Assessment of physical functional status among patients with hip osteoarthritis

Background*:* Musculoskeletal disorders are conditions that can affect patient muscles, bones, and joints. It causes pain, discomfort and limited range of motion that interferes with everyday activities, such as walking, climbing stair and have trouble completing the work. Musculoskeletal disorders as osteoarthritis (OA) is known to be a progressive a synovial joint disorder. Hip osteoarthritis symptoms include morning stiffness, reduced range of hip joint movement, crepitation, damage of the hip cartilage, fatigue, sleep disturbance and also experience social isolation, loss of work and financial difficulty. Physical functional status assessment is the most important issue in nursing care for patients with osteoarthritis. The nurse understanding of the disease process and symptoms pattern is critical to the plan of care. A careful initial assessment of the individual patient's health status, concerns, personal concepts and resources that help for reach to health care facilities, as well as additional information about the patient's daily routine, home environment, level of family support, and work status. All of these can enable the nurse to provide a program of activities that can optimally reduce pain and promote maximal function. The nurse is in a key position to assess the patients' problems and needs. Comprehensive physical functional assessment helps the nurse to determine the effects of disease on patient health condition. Therefore, the physical functional status assessment must be an integral part in the assessment of the osteoarthritic patients. This provides the nurse and patients with an understanding of osteoarthritis disease. It is hoped that the result of this study will provide nurses with evidenced data to be worked at assessment and rehabilitative level targeted to improving the physical functional status of the osteoarthritis patients, increased access to care, cost savings and empowerment for life activities change. It is also hoped that this research will pave the way for future research collaboration between nurses and other healthcare providers i.e. physicians and physiotherapist.

The aim of the current study: was to assess physical functional status among patients with hip osteoarthritis.

Research Question: To fulfill the aim of the current study the following research question was formulated: What is the physical functional status among patients with hip osteoarthritis?

Design: The descriptive study design was utilized in this study; it is the second broad class of non-experimental studies.

Setting: The current study was carried out at Fayoum university hospitals in Fayoum governorate, including the following departments: (a) Orthopedic outpatient, rheumatoid clinic, and; (b) Orthopedic inpatients ward.

Subjects: A convenient purposive sample of 100 adult male and female conscious patients diagnosed with hip osteoarthritis who accept to participate in the study were recruited for the current study. Inclusion criteria: patients diagnosed with hip osteoarthritis for more than six months, age ranged from 20 years to above 60 years old, the sample was collected over an anticipated period of six months. Exclusion criteria: patients on a rehabilitation program and who

have medical disorders as mental deterioration, dementia or delirium, neurovascular disorders, osteoporosis, metabolic disorders as diabetes, hyperthyroidism and parathyroid dysfunction were excluded from this study.

Tools: The investigators used two tools to gather data pertinent to the study as follows:

Structured Interview Questionnaire that was developed by the researcher: it was included two parts: (a) Demographic characteristics as age, gender, level of education, marital status, occupation and place of residence; (b) Medical background variables to assess patient medical condition that will include items such as history of present problem, chief complaint, past medical / surgical history, present treatment and body mass index.

Western Ontario McMaster Universities Osteoarthritis Index (WOMAC): Developed by Emeritus Professor Nicholas Bellamy in 1982. It is a valid, reliable and responsive measure of outcome and has been used in diverse clinical and interventional environments. The (WOMAC) consists of 24 items divided into three subscales: (a) Pain (5 items): during walking, upstairs, at night, at rest, and heavy lifting, (b) Stiffness (2 items): stiffness after awakening first time at the morning and later in the same day, (c) Physical Function (17 items): downstairs, upstairs, rising from sitting position, standing, bending on floor, walking on flat surface, getting in / out of a car, going to shopping, putting on / taking off socks, lying in bed, rising from bed, getting in / out of bath, sitting, getting on / off toilet, heavy household duties and light household duties.

WOMAC scoring system: All items of the three domains were measured on a four points Likert scale version. Uses the following scale of difficulty for all items: 0 to 4, zero indicates no difficulty, one indicates mild difficulty, two indicate moderate difficulty, three indicate severe difficulty and four indicate extreme difficulty. With lower scores indicating lower levels of symptoms or physical disability. These correspond to an ordinal scale of 0-4. The scores are summed for items in each subscale, with possible ranges as follows: pain = 0 – 20, stiffness = 0 – 8, physical function = 0 – 68, Total score 96. Finally, the total score of all subscales was recorded to facilitate interpretation [19].

