

# ASSESSMENT OF QUALITY OF LIFE, JOB INSECURITY AND WORK ABILITY AMONG NURSES, WORKING EITHER UNDER TEMPORARY OR PERMANENT TERMS

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## Abstract

**Objectives:** Aim of this study was to assess and compare health, quality of life, well-being, job satisfaction and job insecurity between nurses, in a tertiary hospital in Greece, working either under permanent or temporary contract. **Material and Methods:** In this cross-sectional study, consecutively recruited nurses answered a structured questionnaire, the *WHO-5 Well-being Index* (WHO-5), the *Job Insecurity Index* (JII), the *Work Ability Index* (WAI), and the *Well-Being at Work Scale* (WBWS). **Results:** Included were 323 nurses (87.6% women, age  $M \pm SD$  43.68  $\pm$  8.10 years). Temporary contract employees had worse quality of life ( $p = 0.009$ ) and higher job insecurity: both in cognitive dimension ( $p = 0.013$ ) and emotional dimension ( $p < 0.001$ ). They also scored worse in the positive affect ( $p < 0.001$ ), negative affect ( $p = 0.002$ ) and fulfillment of expectations in work environment ( $p < 0.001$ ) domains of the WBWS. Additionally, they reported less frequently occupational accidents and injuries ( $p = 0.001$ ), musculoskeletal disorders of the spine or neck ( $p = 0.007$ ), cardiovascular ( $p = 0.017$ ), and gastrointestinal ( $p = 0.010$ ) disorders, while they reported more frequently mental disorders ( $p < 0.001$ ). Multivariate linear regression analysis showed that temporary work predicted high cognitive ( $p = 0.010$ )

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and emotional ( $p < 0.001$ ) insecurity, low positive emotions and mood index ( $p = 0.007$ ), low achievement-fulfillment index ( $p = 0.047$ ) and high index of negative emotions ( $p = 0.006$ ), regardless of gender and age. **Conclusions:** Temporary employment among nurses is associated with a lower sense of job security and well-being, and a higher prevalence of mental disorders, independently of age or gender without a significantly negative effect on their ability to work. Managers, as well as occupational physicians, should recognize the extent of nurses' job insecurity and assess their ability to work, to provide them with the necessary support and to stimulate the sense of occupational security and work capacity, so that they can thrive in their workplace and therefore be more productive and provide high quality healthcare. *Int J Occup Med Environ Health.* 2024;37(1)

**Key words:**

**quality of life, nurses, health personnel, work satisfaction, work performance, hospital personnel**

## INTRODUCTION

The rise in temporary employment dates back in 1980s and is considered a major milestone in Europe's labor market [1]. Since then, the number of temporary workers is constantly increasing [2,3] and has become a topic of significant research interest focusing on employee's health, quality of life (QoL), well-being, job satisfaction, and feeling of job security [4].

There is a general sense that permanent work has more advantages compared to temporary, despite the fact that the latter is characterized by variability and cannot definitely be treated as a homogeneous condition [5,6]. Numerous studies attempted to give insight into the adverse health effects of temporary employment, in which employees under temporary terms reported higher levels of insecurity, psychosomatic complaints and a significantly impaired feeling of well-being [7–9].

The healthcare sector comprises complex organizations (e.g., hospitals) with multivariate work arrangements, designed to provide services 7 days/week, 24 h/day. In general, healthcare employees are the main human resources, having usually to work in shifts and/or under significantly stressful circumstances. Despite this demanding context, there has been in recent years an almost exclusive shift to temporary forms of employment, especially in countries facing financial difficulties.

The aim of the present study was to assess the reported quality of life, sense of job insecurity and work ability and to compare those between 2 groups of nurses: 1 comprising permanent employees and 1 with temporary employees, working in a large tertiary hospital.

## MATERIAL AND METHODS

### Study design

This is a questionnaire-based cross-sectional, descriptive comparative study, involving nurses under temporary contracts, using permanent workers as controls.

