A Cross-Sectional Analysis of the Prevalence of Undertreatment of Nonpain Symptoms and Factors Associated With Undertreatment in Older Nursing Home Hospice/Palliative Care Patients

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ABSTRACT

Background: Approximately 25% of all US deaths occur in the long-term care setting, and this figure is projected to rise to 40% by the year 2040. Currently, there is limited information on nonpain symptoms and their appropriate treatment in this setting at the end of life.

Objective: This study evaluated the prevalence of undertreatment of nonpain symptoms and factors associated with undertreatment in older nursing home hospice/palliative care patients.

Methods: This study used a cross-sectional sample of older (≥65 years) hospice/palliative care patients to represent all patients from the 2004 National Nursing Home Survey (NNHS) funded by the Centers for Disease Control and Prevention. Nonpain symptoms were determined from facility staff, who used the medical records to answer questions about the residents. Data on medication use were derived from medication administration records. *Undertreatment* was defined as the omission of a necessary medication for a specific nonpain symptom and was evaluated as a dichotomous variable (yes = the nonpain symptom was not treated with a medication; no = the nonpain symptom was treated with a medication). Cross-sectional bivariate analyses were conducted using χ^2 and regression coefficient tests to determine factors potentially associated with undertreatment of nonpain symptoms.

Results: The cross-sectional sample included 303 older nursing home hospice/palliative care patients from among the 33,413 (weighted) patients from the 2004 NNHS. Overall, most of the patients were white (91.4% [277/303]) and female (71.9% [218/303]), and nearly half were aged ≥85 years (47.9% [145/303]). One or more nonpain symptoms occurred in 82 patients (22.0% weighted). The most common nonpain symptoms (weighted percentages) were constipation/fecal impaction in 35 patients (8.8%), cough in 34 patients (9.2%), nausea/vomiting in 26 patients (7.2%), fever in 11 patients (3.1%), and diarrhea in 9 patients (1.9%). Medication undertreatment of any of the above symptoms was seen in 47 of 82 patients (60.0% weighted), ranging from a low of 26.4% for constipation/fecal impaction to a high of 88.0% for nausea/vomiting. Undertreated patients had significantly more problems with

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bed mobility (n [weighted %], 43 [92.3%] vs 21 [67.2%]; $P = 0.013$), mood (21 [44.7%] vs 7 [19.7%]; $P = 0.017$), and pressure ulcers (12 [25.7%] vs 2 [6.1%]; $P = 0.023$) than did treated patients. The undertreated group also had a significantly greater number of secondary diagnoses (weighted mean [SD], 6.5 [0.7] vs 5.2 [0.5]; $P = 0.004$) but had a shorter length of stay in hospice/palliative care (120.5 [20.1] vs 219.4 [51.8] days; $P < 0.001$) or in the nursing home (552.0 [96.5] vs 1285.4 [268.3] days; $P = 0.001$).

Conclusions: The prevalence of nonpain symptoms was low (22.0% weighted) in older nursing home hospice/palliative care patients. However, medication undertreatment of nonpain symptoms was seen in more than half of these patients. Future quality-improvement initiatives for nursing home hospice/palliative care patients are needed beyond the management of pain symptoms. (*Am J Geriatr Pharmacother*. 2010;8:225–232)

Key words: long-term care, nursing homes, palliative care, hospice care, aged.

INTRODUCTION

According to the US Census Bureau, with the aging of the "baby boom" generation and the linear increase in life expectancy over the past century, older adults are the fastest-growing segment of the population.[1] In 2002, individuals aged ≥65 years made up 12.5% of the population. By the year 2050, however, 20% of the population is expected to be aged ≥65 years. As people age, they will develop chronic diseases,[2,3] and many will enter nursing home facilities for custodial and, eventually, end-of-life care.[4–6] In 1994, ~25% of Americans who died were in long-term care facilities, and this proportion is projected to increase to 40% by the year 2040.[6]

Studies have shown that we have very little knowledge about the dying experience of older adults[7,8] and even less empiric evidence regarding how palliative or hospice care is delivered in the nursing home setting.[9] One concern is the potential underutilization of medications (ie, omission of necessary medication for a diagnosed condition) in nursing home hospice/palliative care patients.[10] One large observational study reported that, on average, 50% of cancer patients who die in US nursing homes experience severe pain.[3] Hospice enrollment improves pain assessment and management; however, treatment of pain is woefully inadequate, even in this patient population.[11,12] A cross-sectional study of older adults (n = 107) in nursing homes reported that there was no statistically significant difference between hospice and nonhospice residents in the prescription and administration of pain medications.[13]

Currently, at least 2 guidelines exist that can be used for the pharmacologic treatment of nonpain symptoms.[14,15] Unfortunately, although research has been conducted on the recognition and management of pain in hospice care in nursing home settings,[11–13] no such studies have been conducted regarding common nonpain symptoms occurring at the end of life, such as constipation/fecal impaction, cough, nausea/vomiting, fever, and diarrhea. The objective of this study was to evaluate the prevalence of undertreatment of nonpain symptoms and factors associated with undertreatment in older nursing home hospice/palliative care patients.

METHODS

Study Design, Source of Data, and Sample

This cross-sectional study used information derived from the resident file of the 2004 National Nursing Home Survey (NNHS).[16,17] The NNHS was conducted by the National Center for Health Statistics (NCHS) of the Centers for Disease Control and Prevention (CDC). The present study sample included patients aged ≥65 years who were assigned to a bed on a hospice specialty unit or were receiving services from a special program for hospice, palliative, or end-of-life care. The nursing home staff was interviewed to gather this information for all 13,507 patients in the 2004 NNHS. An example of an affirmative response (ie, hospice and palliative care established in a nursing home, as opposed to a different setting) would be someone who was receiving hospice/palliative care at home and then was transferred to a nursing home to continue this care.

This study was approved by the University of Pittsburgh institutional review board.

Data Collection and Management

The 2004 NNHS achieved a 78% response rate that included 13,507 patients from 1174 nursing homes, representing a population of ~1.5 million patients. For the present study, a representative sample of nursing homes was selected from a total of ~18,000 nursing home facilities in the United States. The nursing homes were selected using systematic sampling with a probability proportional to bed size. The data were collected from a total of 1500 US nursing homes and included up to 12 current patients per nursing home.

Patient data were collected on-site in the nursing homes by computer-assisted interviews of designated staff members familiar with the specific sampled patients and their care. The designated staff members