

Abstracts from Nippon Eiseigaku Zasshi (Japanese Journal of Hygiene) vol. 71, no. 2

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Contributions of physical therapists to primary preventive health care

Nippon Eiseigaku Zasshi, 71, 107–110 (2016)

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The limitations of what physical therapists can differ from country to country. In Japan, physical therapists are national licensed health care professionals who can help patients improve or restore their mobility. Most Japanese physical therapists provide care for people in health care facilities, medical-welfare transitional facilities, and welfare facilities for the elderly. Currently, physical therapists are unable to sufficiently contribute to primary preventive health care in Japan. However, there are many health problems that physical therapists could help alleviate. For example, low back pain (LBP) more likely than any other condition prevents people from working; thus, making the establishment of effective measures to prevent and reduce LBP vital. An estimated 20,500,000 Japanese individuals have diabetes mellitus (DM) or are at a high risk of developing the disease. DM commonly accompanies stroke and/or heart disease, and is characterized by complications that result from chronic hyperglycemia. Evidence-based physical therapy is effective for the prevention and treatment of LBP and DM. The Japanese Physical Therapy Association established the Japanese Society of Physical Therapy (JSPT) in June 2013. The JSPT has 12 departmental societies and 10 sections. We believe that the JSPT will advance the study of the potential role of physical therapists in primary preventive health care. In the future, it is expected that Japanese physical therapists will contribute to primary preventive health care.

Physical therapy for musculoskeletal disorders of workers: role of physical therapists in occupational health

Nippon Eiseigaku Zasshi, 71, 111–118 (2016)

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Musculoskeletal disorders in workers decrease the productivity of companies and result in socioeconomic losses. Low back pain accounted for approximately 60 % of occupational diseases in the past and this is still true at present, making it a major occupational health problem in Japan. Herein, the findings about low back pain are explained as follows: the correlation between imaging examination findings and low back pain is low; psychosocial factors are involved in the onset of low back pain and how it becomes chronic; and improvement of activity is more useful than rest. Furthermore, the advantages of employing physical therapists for improving occupational health are as follows: they can (1) evaluate and intervene ergonomically; (2) provide instructions using a behavioral modification technique based on psychosocial factors; and (3) provide instructions regarding exercise programs considering obstacles to the development of a good exercise habit (painful diseases including osteoarthritis and other diseases such as hypertension and diabetes). In addition, falling, whose incidence has recently been increasing and is an important issue in occupational health, is examined from the aspect of musculoskeletal disorders. The following activities of physical therapists are introduced: the items to be checked during a tour of inspection of a workplace and detailed descriptions of work management and working environment management measures. Physical therapists are rarely involved in studies of low back pain and falling, but their knowledge and skills have been demonstrated to contribute to improving occupational health.

Physical therapy for metabolic syndrome prevention in workers: novel role of physical therapist

Nippon Eiseigaku Zasshi, 71, 119–125 (2016)

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In Japan, physical therapists have usually been involved in physical therapy for patients with functional disorders associated with cerebrovascular or orthopedic diseases in hospitals. With the aging of Japanese society, the number of diseased people will progressively increase; thus, it is important to pay much more attention to disease prevention. In this regard, physical therapists are expected to play a new role in the field of preventive medicine.

Metabolic syndrome or central obesity with multiple cardiometabolic risks is associated with a high risk of type 2 diabetes or cardiovascular diseases and is now a central target for early detection and intervention for disease prevention. The incidence of metabolic syndrome increases with age, and men showed a higher incidence of metabolic syndrome than women in all generations. We have been involved in the guidance of workers with metabolic syndrome for a long time, and we conducted a multicenter study to establish effective guidance for these workers.

In this paper, we will use our evidence to discuss the role of physical therapists in providing guidance for preventing metabolic syndrome. We are now conducting worksite supporting exercise intervention for workers who were resistant to conventional lifestyle guidance. In addition, the unique role of physical therapists in this new trial will be introduced.

Role of physical therapists in health care of the elderly

Nippon Eiseigaku Zasshi, 71, 126–132 (2016)

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Japan is one of the leading countries worldwide in terms of longevity. However, with the increase in the elderly population, the number of individuals requiring some type of daily living assistance has currently exceeded 6 million. Cerebrovascular disease is the main reason for the requirement of care among the elderly. However, individuals in the late old age (≥ 75 years)—the number of which is rapidly increasing—also experience problems related to the functional decline of their musculoskeletal system, owing to age-related frailty and falls/fractures. Increasing the amount of physical activity not only helps prevent the onset of lifestyle-related diseases, but can also prevent the age-related decline in motor function. Hence, elderly individuals should perform exercises for health promotion and preventative care.

