psychological Well-being scores in the Orthopedics and Physical Therapy departments.

Working night shifts is a common feature of hospital work, with 12-hour shifts still widespread due to convenience (Estryn-Behar & Van der Heijden, 2012). This convenience is not without a cost, however. As Costa et al. (2005) observed, both men and women shift workers show a more pronounced decrease of WAI over the years compared to their colleagues who are day workers. Current Bulgarian regulations prohibit 12-hour shifts for hospital staff, and our study determined that this in effect had a positive impact on both work ability and psychological well-being, as mean scores of shift and non-shift workers were almost identical.

The number of reported illnesses is usually a suitable predictor of work ability (Costa et al., 2005). In our opinion, a special focus should be given to existing musculoskeletal disorders in hospital staff. Our results showed significant decrease in mean WAI scores with increasing severity of musculoskeletal symptoms.

As mentioned above, low work ability of hospital staff may be cause for staff deciding to leaving the employer or nursing profession, outcomes that are increasing significantly when combined with unfavorable work-related characteristics (Rongen et al., 2014). Unfortunately, the demanding working conditions in hospitals and medical practices are not the only major causes of concern related to low work ability. Nurses and other hospital staff often lack successful coping strategies and other organizational and psychosocial mechanisms needed for preventing stress at work and promoting a positive work environment. In our opinion, preventive strategies should be taught and implemented not only at work, but as early as medical school.

The promotion of work ability encompasses measures aimed at work demands and the work environment, work organization and community, employees' health, functional capacity, and professional competence (Tuomi et al., 2001). These should be extended to include measures to increase the psychological well-being of hospital staff, since a positive view on life is a factor in achieving better work ability and overall happiness.

Conclusion

Work ability in hospital staff is a complex personal quality, closely linked, not only to work-related characteristics such as workload and shift work, but also to an individual's psychological well-being. Therefore, hospital managers should consider implementing strategies that focus on the work ability of hospital staff in combination with improving work-related factors to achieve maximum effect. Measures should especially be undertaken for older workers, who show declining levels of work ability as well as lower levels of psychological well-being. Caring for older workers is particularly paramount in view of the current aging population in Europe.

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