



An Assessment of Work Ability, Psychosocial Status, and the Quality of Life among Physiotherapists in Lagos State, 2017

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Abstract

Background: There are many factors affecting work ability among health practitioners, but none has been investigated among physiotherapists in Nigeria. This study investigated the correlation among work ability, psychosocial status, and the quality of life among physiotherapists in Lagos State, Southwestern Nigeria.

Materials & Methods: A survey was carried out among 111 physiotherapists (52 males and 59 females) using 3 standard questionnaires; work ability index, SF-12 quality of life questionnaire and Copenhagen psychosocial questionnaire that captured information on work ability, quality of life, and psychosocial status. Inferential statistics of Spearman's correlation was used to determine the correlation between variables.

Results: The highest scores of the work ability, quality of life and psychosocial status among the respondents were found to be 58.60%, 89.90%, and 55.80%, respectively. There was a significant positive correlation ($r_s = 0.262$, $p = 0.007$) between work ability and psychosocial status; but a negative correlation ($r_s = -0.072$, $p = 0.456$) between work ability and the quality of life among the respondents. In addition, there was a significant positive correlation ($r_s = 0.224$, $p = 0.022$) between the quality of life and psychosocial status.

Conclusions: This study showed high work ability, a moderate quality of life, and good psychosocial status among physiotherapists in Lagos State, Southwestern Nigeria. According to the results, work ability had no effect on the quality of life but had an effect on psychosocial status among physiotherapists in Lagos State. In addition, their quality of life had an effect on psychosocial status.

Keywords: Quality of life, Physiotherapists, Nigeria.

Introduction

Physiotherapy is a profession consisting of a range of activities involving repetitive movements, awkward positions, and prolonged standing while performing the task. These activities affect their general quality of life, psychological status, and general wellbeing [1]. Muaidi and Shanb [2] reported in their study that physical therapists had moderate physical and psychological work demands as well as moderate to high levels of job control. The exhaustion derived from work burden could be linked to acute and chronic physiological

responses, psychological reactions, and behavioral changes, with the likelihood of decreased functional capacity and ability to work, which trigger work-related problems [3]. In addition, demands characterized as helpful could result in the advancement and protection of employee health, work, and functional capacity, depending on employee age [4]. For instance, if the work plays an essential role in personal development and social life [3], it will become more individualized, brash, and demanding for the psychic level, which may even lead to mental

health imbalance among workers [5]. Work ability is dependent on many factors, including socio-demographic features, lifestyle, and health status associated with work [5]. Work ability is comprised of a series of interactions, including health-related, physical, psychological, and social prerequisites of performance, as well as personal and environmental factors. In contrast, work disability has been reported to be associated with musculoskeletal disorders, mental symptoms, and physical performance [6].

Social factors are concerned with social structures and processes affecting individuals. Psychological factors include individual-level processes affecting mental status, which are sometimes combined into "psychosocial". This term implies that the effects of social processes are occasionally moderated through psychological understanding [7].

Quality of life (QoL) is one of the major aspects of mental health. It is a sense of wellbeing that has a significant effect on human life [8]. The assessment of QoL in individuals could be an indication of determining their mental health status. Work ability has been shown to have a significant relationship with the overall health-related quality of life (HRQoL) among health workers, including nurses [9].

Past research has addressed the determinants of work ability in occupational populations, such as petrochemical industry workers [10] and hairdressers [5] with high physical demands at work. However, the association between work ability and some psychosocial variables has been described in past research [5]. The effects of various determining psychosocial variables on work ability have not yet been known, particularly in physically demanding occupations, such as physiotherapy.

Therefore, this study aims to determine the correlation among work ability, psychosocial status, and the quality of life among physiotherapists in Southwestern Nigeria.

