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**Knowledge of Aging and Late Life Depression among a Sample of
Non-Physician Clinicians: A Preliminary Analysis**

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ABSTRACT

The purpose of this study was to examine knowledge of late life depression, knowledge of the general aging process, and attitudes towards aging among non-physician clinicians in primary care. Seventy-five physician assistants (n = 36) and nurse practitioners (n = 39) who currently work in a primary care setting participated in the study and completed the following measures: Late Life Depression Quiz (LLDQ; Pratt et al., 1992), Reaction to Ageing Questionnaire (RAQ; Gething, 1994), and the Facts on Aging Quiz-2 (FAQ-2; Palmore, 1988). Results indicated that participants on average knew 82% of the material related to late life depression (LLDQ), 47% of the material related to knowledge of aging (FAQ-2), and had neutral attitudes towards aging on the RAQ (M = 104.77). The results from this study provide information on the importance of gerontological coursework and clinical exposure during graduate clinical training to better address the mental health needs of aging medical patients.

Keywords: primary care, depression, aging, older adults, gerontology

INTRODUCTION

Depression affects 6-10% of older adults who visit a primary care physician (PCP) with 20-40% of those individuals presenting with a comorbidity such as diabetes mellitus, cardiovascular disease, or a neurodegenerative disorder (Reynolds, Cruz, Te, & Rollman, 2007). Untreated depression in older adults can have a negative impact on their overall health status leading to an increased risk of developing diseases such as coronary heart disease and other major chronic diseases (Schwenk, 2002). During 2001-2002, older adults made approximately 9.8 million visits to a health care provider for depression and about 66% of those visits were to PCPs (Harman, Veazie, & Lyness, 2006; as cited in Reynolds, Cruz, Te, & Rollman, 2007). Thus, it is important for PCPs to be able to accurately identify depressive symptoms in the elderly. Although many older adults make frequent visits to a PCP, depression is often misdiagnosed for different reasons (Zylstra & Steitz, 2000). One reason for this is because "...many physical, mental, and emotional changes commonly associated with depression are also associated with the normal aging process" (p. 30). A second reason for the misdiagnosis of depression in older adults is that this population may often "... refuse to admit an illness like depression because it can be socially stigmatizing" (p. 30). A third reason is because older adults who do seek treatment often receive insufficient care (Zylstra & Steitz, 2000). Traditionally, PCPs have done a poor job identifying the risk factors and symptoms in the older adult population (Harman et al., 2002; Saur et al., 2002; Schwenk; Wagenaar, Mickus, Gaumer, & Colenda, 2002; Zylstra & Steitz, 2000).

In addition to the under diagnosis in primary care, shortages of PCPs are on the rise (Wilson, 2008). With the increasing amounts of aging patients visiting a PCP, patient care could suffer as a result of the physician shortages. In order to manage the PCP shortage, there has been

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an increase in physician assistants (PA) as well as nurse practitioners (NP) in the primary care setting (PAs and NPs are also known as non-physician clinicians). The number of PAs has risen since the 1970s to approximately 69,500 in 2007 and the approximately 140,000 NPs in 2006 (Wilson, 2008). Although PAs and NPs have similar duties, training is somewhat different. Physician assistants "...have prior health care experience and are educated in intensive medical programs designed to complement physician training" (p. 597). On the other hand, NPs "...are registered nurses and they have completed graduate-level education and advanced clinical training" (p. 597). Both practitioners are required to be board certified and have a state license to practice. The amount of education in both programs is about half of what is required for PCPs.

Traditionally, PAs and NPs have worked in underserved settings where there was a paucity of physicians, but recently, PAs and NPs have increased in metropolitan areas (Wilson, 2008). In addition to working private practice clinics, these practitioners also work in medical centers, hospitals, and specialty care centers. In terms of prescribing privileges, under the supervision of a physician, PAs and NPs have gained this authority throughout the United States (although specific rules vary from state to state; Wilson, 2008).

