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IMPACT OF A PHARMACEUTICAL CARE SERVICE OFFERED TO OSTEOPOROSIS PATIENTS WITHIN AN AMBULATORY SETTING

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ABSTRACT
The objectives of the study were to evaluate the impact of a newly developed pharmaceutical care services directed to osteoporosis patients attending an out-patient setting. A total of 74 patients participated in the study and were randomly divided into two equal groups, Group A and Group B. The study was carried out over three phases. In phase 1, Group A patients were assessed and offered a pharmaceutical care session. Group B patients were assessed but no pharmaceutical care session was delivered. At phase 2, group A patients were re- assessed. Group B patients were re-assessed a second time and a pharmaceutical care session was offered to Group B patients. At phase 3 both groups were re-assessed a third time. The newly developed individualized pharmaceutical care service provided by the pharmacist led to an improved quality of life as measured by the health-related quality of life questionnaires.

KEYWORDS: pharmaceutical care, quality of life, osteoporosis, drug therapy problems, pharmacist contribution.

INTRODUCTION
Osteoporosis is a progressive metabolic bone disease that decreases bone mineral density, with deterioration of bone structure. Skeletal weakness leads to fractures with minor or inapparent trauma, particularly in the thoracic and lumbar spine, wrist, and hip. Diagnosis is by dual-energy x-ray absorptiometry or by confirmation of a fragility fracture. Prevention and treatment involve risk factor modification, calcium and vitamin D supplements, exercises to maximize bone and muscle strength, improve balance, and minimize the risk of falls, and drug therapy to preserve bone mass or stimulate new bone formation.

More than 95% of osteoporosis in women and about 80% in men is primary and therefore without an identifiable underlying cause. Most cases occur in postmenopausal women and older men. However, certain conditions may accelerate bone loss in patients with primary osteoporosis. Gonadal insufficiency is an important factor in both men and women; other factors include decreased calcium intake, low vitamin D levels and certain drugs. Some patients have an inadequate intake of calcium during the bone growth years of adolescence and thus never achieve peak bone mass.[1,2,3]

Patients with osteoporosis are asymptomatic unless a fracture has occurred. Nonvertebral fractures are typically symptomatic, but about two thirds of vertebral compression fractures are asymptomatic. A vertebral compression fracture that is symptomatic begins with acute onset of pain that usually does not radiate, is aggravated by weight bearing, may be accompanied by point spinal tenderness, and typically begins to subside in 1 week. Residual pain may last for months or be constant, in which case additional fractures or underlying spine disorders should be suspected.

Multiple thoracic compression fractures eventually cause dorsal kyphosis, with exaggerated cervical lordosis. Abnormal stress on the spinal muscles and ligaments may cause chronic, dull, aching pain, particularly in the lower back. Patients may have shortness of breath due to the reduced intrathoracic volume and/or early satiety due to the compression of the abdominal cavity as the rib cage approaches the pelvis.[4,5,6]

The current management of osteoporosis therefore focuses on early aggressive treatment using disease modifying agents and biological agents early on to slow the disease progression if not to stop disease progression and afford remission. Patient safety is a major feature in management decisions. The increasing effectiveness of drug therapy in current disease management is brought about by new classes of agents acting at a fundamental inflammatory level ('biologicals') and by earlier more aggressive treatment to markedly reduce the rate of progression if not stop disease progression in certain instances. Treatment must be individualized, and patients helped to be actively involved in their own management and monitoring for effectiveness and safety. This could be achieved through a pharmaceutical care service.[7,8,9]

The context above raises questions about how to achieve optimal care within a multidisciplinary setting in which specialist pharmacists are providing new services requiring networking arrangements to underpin the quality of care as the patient moves between clinical settings, home, hospital, and clinic. The pharmacist input has been developing over the past seven years via inpatient services. The aim of this study was to evaluate the impact of a newly developed pharmaceutical care service within a multidisciplinary outpatients service.[10,11,12,13]

MATERIALS AND METHODS

A pharmaceutical care consultation led to the identification of pharmaceutical care issues. The session focused on determining whether all patient's drug therapy was the most appropriate, safe, effective, and conveniently available for the patient During the pharmaceutical care consultation, the clinical pharmacist identified pharmaceutical care issues. Actual drug therapy problems are problems which are present and hence need to be resolved immediately whereas potential drug therapy problems are problems which are not yet present, but which might arise in future, and which could be avoided if the correct action is taken. The category non-drug therapy problems were added to the list to accommodate pharmaceutical care issues which were not directly related to drug therapy but relied on patient's perception, information on treatment or the need of other help from other health care professionals. Actions (checks or changes) needed to resolve each care issue problem were documented in the care plan within the patient's medical file.

RESULTS AND DISCUSSION

For group A patients the results indicate that there was an improvement in the quality of life of the patients reflected by a decrease in the health assessment questionnaire score which occurred following the pharmacist's intervention during the pharmaceutical intervention at Phase 1. This improvement in the quality of life of the patients increased over time (Phase 3) meaning that the impact of the pharmacist's intervention through individualized pharmaceutical care showed a further improvement in the quality of life of patients on a longer term.

Group B patients registered a statistically significant improvement in their health assessment questionnaire score following a pharmaceutical care session which mirrors the fact that pharmacist intervention improves quality of life. The impact of the pharmacist's contribution after 11 months resulted in an improvement of quality of life. However, for some domains namely physical function and role emotion this impact may take longer to result in an improvement. The results from Group B patients mirrored those of Group A.

CONCLUSION

Pharmaceutical care services offered within out-patient clinic multidisciplinary team can help to improve the patients' quality of life. This study has confirmed the positive impact of the pharmacist intervention within this multidisciplinary team on the patients' quality attending the out-patient clinic. This has been confirmed in other studies in other areas such as in the management of cardiovascular patients and diabetes patients18-23. Processes to identify patients who would require pharmaceutical care services within the setting may need to be identified in the scenario that the pharmaceutical care services are offered to all patients attending the clinic. Research to standardize the pharmaceutical care services is now being undertaken to ensure a harmonized evidence-based quality service.

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