Materials and Methods

This descriptive survey was conducted from June to September 2017, which involved 111 practicing physiotherapists, with the results determined using the formula developed by Cochran [11] (1977), i.e. $Z^2 \times P(1-p)/d^2$, where Z = standard normal variate (at 5%), type 1 error ($p < 0.050$) is 1.96, and P is the prevalence of work-related musculoskeletal disorders among physiotherapists in Nigeria, which is 91.3% [12]. The participants were recruited from selected federal, general, state, and private hospitals in Lagos State, Southwestern Nigeria, using a purposive sampling technique. The

inclusion criteria were physiotherapists who had been practicing their profession at least for a period of 6 months and those still doing as such. The exclusion criterion included those physiotherapists who had been retired from their profession. Prior to the commencement of the study, written informed consent forms were obtained from all participants. Prior to the start of this study, the Health Research and Ethics Committee of Lagos University's Teaching Hospital (LUTH), i.e. Idi-Araba, Lagos, granted ethical approval for this study with approval ID: ADM/DCST/HREC/APP/1476.

In addition, approval was sought from the authorities of the Health Management Committee of Lagos State. A letter stating the purpose of the study, assuring the participants of the confidentiality of the study, and seeking informed consent was distributed with every copy of the questionnaires. The participants' information on demographic variables, including the age, sex, weight, height, body mass index, specialty area of practice, rank, educational qualification, and years of professional experience was collected.

Three types of questionnaires, including the work ability index questionnaire, the short form quality of life questionnaire, and the Copsoq psychosocial questionnaire (short form) were used to assess the work ability, quality of life, and psychosocial status among the participants.

Work Ability Index (WAI): The WAI questionnaire was used to assess perceived work ability, which was developed by the Finnish Institute of Occupational Health. The first part of the WAI questionnaire contained demographic information on the sex, age, educational level, vocational/professional education, occupation, work task, industrial branch of employment and workplace, department name, and job nature (mental or physical). The second part of the WAI questionnaire consisted of 7 items, including current work ability compared with lifetime ability at its best (0–10), work ability in relation to job demands (2–10), the number of current diseases diagnosed by a physician (1–7), estimated work impairments due to diseases (1–6), sick leave during the past year (1–5), personal prognosis of work ability in 2 years from now [1, 4 or 7], and mental resources, which referred to the workers' life in general, both at work and during leisure time [1–4]. The numbers in parentheses indicate the score range for each item.

The WAI was calculated by summing up the estimated points for each item. A higher score would indicate better work ability for each item. The total WAI score ranged from 7–49 points, and the scores were categorized into 4 levels, including

poor (7–27), moderate (28–36), good (37–43), and excellent (44–49). Subjects with the WAI score of 36 or lower would be classified as having low work ability, and those with the WAI score of 37 and above were classified as having satisfactory work ability [13]. The validity of the WAI has recently been studied by Radkiewicz et al [14], and its test–retest reliability has been examined by Zwart et al [15].

SF-12 Questionnaire (short form): The quality of life was assessed by the SF-12 questionnaire.

The SF-12 questionnaire was developed as a shorter alternative to the SF-36 questionnaire, which is applicable to large-scale health surveys where the application of longer instruments would be very time-consuming or costly. The SF-12 questionnaire has 12 questions grouped into 8 domains or scales of physical functioning (PF), role limitations due to physical health (RP), bodily pain (BP), general health perception (GH), social functioning (SF), role limitations due to emotional problems (RE), vitality (VT), and mental health (MH). These 8 scales could be summarized into the 2 components of physical component summary (PCS) and mental component summary (MCS). The data obtained using the SF-12 questionnaire were developed, tested, and validated by Qualitymetric Inc. The final score of the SF-12 questionnaire ranged from 0–100, where a higher score indicated a better health-related quality of life (HRQoL) [16].

The Copsoq Psychosocial Questionnaire (short form): This questionnaire consists of questions aimed at obtaining information on work-related psychosocial risk factors. This questionnaire was developed by the National Centre for the Working Environment (NRCWE, previously AMI), Copenhagen, Denmark, which is a tool for the workplace assessment of the psychosocial work environment. The Copsoq short form has a total of 23 questions with each question having a sub-question, which are grouped into the 5 domains of

psychosocial factors at work, workplace as a whole, work and private lives, health and wellbeing, as well as conflicts and offensive behavior. Each domain has a scoring scale varying from 0-4 points or 0-3 points [17], with the reliability of 0.7-0.89 [18].