However, as the physical functions and chronic diseases differ among individuals, it appears that the exercise programs offered as part of primary and secondary prevention programs may not be effective. Hence, physical therapists should play a large role in

establishing appropriate and individualized exercise programs, as they have considerable experience in providing exercise therapy in the context of medical care for elderly people with varying conditions and risks.

Survey on the awareness of genetic testing in Japanese workers: the effect of participant characteristics on awareness

Nippon Eiseigaku Zasshi, 71, 133–137 (2016)

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Objectives: The objectives of this study were to assess the possibility of utilization of genetic testing and to determine the effect of participant characteristics on genetic testing awareness in Japanese workers.

Methods: The subjects of this study consisted of 998 workers from two companies located in Kyusyu, Japan, from June to July, 2014. We examined the participant characteristics and genetic testing awareness using paper questionnaires. Ultimately, the data from 737 subjects (73.8 %) was included in our analysis.

Results: Regarding participant characteristics, the percentage of respondents who replied “I have heard of genetic testing” (including knowledge about genetic testing) and “I would like to have genetic testing” were 82.5 and 58.2 %, respectively. A significant age difference in genetic testing awareness was also observed in our study. Logistic regression analysis revealed both significant adjust odds ratios (ORs) of 3.02 (95 % CI 1.67–5.46) and 3.82 (95 % CI 1.71–8.53) in the 40–49-year-old group and the over 50 year old group, respectively, compared with the 20–29-year-old group. In addition, females and the participants who graduated from graduate schools showed greater interest in genetic testing.

Conclusions: This survey showed that about 80 % of Japanese workers know about genetic testing and about 60 % would like to have a test. The results of our survey also suggest that the awareness of genetic testing is influenced by participant characteristics, namely age, sex, and education.

Genetic and environmental risk factors, sleeping environment, for allergic diseases in infant: analysis of a data subset from the South Kyushu and Okinawa Study Area of Japan Environment and Children's Study

Nippon Eiseigaku Zasshi, 71, 138–148 (2016)

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Objectives: The incidence of infant allergic diseases have increased recently, and it may be caused by multiple influences of both genetic and environmental factors from the fetal stage through infancy. In this study, we analyzed a data subset from the South Kyushu and Okinawa (SKO) Study Area of Japan Environment and Children’s Study (JECS) to determine the relationship of allergic diseases in infants with mothers’ characteristics and/or infants’ life habits, especially sleeping.

Methods: A total of 3873 mother-infant pairs from the SKO Regional Center of JECS were included. The mothers responded to questionnaires in the first trimester of their pregnancy and the self-reported questionnaire when their infants were 1 year old. Student’s *t* test, Chi square test, trend test, and logistic regression analysis were carried out to analyze the associations between the infants’ allergic diseases and the mothers’ genetic characteristics and/or sleeping habits of infants.

Results: Maternal allergic diseases were significantly associated with increased infant allergy risk (OR: 1.93, 95 % CI: 1.63–2.27). The number of allergic diseases of mothers was also significantly associated with infant allergy, and the trend test showed an increasing risk of infant allergy ($p < 0.001$). Regarding infants’ life habits, the infants who sleep in the prone position had a higher allergic disease risk than those who sleep in other positions (OR: 1.46, 95 % CI: 1.17–1.83). These significant associations were observed regardless of the presence of allergy in mothers.

Conclusions: This study suggests that the development of allergic diseases in infants may be caused by the multiple participation of both genetic and environmental factors.

Type classification based on inpatient ratio according to major diagnosis category of group III in the diagnosis procedure combination system

Nippon Eiseigaku Zasshi, 71, 149–162 (2016)

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Objectives: The target was 1,283 hospitals in group III of medical institutions. Using the Diagnosis Procedure Combination (DPC) data and the inpatient ratio according to the major diagnosis category (MDC), group III hospitals were clarified on the basis of the Mahalanobis distance (D^2) calculated using the Mahalanobis Taguchi (MT) method.

Methods: About 50 hospitals with the top inpatient ratio in each MDC and 1,233 other hospitals. The following were examined.

- 1) Significant difference between DPC data and inpatient ratio.
- 2) Distribution of D^2 .
- 3) Classification based on the distribution of D^2 .