### Ethical considerations and approval

The study protocol was approved by the Ethics Committee of the Democritus University of Thrace, Greece (protocol No. 4/24/15.06.2018). The distributed questionnaires were accompanied by an introductory text informing participants about the purpose and the procedure of the study. Participation was anonymous and voluntary. Informed consent was obtained from all participants. No funding was provided by a public or private body and there was no source of bias or conflict of interest in the extraction of the results.

### Sample of the study

Convenience sampling was applied. All participants were nurses employed at a University tertiary hospital, located in the city of Alexandroupolis in Northeastern Greece. The sample was recruited consecutively during their yearly visit at the occupational medicine (OM) department of the hospital, August 1–December 15, 2020. Participants were informed about the aim of the study and agreed to complete the study questionnaires. Researchers were present all the time to facilitate the procedure and to answer participants' questions. Considering the sensitive nature of the research data, the presence of the researchers during the completion of

the questionnaires was discreet and supportive, only in terms of providing any clarifications regarding the questions. The questionnaires were given with the consent of the respondents and at each stage of the process it was emphasized that their completion is voluntary. Response rate was very high, as 323 of the 338 nurses, who visited the OM department during the study period, agreed to participate (95.6%).

In the time period covered by the survey, out of the 323 nurses, 70 nurses were under contract who served in the hospital and those made up the total (100%) of auxiliary nurses. For the permanent nurses, participation rate was 57%, (i.e., 253 out of 441 employees). No inclusion and exclusion criteria were applied, as participants are screened annually.

### Questionnaires

The aim of this study was to explore whether job insecurity, ability to work, well-being in the workplace and quality of life of nurses are affected by the type of employment contract. For this reason, reliable measurement tools were considered, and the following questionnaires were selected.

- A structured questionnaire including questions about the following employees' anthropometric and demographic characteristics was distributed: gender, age, BMI, marital status, the presence of children under supervision, the number of children, education level and tenure. Regarding education level subjects were categorized as: technical school degree, technology institution and university degree. According to the International Standard Classification of Education (ISCED), technical school degree is the last stage of formal education in Greece, for students usually aged 16–18 years, preparing for higher education/training adults or provide employment-related skills, usually with an increased range of subject choices and streams (ISCED-3). Institute of technology and

university degrees are programs designed to provide intermediate academic or professional knowledge, skills and abilities leading to a first higher education degree or equivalent qualification (ISCED-6).

- *WHO-5 Well-Being Index* (WHO-5): This 5-item questionnaire investigates employees' positive mood, vitality and general interests. Answers are given on a 6-point Likert-type scale, ranging 0–5. Initially, total scores range between 0–25, but they are converted to a scale of 0–100 by multiplying by 4, with higher scores indicating greater well-being. Research results have shown that a score <50 indicates low mood, but not necessarily depression. A score of 28 and below indicates possible depression and requires further evaluation (diagnostic interview). In order to calculate possible changes in wellness, a 10% difference can be considered as an indication of significant change [10]. The questionnaire has been weighted and has been used in Greek working population [11,12].
- *Job Insecurity Index* (JII): With this tool, employees express their views on the degree of their job insecurity. It comprises 11 questions, of which the first 4 address the cognitive dimension of job insecurity, while the next 7 address the emotional dimension. The rating is obtained through a 5-point Likert-type scale. It was developed in Dutch language and has been used in working populations [13].
- *Work Ability Index* (WAI): It is a validated instrument, developed by the Finnish Institute of Occupational Health [14]. It assesses the individual work ability of an employee. It comprises 7 items, with each having a different score. Minimum possible score is 7, while maximum is 49. Scores are categorized as follows:
  - 7–27 pts (bad) – restoring work ability is suggested.
  - 28–36 pts (moderate) – improving work ability is suggested.
  - 37–43 pts (good) – supporting work ability is suggested.