Height Meter: It was made of wood and calibrated in meters, centimeters, and inches (a stadiometer). This device has a vertical scale and a moveable headboard used for measuring a person's height. It measures the nearest centimeter to obtain the exact height of the subjects [19].

Weighing Scale: A portable bathroom weighing scale (Harson Ireland) calibrated in kilograms from 0-220kg was used in this study. It is an instrument for determining the weight or mass of an object used to get the exact weight of the subjects [19].

Data were analyzed using the Statistical Package for Social Sciences (SPSS) V.22.0. The descriptive statistics of frequency, percentages, and charts were used to express demographic variables. In addition, the inferential statistics of the Spearman's correlation was used to determine the correlation among work ability, psychosocial factors, and the quality of life at the alpha level of 5%.

Results

A total of 113 copies of the questionnaires were returned out of the 140 copies distributed. Two copies were invalid owing to non-response in most parts. The overall response rate was 79.28%. Therefore, 111 copies of the questionnaires were analyzed in this study. The studied population aged from 22 to 58 with the mean age of 32.72±8.82. The total body mass index (BMI) ranged from the normal weight which was highest at 66 (62.40%) to obese which was 11 (10.10%). A total of 59 participants (53.40%) were females. Majority (71, 64%) of the respondents were graduates, and a few of them (5, 4.50%) had a PhD. The participants' work experience ranged from 1-35 years (Table 1).

Table 1. Work ability grading as well as the work ability of the participants in relation to physical and mental demands

Variable	Frequency (n)	Percentage (%)
Physical demands	Rather poor	2
	Moderate	39
	Rather good	30
	Very good	40
	Total	111
Mental demands	Rather poor	4
	Moderate	29
	Rather good	40
	Very good	38
	Total	111
Grade	Excellent	36
	Good	65
	Moderate/Fair	10
	Total	111