Because many primary care clinics are utilizing PAs and NPs, patient satisfaction may be of concern. A study compared the satisfaction levels of 146,880 randomly sampled Medicare recipients between PAs, NPs, and physicians in primary care (Wilson, 2008). The results indicated that there were similar satisfaction levels between all three practitioners which suggests that all three providers are seen similarly by patients in primary care. In terms of the quality of care provided by non-physician clinicians, Reeves et al. (2005; as cited in Wilson, 2008) found that the current literature was inconclusive in determining if PAs and NPs "...can produce equally high-quality care as that of primary care physicians and equally good health outcomes

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for patients” (p. 599). Cooper and Stoflet (2004; as cited in Wilson, 2008) found that PAs and NPs can provide care that is equal to a physician when examining “...uncomplicated levels of care or care that was provided under the umbrella of physicians...” (p. 599). Overall, the extent to which PAs and NPs should be accountable for patient care is debatable because of the small amount of evidence. In order for the primary care setting to prepare for the increase in clinical responsibilities of non-physician clinicians, training programs will need to incorporate comprehensive patient care in order meet the demands of the current PCP undersupply.

What about late life depression in primary care? Non-physician clinicians in primary care are in an ideal position to improve the detection and referral of late life depression. It is important to examine the knowledge and attitudes towards late life depression in this clinician population for two reasons: 1) much of the gerontology training initiatives have been focused on primary care physicians; 2) the primary care setting is usually the first point of health care access for older adults (Butler & Quayle, 2007). Research in this area is scarce, especially within the non-physician clinician population. The purpose of this study was to examine primary care non-physicians’ knowledge of late life depression as well as knowledge of the general aging process. We also examined: age of practitioner, years of practice, quantity and quality of contact with older adults and elderly patients, and attitudes toward aging. The specific questions being addressed in this study include:

- 1) What is the current knowledge level of primary care non-physician clinicians regarding late life depression? 2) Is non-physician clinicians’ knowledge of late life depression related to knowledge of aging and/or attitudes toward personal aging?

METHOD

Participants and Recruitment

The study consisted of 75 physician assistants ($n = 36$) and nurse practitioners ($n = 39$) currently working in a primary care setting. There were 60 females and 15 males in the study population (PA: 14 males, 22 females; NP: 1 male, 38 females). The physician assistant participants were solicited for their participation during the 2009 Missouri Academy of Physician Assistant (MAPA) PA conference on July 16 – 19 in Branson, MO. The nurse practitioner participants were solicited for their participation during the 2009 Advanced Practice Nurses of the Ozarks (APNO) Annual Conference on October 1-3 in Branson, Missouri. Booths were set up at each of these conferences in which the participants were able to sit and complete the questionnaires or take the questionnaires with them and bring them back to the booth at a later time during the conference.

Due to the low amount of participation at the MAPA conference, a drawing for a \$50.00 Wal-Mart gift card took place at the APNO conference. Individuals who completed the surveys were placed in a drawing that took place at the end of the final session on Friday, October 2, 2009 and the gift card was mailed to the winner the following business day.

Instruments

Late life depression quiz (LLDQ). The purpose of the Late Life Depression Quiz (Pratt, Wilson, Benthin, & Schmall, 1992) is to assess knowledge of late life depression. The questionnaire consists of 12 items using a “true,” “false,” and “don’t know” response format. The total number of correct items measures knowledge of late life depression and the total number of incorrect items measures late life depression misconceptions. The total number of items answered with the response ‘don’t know’ measures the level of uncertainty towards

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knowledge of late life depression. The reliability of this instrument is .85 (Pratt, Wilson, Benthin, & Schmall).