- 44–49 pts (very good) – maintaining work ability is suggested.

This questionnaire has been also weighted for the Greek population [15].

- *Well-Being at Work Scale (WBWS)*: This instrument has been validated in Brazil and USA, to assess the perception of well-being at work. It consists of 29 questions covering various areas of well-being at work, including job demands, job satisfaction, work-life balance, etc. More specifically, there are 9 items describing positive feelings and moods, 13 items on negative emotions and moods and 9 items on fulfillment/achievement. A 3-point Likert-type scale is used for every question. For the total score, the score of each subscale is summed; reverse scoring is applied in some questions [16].

### Statistical analysis

Statistical analysis of the data was performed using IBM Statistical Package for Social Sciences (SPSS), v. 19.0 (IBM Corp., Armonk, NY, USA). The normality of quantitative variables was tested with the Kolmogorov-Smirnov test. Normally distributed quantitative variables (such as age and BMI) were expressed as the mean ( $M$ )  $\pm$  standard deviation (SD), while not normally distributed quantitative variables (such as the number of children and tenure) were expressed as the median value and range. Qualitative variables (such as gender, marital status, the presence of children under supervision and education level) were expressed as absolute and relative frequencies. All studied questionnaires were expressed as the  $M \pm SD$ . Differences between permanent and temporary employees were assessed by Student's t-test,  $\chi^2$  test and Mann-Whitney U test. Multivariate stepwise linear regression analysis was used to determine the independent effect of the type of employment on the studied questionnaires, adjusted for gender, age, BMI, marital status, the presence of children under supervision, the number of children,

education level and tenure. All tests were 2-tailed and statistical significance was considered for  $p$  values  $< 0.05$ .

### RESULTS

A total of 323 nurses, 283 females (87.6%) and 40 males (12.4%), with a mean age of  $43.68 \pm 8.10$  years (range 24–60 years) were included in the study. Participants' characteristics are summarized in Table 1. The mean BMI was  $25.74 \pm 4.19$  kg/m<sup>2</sup>, while 16.7% of the participants were obese (BMI  $\geq 30$  kg/m<sup>2</sup>). Most of the participants (78.3%, i.e., 253 nurses) were under permanent employment. Among temporary workers, female gender ( $p = 0.006$ ), single or divorced marital status ( $p < 0.001$ ) and, marginally, the possession of a university degree ( $p = 0.060$ ) were more frequent. On the other hand, parenthood ( $p < 0.001$ ) older age ( $p < 0.001$ ), more years in the present position ( $p < 0.001$ ), and a tendency towards higher BMI ( $p = 0.099$ ) were observed in permanent workers (Table 1).

The Greek versions of the following questionnaires: JII, WHO-5, WAI and WBWS were used to assess employees' job insecurity, quality of life, work ability and their perception of well-being at work, respectively. The internal consistency of all questionnaires was very high (Cronbach  $\alpha$  coefficient ranged 0.81–0.94). The comparison between the 2 groups, regarding scores of these questionnaires is shown in Table 2.

Regarding job insecurity, both cognitive ( $p = 0.013$ ) and emotional ( $p < 0.001$ ) dimensions of the JII questionnaire indicated statistically higher job insecurity among temporary employees. When each item of the JII questionnaire was compared between permanent and temporary employees, it was found that permanent employees believed at a higher rate that they will continue to work on this job ( $p = 0.001$ ) and that there is a small chance of being unemployed ( $p < 0.001$ ) (Table 3). Also, they were more confident of their work environment ( $p = 0.002$ ) and their capability to stay employed ( $p < 0.001$ ). In addi-

**Table 1.** Characteristics of the participating nurses employed at a university tertiary hospital, in Alexandroupolis, Greece, August 1–December 15, 2020