Grades: 7-27 =Poor; 28-36 =Moderate/Fair; 37-43 =Good; 44-49 =Excellent

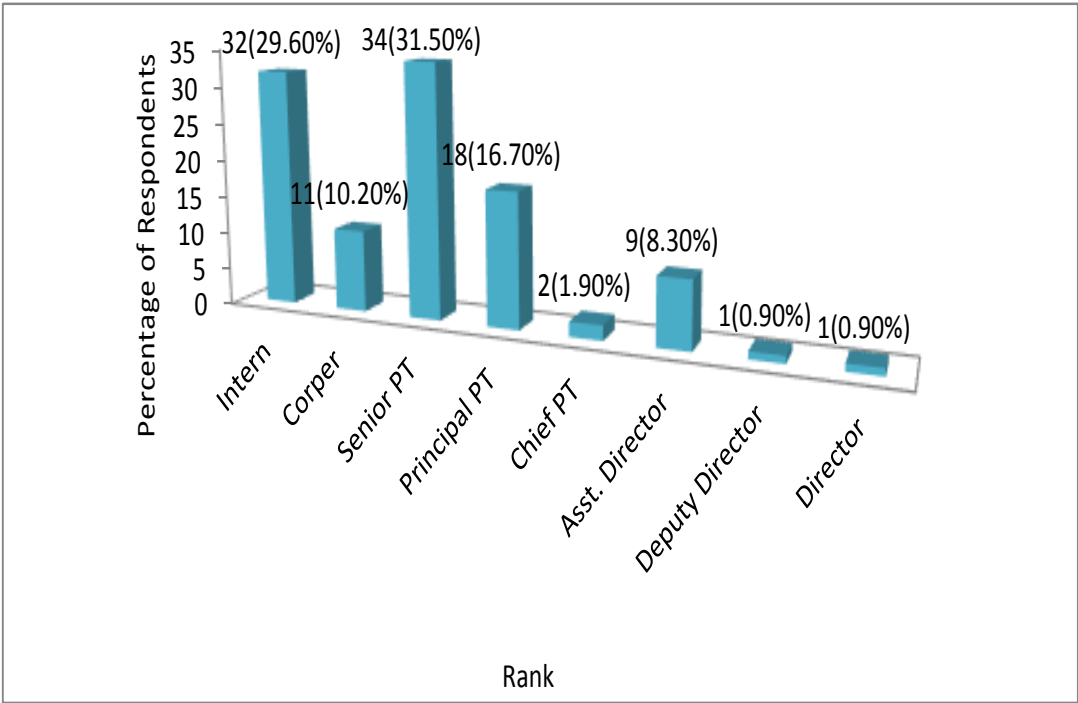


Fig. 1. Participants’ rank in Lagos State, Nigeria, 2017
PT: Physiotherapist

A total of 34 participants (31.50%) were senior physiotherapists, and the lowest number of them included a deputy director (0.90%) and a director (0.90%) (Fig. 1).

The specialty fields of the participants varied from orthopedics (36, 33.60%) to sports physiotherapy (1, 0.90%) (Fig. 2).

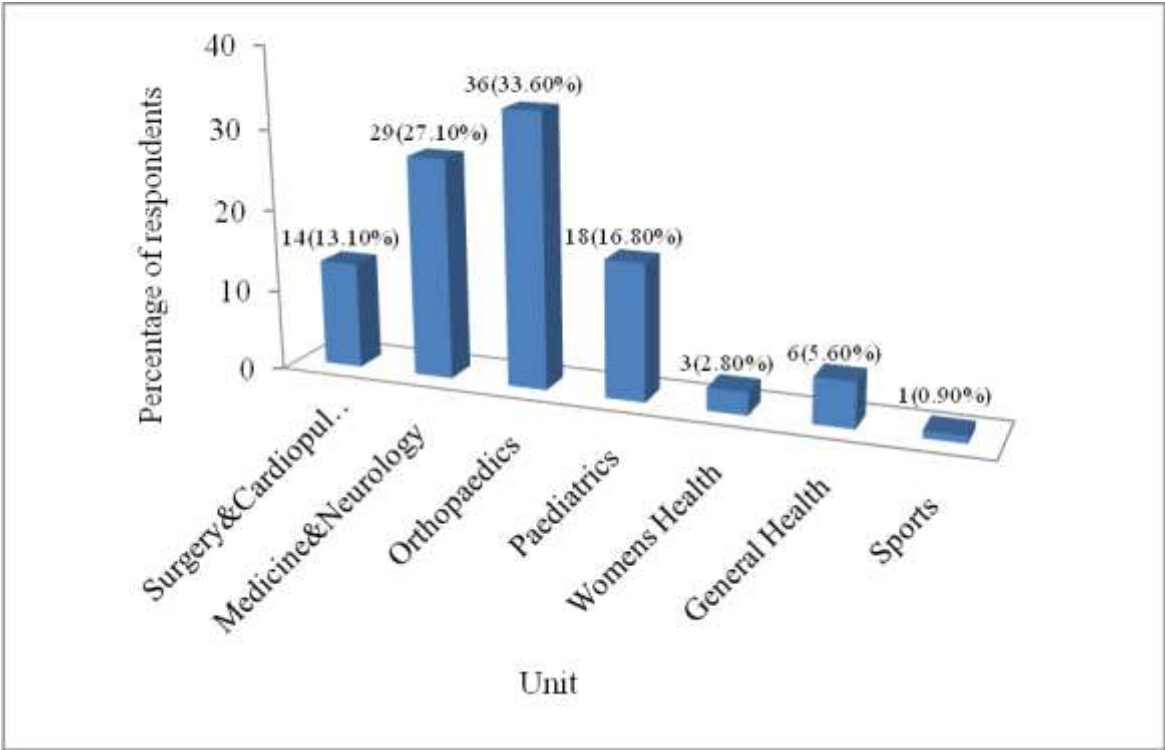


Fig. 2. Specialty fields of the participants in Lagos State, Nigeria, 2017

Most of the participants, 52 (46.80%), responded that their work ability was rather good. Ninety nine (89.20%) of them responded that their work was physically and psychologically demanding. In addition, 40 (36.0%) of the participants reported that their work in relation to physical demands was

very good, and 2 (1.80%) of them considered it rather poor. Besides, 40 (36.0%) of the participants reported that their work in relation to mental demands was rather good; in contrast, 4 (3.60%) of the participants reported that their work in relation to mental demands was rather poor.