Reactions to ageing questionnaire (RAQ). The purpose of the RAQ is to measure “personal reactions towards aging” and these reactions have been strongly correlated to “attitudes towards older people” (Mandy, Lucas, & Hodgson, 2007, p. 3). The questionnaire consists of 27 items using a 6-point Likert scale with scores ranging from 27 to 162 with higher scores being associated with positive attitudes. The RAQ score has 3 attitude types: gerophobe (negative attitude towards aging (27-79), neutral (80-119), and gerophile (positive attitudes towards aging) (120+). This scale has been established as a reliable and “valid index of personal reactions towards ageing” and is well-known internationally and cited considerably within the literature (Gething, 1994; Gething et al., 2004; Mandy, Lucas, & Hodgson, 2007, p. 3).

The facts on aging quiz-2 (FAQ-2). The purpose of the FAQ-2 is to assess the knowledge of aging (Palmore, 1988). The questionnaire consists of 25 items using a “true,” “false,” and “don’t know” response format. In order to measure knowledge, the percentage of correct responses will be used to assess the overall amount of knowledge. Prior research has determined that the FAQ-2 is a reliable and valid measure for assessing aging knowledge (Duerson, Thomas, Chang, & Stevens, 1992; Palmore, 1988).

Demographic Information

The following demographic information was collected: age, gender, race, number of years in practice, and number of gerontology courses. Quality and quantity of personal and professional contact with older adults was assessed as well. Quantity of contact was measured using a 7-point scale with “...1 indicating little to no contact and 7 indicating almost daily contact” (Steitz & Verner, 1987; as cited in Steitz & Verner, 2000, p. 31). Quality of contact

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(Steitz & Verner, 1987; as cited in Steitz & Verner, 2000) was measured using a 5-point scale (1 = low quality, 5 = high quality).

Statistical Analysis

Pearson's correlation was used to examine the following:

- Knowledge of late life depression (% correct) and attitudes toward aging;
- Knowledge of aging (% correct) and knowledge of late life depression (% correct);
- Attitudes toward aging and knowledge of aging (% correct).

The level of significance was set at 0.05.

RESULTS

Regarding late life depression and aging, primary care non-physician clinicians averaged 82% ($M = 9.8$, $SD = 1.3$) correct on the LLDQ and 47% ($M = 11.8$, $SD = 2.9$) correct on the FAQ-2. Physician assistants averaged 80% ($M = 9.6$, $SD = 1.4$) correct on the LLDQ and 47% ($M = 11.7$, $SD = 2.6$) correct on the FAQ-2. Nurse practitioners averaged 83% ($M = 10.0$, $SD = 1.2$) correct on the LLDQ and 48% ($M = 11.9$, $SD = 3.2$) correct on the FAQ-2. In terms of current attitudes toward aging, all non-physician clinicians were classified in the "neutral" category ($M = 104.8$, $SD = 20.0$). Physician assistants ($M = 102.6$, $SD = 21.3$) and NPs ($M = 106.8$, $SD = 18.8$) were also classified in the "neutral" category. Participant demographic information can be found in Table 1.

The second study question addressed the association between knowledge of late life depression and aging as well as knowledge of late life depression and attitudes toward personal aging. Significant findings were found with PAs. As knowledge of late life depression increased, knowledge of aging also increased ($r = .36$, $p = .03$). No other significant findings were found among these three variables.

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Table 1

Participant Demographic Information

Profession	PA(SD)	NP(SD)	Total(SD)
Age (years)	45.7(11.1)	51.9(6.7)	48.9(9.6)
# years in practice	12.7(9.7)	10.6(7.6)	11.6(8.6)
# gero courses	1.8(1.7)	1.7(1.2)	1.8(1.4)
Quantity-prof	5.9(1.5)	5.8(1.6)	5.6(1.6)
Quantity-per	5.7(1.7)	5.5(1.4)	5.6(1.6)
Quality-prof	4.5(.6)	4.3(.9)	4.4(.8)
Quality-per	4.4(.7)	4.4(.8)	4.4(.8)

Note. Quantity-prof = quantity of professional contact; quantity-per = quantity of personal contact; quality-prof = quality of professional contact; quality-per = quality of personal contact; gero = gerontology; PA = physician assistant; NP = nurse practitioner.