Variable	Participants (N = 323)			p
	total	permanent workers (N = 253)	temporary workers (N = 70)	
Female gender [n (%)]	283 (87.6)	215 (85.0)	68 (97.1)	0.006
Age [years] (M±SD)	43.68±8.10	45.69±7.13	36.44±7.22	<0.001
BMI [kg/m <sup>2</sup> ] (M±SD)	25.74±4.19	25.94±4.09	25.01±4.47	0.099
Marital status [n (%)]				<0.001
unmarried	55 (17.0)	31 (12.3)	24 (34.3)	
married	235 (72.8)	201 (79.4)	34 (48.6)	
divorced	29 (9.0)	17 (6.7)	12 (17.1)	
widower	4 (1.2)	4 (1.6)	0 (0.0)	
Children under supervision [n (%)]	255 (78.9)	219 (86.6)	36 (51.4)	<0.001
Children [n] (Me (range))	2 (1–5)	2 (1–5)	1 (1–4)	0.003
Education level* [n (%)]				0.060
technical school degree	99 (30.7)	74 (29.2)	25 (34.3)	
technology institution	210 (65.0)	171 (67.6)	39 (55.7)	
university degree	14 (4.3)	8 (3.2)	6 (8.6)	
Tenure [years] (Me (range))	14 (1–35)	17 (1–35)	4 (1–25)	<0.001

\* Technical school degree corresponds to International Standard Classification of Education – upper secondary education (ISCED-3); technology institution and university degree correspond to ISCED-6 (Bachelor's or equivalent level).

**Table 2.** Comparison of mean scores of the questionnaires answered by permanent and temporary nurses, Alexandroupolis, Greece, August 1–December 15, 2020

Questionnaire	Score (M±SD)		p
	permanent workers	temporary workers	
<i>Job Insecurity Index (JII)</i>			
cognitive dimension	14.76±2.41	12.79±2.37	0.013
emotional dimension	18.03±6.42	24.36±5.25	<0.001
<i>Work Ability Index (WAI)</i>	39.29±5.07	40.14±5.15	0.215
<i>WHO-5 Well-Being Index (WHO-5)</i>	57.24±22.45	49.20±21.21	0.007
<i>Well-Being at Work Scale (WBWS)</i>			
WBWS-1	13.96±3.35	11.87±3.13	<0.001
WBWS-2	18.62±4.25	20.37±4.13	0.002
WBWS-3	10.66±2.60	9.57±1.89	<0.001

WBWS-1 – the domain of the positive effect of work on their well-being; WBWS-2 – the domain of the negative effect of work on their well-being; WBWS-3 – the domain of the fulfillment of their expectations in their working environment.

**Table 3.** Questions of the *Job Insecurity Index (JII)* and *WHO-5 Well-Being Index (WHO-5)* questionnaire according to participants' employment status, Alexandroupolis, Greece, August 1–December 15, 2020

Question	Score (M±SD)		p
	permanent employees	temporary employees	
<b>JII</b>			
Q1: I believe that I will continue to work on this job	3.92±0.99	3.57±0.87	0.001
Q2: There is small chance of being unemployed	3.20±1.19	2.37±1.13	<0.001
Q3: I am confident of my work environment	3.57±0.98	3.11±0.97	0.002
Q4: I am confident that I'm capable of staying at work	4.07±0.97	3.74±0.73	<0.001
Q5: I worry about the possibility of being unemployed	3.51±1.48	3.96±1.06	0.096
Q6: I feel uncertain about the future of my job	2.73±1.25	3.86±0.84	<0.001
Q7: I am worried about the course of my career	2.87±1.22	3.77±0.88	<0.001
Q8: I'm afraid I might lose my job	2.29±1.13	3.40±1.04	<0.001
Q9: I'm afraid I might get fired	2.19±1.07	3.11±1.11	<0.001
Q10: There is a chance I will lose my job in the near future	2.23±1.06	3.66±1.16	<0.001
Q11: I'm afraid of getting furloughed	2.21±1.03	2.60±0.92	<0.001
<b>WHO-5</b>			
Q1: I have felt cheerful and in good spirits during the last 2 weeks	2.97±1.20	2.51±1.24	0.013
Q2: I have felt calm and relaxed during the last 2 weeks	2.96±1.23	2.60±1.26	0.047
Q3: I have felt active and vigorous during the last 2 weeks	3.03±1.10	2.63±1.27	0.018
Q4: I woke up feeling fresh and rested during the last 2 weeks	2.53±1.36	2.07±1.33	0.010
Q5: My daily life has been filled with things that interest me during the last 2 weeks	2.82±1.43	2.49±1.29	0.067