Table 1 shows the work ability grading of the participants. According to the table, the majority of the participants, i.e. 65 (58.60%) of them, fall under good work ability, while 10 (9.00%) of them fall under moderate/fair work ability.

Quality of Life among the Participants: Forty-six (41.4%) participants reported they had excellent general health. A total of 51 (45.90%) of the participants reported their bodily pain did not interfere with their usual work in the past 4 weeks. Besides, 21 (19.1%) of the participants reported they had a lot of energy in the past 4 weeks. Ninety-five (85.60%) of the respondents reported no limitations in their physical role, and 91 (82%) of them indicated no limitations in their emotional role. Ninety-three (84.5%) of the participants claimed they had no limitations in moderate activities, and 88 (80%) of them indicated no limitations in climbing several flights of stairs. In addition, the majority of the participants had a moderate score, i.e. 98 (89.90%), while 4 (3.70%) of the participants had a good score of the quality of life.

Psychosocial Status of the Participants: Forty-nine (45%) of the participants never got behind with their work, while 45 (40.90%) of the participants sometimes kept working at a high pace. The work of 40 (36.40%) of the participants never put them in emotionally disturbing situations. Forty-four (40.00%) of the participants often had significant effects on their work. Besides, 47 (42.70%) of the participants often had the possibility of learning new things. A total of 73 (66.40%) of the participants always felt their job was satisfactory. In addition, 51 (46.40%) of the participants always felt their work was of great importance. Thirty-six (33.00%) of the participants sometimes got well informed in advance concerning important decisions, changes, or plans for the future. Moreover, 40 (36.40%) of the participants sometimes felt their work was recognized. Forty-one (37.30%) of the participants often felt their work had clear objectives. In addition, 40 (36.40%) of the participants often felt their direct supervisor would attach high priority to job satisfaction; they often felt their supervisor was willing to listen.

In addition, 67 (60.90%) of the participants were generally satisfied with their job. A total of 13 (11.70%) of the participants agreed their work would drain so much energy. Besides, 46 (41.80%) of the participants could trust information from the management to a large extent. Forty (36.40%) of the participants felt conflicts would be resolved fairly, while 9 (8.20%) of them felt conflicts would be resolved fairly to a small extent. Sixty-one (55.50%) of the participants had acceptable

general health, and six (5.50%) of them claimed they had been stressed all the time.

In addition, three (2.70%) of the participants had been exposed to an undesired sexual attention during weeks mostly by patients. Thirteen (11.80%) of the participants had not been exposed to threats of violence for a few times mostly by patients. One (0.90%) of the participants had been exposed to physical violence a few times by patients. Two (1.80%) of the participants had been exposed to acts of bullying at their workplace mostly by supervisors. Fifty-eight (55.80%) of the participants had a good score of psychosocial status, while 1 (1%) participant had a poor score of psychosocial status.

Correlation among Work Ability, Quality of Life, and Psychosocial Status: A negative correlation ($r_s = -0.072$, $p=0.456$) was observed between work ability and the quality of life; in contrast, a significant positive correlation ($r_s = 0.262$, $p=0.007$) was found between work ability and psychosocial status among the participants. There was also a significant positive correlation ($r_s = 0.224$, $p= 0.022$) between the quality of life and psychosocial status.