Additional correlational analyses were performed and it was found that age was not significantly associated with knowledge of late life depression ($r = .07, p = .58$), knowledge of aging ($r = .20, p = .09$), or attitudes toward aging ($r = .21, p = .07$) among all non-physician clinicians. Years in clinical practice was not significantly related to knowledge of late life depression ($r = .15, p = .20$), knowledge of aging ($r = .21, p = .07$), or attitudes toward aging ($r = .09, p = .42$), but the number of aging-related courses ($r = .27, p = .02$) was positively associated with positive attitudes toward aging among all non-physician clinicians. Lastly, quality and quantity of personal and professional contact with older adults was not significantly related to knowledge of late life depression, knowledge of aging, and attitudes toward aging (Table 2).

Table 2

Summary of Correlations for Quantity and Quality of Professional and Personal Contact

Variables	Quantity-prof	Quantity-per	Quality-prof	Quality-per
LLDQ	.03	-.02	.10	.04
FAQ-2	-.07	-.12	.10	.17
RAQ	.03	.02	-.08	-.02

Note. Quantity-prof = quantity of professional contact; quantity-per = quantity of personal contact; quality-prof = quality of professional contact; quality-per = quality of personal contact; LLDQ = Late Life Depression Quiz; FAQ-2 = Facts of Aging Quiz-2; RAQ = Reactions to Ageing Questionnaire.

DISCUSSION

As a whole, the non-physician clinicians scored high (82%) concerning knowledge of late life depression. The score in this study is similar to the physician score (80%) in the Zylstra and Steitz (2000) study. Age was not significantly related to knowledge of late life depression, knowledge of aging, or attitudes toward aging. This finding is consistent with past research regarding clinician knowledge of the aging process (Belgrave et al., 1982; Holtzman et al., 1981; as cited in Zylstra & Steitz, 2000). Although years in practice was not significantly associated with knowledge of late life depression, knowledge of aging and the number of aging-related courses seemed to have an influence on positive attitudes toward aging. Regarding personal and professional contact, contact with older adults and older patients was not associated with knowledge of late life depression, knowledge of aging, or attitudes toward aging. Although contrary to the Zylstra and Steitz (2000) study, this finding is consistent with previous studies (Dail & Johnson, 1985; Perrotta et al., 1981; as cited in Zylstra & Steitz, 2000). Past research indicated the importance of the distinction between personal and professional contact with older adults. This was due to the increased occurrence of contact which was thought to dispel misconceptions and improve the quality of contact; this would also influence accurate knowledge of aging (Knox, Gekoski, & Johnson, 1986; Steitz & Verner, 1987; as cited in Zylstra & Steitz, 2000). There was no indication of these findings in the current study.

The finding which stated as knowledge of late life depression increased, knowledge of aging increased, is not consistent with past research. Prior research indicated that negative attitudes toward aging was associated with greater misconceptions (less knowledge) regarding late life depression (Rapp & Davis, 1989; as cited in Zylstra & Steitz, 2000). Given that physician assistants and nurse practitioners appear to have adequate knowledge regarding late

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life depression and neutral attitudes toward aging, what would account for the knowledge of aging scores being so low? One reason may be that non-physician clinicians may not see the importance of not only being familiar with symptoms of late life depression, but also being familiar with age-related physical, mental, social, and environmental processes and changes. The average amount of aging-related courses was 1.8 ($SD = 1.4$) which indicates a need for gerontology courses during baccalaureate and post-baccalaureate education in order to have a better understanding of the aging process. This could have contributed to the low scores in knowledge of aging. It is important to note that the sample used in this study was relatively small ($N = 75$) and was specific to one geographic location (southwest Missouri). Would the results in this study differ given a larger sample size or a different geographic location? More research in this area is of importance due to the increasing need for adequate treatment in primary care settings in order to better meet the physical, mental, and social health needs of the aging population.

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