tion, non-permanent employees in the sample felt more uncertain about the future of their job ( $p < 0.001$ ), more worried about the course of their career ( $p < 0.001$ ), more afraid of losing their job ( $p < 0.001$ ), of getting fired ( $p < 0.001$ ) or getting furloughed ( $p < 0.001$ ).

Comparison of answers in the WAI showed that occupational accidents and injuries in the back and the upper or lower limbs ( $p = 0.001$ ), musculoskeletal disorders of the spine or neck ( $p = 0.007$ ), cardiovascular ( $p = 0.017$ ), neurological ( $p = 0.018$ ) and gastrointestinal disorders ( $p = 0.010$ ) were more frequent in the sample/research among permanent employees, while only mental health disorders were more frequent among temporary employees in the sample ( $p < 0.001$ ) (Table 4).

Both groups exhibited similar work ability ( $p = 0.215$ ) and similar number of sick leaves in the previous year ( $p = 0.178$ ). In particular, 57.3%, 30.0%, 7.5%, and 5.2% of the permanent employees in the sample and 61.4%, 27.2%, 11.4%, and 0.0% of the temporary employees in the sample were more than 25 days, 10–24 days, 1–9 days, and no days off work because of illness within last year, respectively.

Regarding wellbeing, the WHO-5 questionnaire revealed that permanent workers had a better quality of life than temporary ones ( $p = 0.007$ ). In particular, when each item of the WHO-5 questionnaire was compared between groups it was found that permanent employees in the sample were happier and in a better mood than

**Table 4.** Comparison of medical history based on Work Ability Index (WAI) between permanent and temporary nurses, Alexandroupolis, Greece, August 1–December 15, 2020

Medical disorder	Participants (N = 323) [n (%)]		p
	permanent workers (N = 253)	temporary workers (N = 70)	
Occupational accidents and injuries	96 (37.9)	12 (17.1)	0.001
Musculoskeletal disorders	90 (35.6)	13 (18.6)	0.007
Cardiovascular diseases	38 (15.0)	3 (4.3)	0.017
Respiratory disorders	36 (14.2)	11 (15.7)	0.755
Mental disorders	3 (1.2)	8 (11.4)	<0.001
Neurological disorders	32 (12.6)	2 (2.9)	0.018
Gastrointestinal disorders	41 (16.2)	3 (4.3)	0.010
Urogenital disorders	18 (7.1)	3 (4.3)	0.396
Skin diseases	31 (12.3)	7 (10.0)	0.605
Past history of neoplasms	9 (3.6)	1 (1.4)	0.363
Metabolic and endocrine disorders	28 (11.1)	10 (14.3)	0.459
Blood diseases	8 (3.2)	4 (5.7)	0.318
Congenital anomalies	–	–	–

non-permanent employees in the sample ( $p = 0.013$ ), they felt as calm and peaceful often ( $p = 0.047$ ), while they were often energetic and active ( $p = 0.018$ ), not feeling more tired after waking up in the morning ( $p = 0.010$ ) (Table 3). Finally, worse well-being at work was associated with temporary employment status, as it was assessed in all domains of WBWS, namely the positive effect of work on their well-being ( $p < 0.001$ ), the negative effect of work ( $p = 0.002$ ) and the fulfillment of their expectations in their working environment ( $p < 0.001$ ).