Discussion

This study was conducted to assess the relationship among work ability, psychosocial status, and the quality of life among physiotherapists in Lagos State, Nigeria. The response rate of the participants was 79.28%, which was inconsistent with the results of Adegoke et al, [12] who had a response rate of 58.10% in a study conducted among physiotherapists in Nigeria on work-related musculoskeletal disorders. This could be due to the increase in the number of physiotherapy graduates in Nigeria. In terms of gender distribution in this study, the female participants were more than male. This was inconsistent with the report of the study by Adegoke et al [12], which was conducted among physiotherapists in Nigeria as well as the study by Muaidi and Shanb [2], which was conducted among physical therapists in the Kingdom of Saudi Arabia, in which the number of males was more than that of females. This could have been due to the high turnout among physiotherapy graduates in many higher education institutes offering physiotherapy as a course in Nigeria, which normally have a larger number of female physiotherapy students than males.

The findings of this study showed that a small percentage (10.80%) of the participants perceived their work demands to be physically demanding; however, a large percentage (89.20%) of them

perceived their work to be both physically and psychologically demanding. It could be due to the fact that the number of physiotherapists employed in most hospitals with physiotherapy facilities was not enough. This finding was consistent with those of the study by Pacheco [6] on hairdressers in Rio de Janeiro, who reported that 29.25% of them considered their job to be physically demanding, 11.32% of them considered it psychologically demanding, and 59.43% of them regarded it both physically and psychologically demanding.

According to the results of this study, 58.60% of the participants had good work ability, which was consistent with the study of Akodu and Ashalejo [20] conducted among nurses in Lagos State, Nigeria, with 47.40% of the participants reported to have had good work ability. It was also consistent with the study of Pacheco [6] conducted among hairdressers in Rio de Janeiro, who reported that 39.62% of the participants had good work ability. Godinho et al [21] reported average work ability to have been 41.6% among technical-administrative workers in the education system of Brazil.

Scores for the quality of life included general health (41.40%), bodily pain (45.90%), and vitality (19.10%). These results were slightly consistent with the results of the study by Silva et al [22] with scores 60.10% for bodily pain, 52.70% for vitality, and 63.90% for mental health among care providers in Southeastern Brazil. In addition, these results corroborate a previous study by Fischer et al, [23] which showed fatigue and tiredness (the vitality domain) were factors associated with inadequate work ability. The results of this study showed a negative response in both physical and emotional role limitations with over 90 of the participants having chosen the no-response. In addition, physical functioning had the high prevalence of no limitation response, yet a previous study by Halonen et al [8] found out that psychological job conditions were associated with emotional states. It also showed that several emotional states were associated with self-reported muscle tension, which was in turn associated with symptoms from the back, neck, and shoulders that could affect the work output. In addition, the overall quality of life among the participants was relatively moderate, which had no negative outcome. This result further indicates that the majority of physiotherapists in Lagos State have an average quality of life.

From a psychosocial perspective, the results of this study showed that most of the participants never got behind with their work, sometimes had to keep working at a high pace throughout the day, often felt their job was well recognized, and sometimes felt their immediate superior gave

priority to job satisfaction. These results indicate that the majority of physiotherapists are most often subjected to high pressure at work. This finding is not in agreement with the study by Martinez and Latorre [24] among office workers, which reported that seniority in the job and job satisfaction were also associated with a better work ability among office workers.

In this study, almost half of the participants trusted information from the management to a large extent. Less than half of the participants somewhat felt conflicts would be resolved in a fair manner, and 33.60% of them reported that work assignments were distributed fairly. These results show the extent of social support provided to the participants, but it is low considering the percentage of the responses. A study by Hoogendoorn et al [25] corroborates this result by reporting that strong evidence was found for low social support in the workplace as well as low job satisfaction. The results from this study showed that nearly up to half of the participants sometimes felt worn out, and one third of them often felt stressed, with these further showing that the participants have been at a high risk of decreased work ability.

Furthermore, the majority of the participants had not been exposed to an undesired sexual attention, threats of violence, physical violence, and bullying acts. However, less than half of the participants reported sexual attention for a few times mainly by clients or patients. In addition, a few of the participants reported they had been exposed to threats of violence and physical violence for a few times, but less than half of them had been exposed to bullying acts for a few times mainly by their superiors and colleagues. This result shows that the participants had also been exposed to psychosocial factors both in the workplace and in personal life, which could affect their work output in terms of their work ability. This implies that the joint impact of psychosocial factors has been far stronger than that of individual factors, such as age and sex.