Results:

Demographic characteristics: Almost half of patients were mainly male, married (56% and 95 %) respectively with the age between 20 and 80 with mean of (50.67 ± 11.14) years. In addition, less than half of the study subjects (44 %) can read and write. Regarding occupation (43%) were housewives, while (39 %) were laborers. Almost three quarters of the sample were living in rural areas (79%).

Medical Background related Variables: (82%) of study subjects had gradual disease onset with disease duration, more than 1 year with a mean of (1.88 ± 0.32) among (88%) of study subjects. While (82%) of study subjects had no past history, (8%) of study subjects have rheumatoid arthritis as a past medical history. Average value of the BMI was (28.12 ± 4.04) kg/m² among (71%) of study subjects. In relation to current complain, all subject had more than one complain such as severe pain in hip joint, inability of movements, hip joint stiffness, numbness and hip joint crepitation (95%, 71%, 62%, 51%, 7%) respectively. Regarding to treatment before hospitalization (65%) of the study

subjects were treated with medications only while minority of them have different treatments, only (4%) of them have no treatments.

WOMAC physical function assessment tool

Degree of pain is higher on stair climbing, weight bearing then on walking with mean score of (3.85 ± .47, 3.74 ± .71, 3.64 ± .65) respectively, while low on the rest with mean sore (1.94 ± .87).

In relation to stiffness, mean score of stiffness occurring later on the day more than morning stiffness (2.67 ± 1.23, 2.44 ± .93) respectively.

Regarding physical function dimensions: high mean score among study subjects during ascending stairs, heavy domestic duties, putting on socks, getting in/out of car, taking off socks, getting in/out toilet, getting in/out of bath, and going shopping (3.90 ± .36, 3.86 ± .42, 3.64 ± .78, 3.64 ± .81, 3.57 ± .81, 3.48 ± .88, 3.41 ± .69, and 3.34 ± .81) respectively, while mean score was low in light domestic duties (1.91 ± 1.12).

It was apparent that there was statistical significant correlation between total pain score and total physical function score with (r = .416). Also between total stiffness score and total physical function score with (r = .364).

There is statistical significance correlation between age and total physical function score with (r = .244). In relation to disease onset showed that there was highly statistical significant with total pain score (r = -.334-). It also illustrate that there was statistical significant between body mass index of the study subjects and total pain score (r= .200)

Conclusion:

Based on findings, the current study illustrates those high scores of difficulties in different day to day physical function activities that effect on the patient life and work performance. Most hip osteoarthritis patients suffer from great changes in their activities of daily living, and the majority found to have some kind of functional limitation, such as stiffness in the later on the day, reduced joint motion, activities regarding ascending stairs, heavy domestic duties, climbing stairs up, standing, walking, squatting, and kneeling. Thus, hip osteoarthritis becomes a very common cause for disabilities, and it is considered a great social problem, as it leads to a higher risk for hospitalization and to high costs to health care services. Studying functional ability is required to support patients' independence, and it has been rising as key to evaluating the health status of patients. Besides that, the inclusion of those patients in rehabilitation programs in order to contribute to the promotion of health among patients with hip osteoarthritis.

Recommendations:

In the light of the current result, the following recommendations are suggested:

Recommendations related to patients: Establish a center for the patient education, especially for hip osteoarthritis. Rehabilitation program should become an integrated part of the total management of hip osteoarthritis patient.

Recommendations for medical team and hospital administrators: (1) Update knowledge of nurses working in orthopedics departments through attending in services training program, seminar, workshop and scientific conference regarding application of evidence based practice while dealing with patients. (2) Nursing curricula should integrate the concept of comprehensive assessment to determine accurate nursing

diagnosis and develop nursing care plan, (3) Nurses and doctors must coordinate their efforts in determining patient's needs and problems, prevention and early detection of hip osteoarthritis patients and helping them to prevent and manage difficulties.

Recommendations for further researches: Replication of the study on a larger probability sample selected from different geographical areas in Egypt is recommended to obtain more generalizable data.