Multivariate linear regression analysis after adjustment for all possible confounders, revealed that temporary workers continue to have high cognitive ( $p = 0.010$ ) and emotional ( $p < 0.001$ ) insecurity, worse quality of life ( $p = 0.045$ ), low index of positive emotions and moods ( $p = 0.007$ ), low index of achievement-fulfillment ( $p = 0.047$ ) and high index of negative emotions ( $p = 0.006$ ) from their work (Table 5).

## DISCUSSION

This study had aimed to explore potential differences between temporary and permanent workers in the healthcare sector, namely nurses, in terms of quality of life, job insecurity and work ability and showed that non-permanent workers experience, as expected, significantly greater job insecurity, and worse quality of life, with no difference in the work ability.

The permanent/temporary nurses' ratio in this study (i.e., 3.6/1) is similar to the ratio of permanent/contract nurses employed in all tertiary hospitals in Greece (i.e., 3.5/1), based on data provided by the Hellenic Statistical Authority [17], which can be available upon request. Therefore, the authors' analyses can lead to safe conclusions about health, occupational safety, quality of life, work ability and workplace well-being of nurses in the country. Based on the WHO-5, this study demonstrates that nurses in temporary terms appear to be less satisfied,

**Table 5.** Results of regression analysis for the association of participants' employment status with the herein-studied questionnaires, Alexandroupolis, Greece, August 1–December 15, 2020

Questionnaire	Linear regression model								
	unadjusted model			adjusted by age and gender			fully adjusted		
	B	SE	p	B	SE	p	B	SE	p
<i>Job Insecurity Index (JII)</i>									
cognitive dimension	−1.977	0.324	0.013	−0.639	0.360	0.077	−1.024	0.396	0.010
emotional dimension	6.335	0.835	<0.001	6.467	0.928	<0.001	4.843	1.002	<0.001
<i>Work Ability Index (WAI)</i>									
	0.854	0.688	0.215	0.800	0.765	0.296	0.970	0.740	0.176
<i>WHO-5 Well-Being Index (WHO-5)</i>									
	−8.043	2.204	0.007	−6.686	2.900	0.022	−5.996	2.978	0.045
<i>Well-Being at Work Scale (WBWS)</i>									
WBWS-1	−2.093	0.446	<0.001	−1.913	0.492	<0.001	−1.463	0.541	0.007
WBWS-2	1.747	0.570	0.002	1.952	0.630	0.002	1.919	0.700	0.006
WBWS-3	−1.085	0.333	0.001	−0.782	0.366	0.033	−0.738	0.407	0.047

WBWS-1 – the domain of the positive effect of work on their well-being; WBWS-2 – the domain of the negative effect of work on their well-being; WBWS-3 – the domain of the fulfillment of their expectations in their working environment.

more depressed and feel less calm, active, and productive in their everyday life compared to the group under permanent contract. This result is in line with previous studies, which demonstrate that the more unstable the employment status, the lower the subjective well-being [18], supporting the hypothesis that, regardless of demographic characteristics, insecurity associated with temporary employment status is negatively related to the psychological well-being of workers [19]. In keeping with these findings, Park and Kim [20] also showed that employment in permanent conditions promotes workers' sense of well-being.

Previous studies suggest that job insecurity is associated with temporary work arrangements [21], as temporary workers face frequently emotional stress and pressure which may impact their well-being. The authors' findings, in agreement with these results, demonstrate that the emotional dimension of job insecurity was significantly impaired in the group of temporary workers. Similarly, the study has also shown a worse cognitive dimension of job insecurity among temporary workers,

as they reported a higher possibility of being unemployed and greater anxiety about their career perspectives and job maintenance. These results further reinforce what has already been reported in the literature, regarding the positive association between precarious employment and mental health problems [22,23].

The authors' findings on work ability, demonstrate that temporary workers are just as confident about their ability to work when compared to permanent ones, which is consistent with the results of Bernhard-Oettel et al. [21], who have shown that health complaints of employees are not predicted by the type of contract (permanent, temporary, on-call), but rather by the perception of the job and job security.