The results of this study showed that the quality of life has no significant relationship with work ability. This was consistent with the results of the study by McPhail and Waite, [26] who reported no effects of pain or discomfort on physiotherapists' health-related quality of life, with most of them having been in full health. This could have been due to the good quality of life reported by the participants.

This study revealed that psychosocial status has a significant positive relationship with work ability. This is consistent with the findings of the studies by Van den Berg et al [27] and Mazloumi et al [12],

which showed a positive relationship between psychosocial factors at work, mental health, and work ability. This result could be due to the excessive stress to which physiotherapists are exposed, which gradually decreases their work ability as days go by in their work environment. The outcome indicating a significant positive correlation between the quality of life and psychosocial status stressed the importance of mental and physical health in the wellbeing of the physiotherapists in this study. This concurs with the finding of the study by Saudicani et al [28] who stated physical and psychosocial factors would interact with each other in the work environment. This is the first study done on work ability among physiotherapists in Nigeria. It was limited in terms of inadequate responses given by physiotherapists as well as its short duration.

Conclusion

There was a good level of work ability among physiotherapists in Lagos State, Nigeria. According to the results, the quality of life had no influence on work ability among the participants in Lagos State. There was relatively good psychosocial status among physiotherapists, which in turn affected work ability and the quality of life among them in Lagos State. Therefore, it is recommended that physiotherapists should be more aware of their psychosocial status and not just aware of the status of patients or clients they treat. In the end, health promotion programs should address the working conditions of health workers rather than just individual lifestyle factors. More studies are recommended to be carried out to assess work satisfaction among physiotherapists in relation to their work ability as well as their level of burnout to know the extent to which physiotherapists could work before burning out.

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References

1. Nordin NAM, Leonard JH, Thye NC. Work-related injuries among physiotherapists in public hospitals: a Southeast Asian picture. *Clinics (Sao Paulo)* 2011; 66(3):373-8.
2. Muaidi QI, Shanb AA. Effects of work demands on physical therapists in the KSA. *J Taibah Univ Med Sci* 2016; 11(1):56-62.

3. Papathanasiou IV. Work-related Mental Consequences: Implications of Burnout on Mental Health Status among Health Care Providers. *Acta Inform Med* 2015; 23(1):22-8.
4. Hotopp U. The ageing workforce: a health issue? *Economic & Labour Market Review* 2007; 1:30-5.
5. Ferreira AP. Work Ability and Psychosocial Factors among Hairdresser Workers, Rio de Janeiro, Brasil. *Cienci Trab* 2015; 17(52):83-8.
6. Halonen JI, Mänty M, Pietiläinen O, Kujanpää T, Kanerva N, Lahti J, et al. Physical working conditions and subsequent disability retirement due to any cause, mental disorders and musculoskeletal diseases: does the risk vary by common mental disorders? *Soc Psychiatry Psychiatr Epidemiol* 2019; doi.org/10.1007/s00127-019-01823-6.
7. Stansfeld S, Rasul F. Psychosocial factors, depression and illness. In: Steptoe A, editor. *Depression and physical illnesses*. Cambridge, England, United Kingdom: Cambridge University Press 2006; p.19-50.
8. Tavakoli-Fard N, Mortazavi SA, Kuhpayehzadeh J, Nojomi M. Quality of life, work ability and other important indicators of women's occupational health. *Int J Occup Med Environ Health* 2016; 29(1):77-84.
9. Abbasi M, Zakerian A, Akbarzade A, Dinarvand N, Ghaljahi M, Poursadeghiyan M et al. Investigation of the Relationship between Work Ability and Work-related Quality of Life in Nurses. *Iran J Public Health* 2017; 46(10):1404-12.
10. Mazloumi A, Rostamabadi A, Saraji GN, Rahimi Froushani A. Work Ability Index (WAI) and its association with psychosocial factors in one of the petrochemical industries in Iran. *J Occup Health* 2012; 54(2):112-8.
11. Cochran WG. Sampling techniques. 3rd ed. New York, United States: John Wiley & Sons; 1977.
12. Adegoke BOA, Akodu AK, Oyeyemi AL. Work-related musculoskeletal disorders among Nigerian physiotherapists. *BMC Musculoskeletal Disord* 2008; 9:112.
13. Bresić J, Knezević B, Milosević M, Tomljanović T, Golubić R, Mustajbegović J. Stress and work ability in oil industry workers. *Arh Hig Rada Toksikol* 2007; 58(4):399-405.
14. Radkiewicz P, Widderszal-Bazyl M, the NEXT-Study group. Psychometric properties of Work Ability Index in the light of comparative survey study. *Int Congr Ser* 2005; 1280:304-9.
15. Zwart BCH de, Frings-Dresen MH, van Duivenbooden JC. Test-retest reliability of the Work Ability Index questionnaire. *Occup Med (Lond)* 2002; 52(4):177-81.
16. Ware JE, Kosinski M, Keller SD, New England Medical Center Hospital. Health Institute. SF-12: How to Score the SF-12 Physical and Mental Health Summary Scales. 3rd ed. Boston,