Results: The top hospital was small scale, and there were few cases of emergency hospitalization, operation, general anesthesia induction, and chemotherapy. The number of cases involving the respiratory system, circulatory system, digestive and hepatobiliary systems, metabolic system, musculoskeletal system, kidney and urinary tracts was high with an inpatient ratio of more than 90 %.

On the bases of the distribution of D^2 , the hospitals were classified into four types. Group one consisted of 213 special hospitals that showed high inpatient ratios of cases involving the nervous system, respiratory system, digestive and hepatobiliary systems, musculoskeletal system, injuries and burns. Group two consisted of 195 associate special hospitals that showed high inpatient ratios of cases involving the circulatory organ, metabolic system, kidney and urinary tracts, pediatric diseases, and mental diseases. Group three consisted of 223 hospitals for the seven remaining diseases. Group four consisted of 652 hospitals showing other distributions of D^2 .

Conclusion: Classification of hospitals to four types was possible by the MT method depending on the medical treatment results.

Quality of life and its related factors in female postoperative breast cancer patients younger than 50 years

Nippon Eiseigaku Zasshi, 71, 163–172 (2016)

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Objectives: Few reports on breast cancer patients have focused on the younger ages at which breast cancer morbidity increases. The purpose of this study was to clarify the quality of life (QOL) and its related factors in female postoperative breast cancer patients younger than 50 years.

Methods: A total of 166 (valid rate 57.8 %) female postoperative patients were administered a questionnaire anonymously answered at their outpatient clinics specializing in breast cancer. QOL was evaluated using the QOL Questionnaire for Cancer Patients Treated with Anticancer Drugs (QOL-ACD). Multiple regression analysis of 13 items that showed a significant difference in the total points of QOL-ACD was performed with categories as independent variables and the total points of QOL-ACD as a dependent variable.

Results: The mean age of the subjects was 43.6 years. The median total points of QOL-ACD was 88. The multiple regression analysis showed the following seven factors were related to the total points of QOL-ACD: ability to fulfill roles in the family, no symptoms, no financial difficulties, requiring no support at hospital visit, the use of many kinds of stress-coping methods, taking no medication for diseases other than cancer, and not unsatisfied with the scars and shape of breasts.

Conclusion: The QOL of young, postoperative breast cancer patients was lower than that of the patient groups that included older subjects. To improve their QOL, it is important to provide social support for their family roles and economic situations, in addition to physical and psychological support based on the characteristics of the disease.

Role of the occupational physician in corporate management of health risks: an important aspect of corporate social responsibility (CSR)

Nippon Eiseigaku Zasshi, 71, 173–180 (2016)

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Introduction: There are various risks involved in corporate activities conducted both within and outside the corporation. Among these, health risks are very important and should be managed effectively as an integral part of corporate social responsibility (CSR). A corporation is responsible for health impairments caused by its activities and suffers great moral and economic loss when they occur. It is essential that corporate management takes proper preventive measures against such risks. Occupational physicians possess substantial knowledge of health risks in corporations. In this study, we examine the role of occupational physicians in the management of corporate health risks. **Method:** Information was obtained from articles in print and on the Internet.

Results and discussion: Health risks due to corporate activities involve not only the employees of the corporation but also individuals outside the corporation. Each corporation should effectively use available resources to manage health risks. Occupational physicians are one such valuable resource. However, many corporations do not actively involve occupational physicians in health risk management. According to a current Japanese law, health risks for employees in corporations are managed by occupational physicians, but in general, health risks outside corporations are not. The 1984 Bhopal Disaster in

India is an example in which physicians of the corporation were only minimally, if at all, involved in assessing and treating impaired health outside the corporation. The role of occupational physicians should be expanded to include management of health risks outside the corporation. This places a greater burden on the physicians and they must make the effort to train in many academic fields in order to better understand the entire context of health risks due to corporate activities. Some occupational physicians may be hesitant to take on such added responsibilities. Some corporations may not recognize the overall health risks due to its activities and do not understand the merit of occupational physicians working with the management to decrease health risks. However, an occupational physician is an important member of the corporation, so he/she must be involved in the management of health risks not only within the corporation itself, but also outside the corporation from the viewpoint of CSR. Effective management of health risks due to corporate activities should be widely discussed among occupational physicians, business entrepreneurs and managers of the division in charge of corporate health risk management as well as stakeholders. The authors propose expanding the role of occupational physicians to actively manage health risks not only inside but also outside the corporations.