Further results from WAI analysis indicated that it is more possible for permanent workers to experience injuries and occupational accidents. This result is in contrast with the reported results of Benavides et al. [24], who supported that shorter job experience and lower awareness of workplace hazards, is a possible mechanism to explain the consistent association between temporary



work and occupational injury occurrence. Moreover, according to the authors' findings, cardiovascular disorders were more frequent among permanent employees. It seems that, this can be attributed to the fact that permanent workers have a higher age, consequently lower WAI which decreases with age, according to the findings of Bouzgarrou et al. [25], have more years of tenure and have been working for more years on shift work [26,27], and to the slightly higher BMI than temporary ones, subjecting them to potentially higher risks for arterial hypertension, abnormal lipid and/or glucose metabolism [28]. However, Seon et al. [29] showed that nonstandard work is associated with poorer cardiovascular health. In agreement with the results of other studies [22,23], the authors' study demonstrates that mental disorders were more frequent among temporary employees, which is in line with the findings of De Sio et al. [30], who demonstrated that job insecurity, in the form of temporary contracts, can affect the perception of psychosocial hazards and increases the vulnerability of workers to work-related stress.

The authors' findings also demonstrate that temporary employment status was associated with worse well-being at work, which is consistent with the results of Van Horn et al. [31] who suggested that employee well-being includes autonomy, ambition and occupational competence, of Shao et al. [32] who evaluated, among other factors, the effect of nurses' experience, level of education and type of employment on the job insecurity of employees and showed that job insecurity and turnover intention decreased with higher levels of support and lower levels of distress in the second victim, and of Martens et al. [33] who assessed the effect of working hours and types of employer contracts on the well-being of employees and noticed that those working in compressed work weeks, with irregular shifts and as temporary workers had lower levels of well-being.

It should be mentioned that this work has certain limitations. The first one is the cross-sectional design, which

would not allow us to draw safe conclusions about causal relationships. However, this work, by exploring and comparing the characteristics of the 2 groups, has provided the initial data on the current situation that will be useful in future, further analyses. Additionally, the study was based on a convenience sample, whose size is rather small, with a predominance of permanent workers. Reliable results are drawn from the sample of participants, as the response rate of nurses employed in the hospital where the survey was conducted was quite high, >95% and the recruitment was conducted in a consecutive manner without exclusion criteria. Therefore, the results are considered representative of the situation in which these workers find themselves.

## CONCLUSIONS

Employment under temporary terms coincides with the feeling of lower job security, worse quality of life and a lower level of well-being deriving from the work environment. On the other hand, in the same group, expectancy and ability to work are satisfactory and the incidence of different health disorders is generally lower, independently of age or gender, apart from mental disorders, due to the feeling of job insecurity. Further research, conducted in larger samples is clearly needed to draw definitive conclusions that can be broadly applied to different groups of employees in different settings. Focusing on vulnerable groups, such as employees under temporary employment can help preventing or minimizing physical and mental health problems, associated with occupational exposures.

Organizational changes in the nursing profession can have beneficial results. Supervisors and occupational physicians should recognize the extent of emotional and cognitive insecurity of nurses and their health problems, in order to provide the necessary support and assistance so as to increase the feeling of occupational security which will improve their quality of life

and boost their sense of work ability. Nurses should undertake tasks according to their medical history and ability, so that they can prosper in their workplace and therefore be more productive and provide high quality health care.

#### Author contributions

**Research concept:** Maria Katsaouni, Evangelia Nena

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**Statistical analysis:** Gregory Tripsianis, Evangelos Theodorou

**Interpretation of results:** Maria Katsaouni, Evangelia Nena, Christos Kontogiorgis, Aikaterini Arvaniti

**References:** Maria Katsaouni, Evangelia Nena, Gregory Tripsianis

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