- Mass, United States: The Health Institute New England Medical Center; 1998.
17. Research Center for Working Environment. Psychosocial factors at work: NRCWE's short questionnaire for assessment of the psychosocial work environment. Copenhagen, Denmark: Research Center for Working Environment; 2007. Available from: <https://fliphtml5.com/khjf/znx/basic>
 18. Thorsen SV, Bjorner JB. Reliability of the Copenhagen Psychosocial Questionnaire. *Scand J Public Health* 2010; 38(3 Suppl):25-32.
 19. Stewart A, Marfell-Jones M, Olds T, De Ridder H, International Society for Advancement of Kinanthropometry. *International Standards for Anthropometric Assessment*. 3rd ed. Lower Hutt, New Zealand: International Society for the Advancement of Kinanthropometry (ISAK); 2011.
 20. Akodu AK, Ashalejo ZO. Work-related Musculoskeletal Disorders and Work Ability among hospital nurses. *J Taibah Univ Med Sci* 2019; 14(3):252-61.
 21. Godinho MR, Greco MR, Teixeira TM, Teixeira LR, Guerra MR, Chaoubah A. Work ability and associated factors of Brazilian technical-administrative workers in education. *BMC Res Notes* 2016; 9:1.
 22. Silva AA, Souza JM, Borges FN, Fischer FM. Health-related quality of life and working conditions among nursing providers. *Rev Saude Publica* 2010; 44(4):718-25.
 23. Fischer FM, Borges FN, Rotenberg L, Latorre Mdo R, Soares NS, Rosa PL, et al. Work ability of health care shift workers: What matters? *Chronobiol Int* 2006; 23(6):1165-79.
 24. Martinez MC, Latorre Mdo R. Health and work ability among office workers. *Rev Saude Publica* 2006; 40(5):851-8.
 25. Hoogendoorn WE, van Poppel MN, Bongers PM, Koes BW, Bouter LM. Systematic review of psychosocial factors at work and private life as risk factors for back pain. *Spine (Phila Pa 1976)* 2000; 25(16):2114-25.
 26. McPhail SM, Waite MC. Physical activity and health-related quality of life among physiotherapists: a cross sectional survey in an Australian hospital and health service. *J Occup Med Toxicol* 2014; 9(1):1.
 27. van den Berg TIJ, Alavinia SM, Bredt FJ, Lindeboom D, Elders LAM, Burdorf A. The influence of psychosocial factors at work and life style on health and work ability among professional workers. *Int Arch Occup Environ Health* 2008; 81(8):1029-36.
 28. Suadcani P, Olesen K, Bonde JB, Gyntelberg F. Psychosocial work conditions associated with sickness absence among hospital employees. *Occup Med (Lond)* 2014; 64(7):503-8.