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Exploring the impact of depressive symptoms and medication beliefs on medication adherence in hypertension—A primary care study

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ABSTRACT

Objective: This study aimed to assess the levels of adherence in a sample of hypertensive patients being cared for in primary care in Northern Ireland and to explore the impact of depressive symptoms and medication beliefs on medication adherence.
Methods: The study was conducted in 97 community pharmacies across Northern Ireland. A questionnaire containing measures of medication adherence, depressive symptoms and beliefs about medicines was completed by 327 patients receiving antihypertensive medications.
Results: Analysis found that 9.3% of participants were non-adherent with their antihypertensive medication (self-report adherence scale) and 37.9% had scores indicative of depressive symptoms as determined by the Center for Epidemiological Studies Depression Scale (CES-D). In the univariate analysis, concerns about medications had negative effects on both adherence and depressive symptomatology. However, logistic regression analysis revealed that patients over the age of 50 were more likely to be adherent with their medication than those younger than 50. Depressive symptomatology and medication beliefs (concerns) were not significantly related to adherence in the regression analysis.
Conclusion: Depressive symptomatology was high in the sample as measured by the CES-D. Age was the only significant predictor of medication adherence in this population.
Practice implications: Health care professionals should consider the beliefs of the patient about their hypertensive medications and counsel younger patients on adherence.

1. Introduction

A vast number of variables have been found to potentially affect adherence with prescribed medication [1]. It is generally accepted that illness, health and associated behaviours are influenced not only by biology but also by psychosocial factors [2]. The term 'psychosocial' refers to psychological (such as beliefs) and sociological (such as social support) variables that can affect adherence. Of particular interest to researchers at present is the influence of these psychosocial variables on medication adherence.

It is recognised that depression is a major public health concern worldwide and depressed patients are high users of medical resources in both mental health specialties and general medical settings [3]. By 2020 depressive disorders are expected to be the second highest cause of disease burden worldwide [4]. Depression refers to a variety of mental health problems characterised by the absence of positive affect, low mood, and a range of associated emotional, cognitive, physical and behavioural symptoms [5]. Patients with depression are often non-adherent to therapy for chronic co-morbid conditions [6]. Recent research found an association between depression and non-adherence in patients with coronary heart disease [7]. This was further supported by research in patients with cardiovascular disease in Northern Ireland; high levels of depressive symptomatology were detected, which led the authors to hypothesise that, combined with other psychosocial factors, this has negative consequences for adherence [8].

Not everyone views their prescribed medication as essential for maintaining their health [9] and it is believed that this perceived lack of need plays an important role in medication adherence. Two specific medication beliefs have been proposed as being the most important factors affecting adherence: beliefs about the necessity of the medication for maintaining present and future health, and concerns about the side-effects of taking the medication [10]. Four

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in every five people receiving antihypertensive therapy have reservations about taking this type of medication [11]. Furthermore, when patients feel well and have no identifiable symptoms they are less motivated to take their medication as prescribed [12]. As such, the asymptomatic nature of hypertension appears to have a negative effect on adherence [13,14].

Hypertension is one of the most preventable causes of premature morbidity and mortality worldwide [15] and blood pressure control is of paramount importance in ensuring prevention of adverse cardiovascular events [16]. Although hypertension responds well to drug therapy, only 10–30% of diagnosed hypertensive patients in the United Kingdom have their blood pressure controlled [17]. In financial terms, treating hypertension is very costly, with the average monthly drug cost for patients attending an outpatient clinic being £30.68 [18]. Research carried out in Northern Ireland suggests that 30–45% of inhabitants aged 55 or older have a diagnosis of hypertension [19]. In 2005, over six million prescriptions were dispensed in Northern Ireland pharmacies for cardiovascular drugs which included almost four million prescriptions for diuretics, beta-blockers, calcium channel blockers and drugs affecting the renin–angiotensin system, all of which are used in the management of hypertension [20]. Northern Ireland has the highest number of pharmacies per head of population in the United Kingdom [21]. Community pharmacists, therefore, are in a unique position to influence medication adherence as they have the ability to reach a wide range of hypertensive patients.

The overall aim of the research presented in this paper was to investigate the influence of a range of psychosocial variables (depressive symptoms, social support and medication beliefs) on adherence to medication in hypertensive patients managed within the primary care setting, and receiving their medication from community pharmacies. This study attempted to go beyond examining the impact of isolated factors on adherence by collecting data on a number of factors which have been shown to be influential in this regard. Furthermore, the study was undertaken in the community pharmacy setting, thus accessing a more diverse range of patients than may be encountered in other health care environments, such as hospital.

2. Methods

2.1. Study sites

The study took place in community pharmacies throughout Northern Ireland. Ethical approval for the study was sought and obtained from the Research Ethics Committee, Queen's University Belfast. Recruitment and data collection were carried out between May 2003 and June 2004.

2.2. Pharmacy recruitment

All community pharmacies ($n = 506$) in Northern Ireland were informed about the study by mail in May 2003 and invited to assist with data collection. As an incentive to take part, pharmacists were offered a Continuing Professional Development (CPD) certificate from Queen's University Belfast on completion of the study. Each pharmacist within each pharmacy was asked to identify and recruit 8 participants into the study.

2.3. Study inclusion and exclusion criteria

Patients were invited to participate in the study by community pharmacists if they had been prescribed at least one antihypertensive medication for at least 1 year; were at least 18 years of age; were willing to take part and provide written, informed consent and were orientated to self, time and place.

2.4. Measures

A custom-designed questionnaire was utilised in this study, i.e. 86 items in total were included in the questionnaire comprising a mix of closed, open-ended and Likert scaled questions and was self-completed by patients in their own homes. The questionnaire was given to participating patients by the pharmacists and contained the following sections.

2.4.1. Adherence

Adherence was measured by self-report methodology using the Reported Adherence to Medications scale (RAM [10]). The RAM comprises of four items that are scored on a five-point Likert scale, with possible scores ranging from 4 to 20. An example of an item on this scale is: "I sometimes forgot to take my blood pressure mediation". Higher scores indicate better adherence. An arbitrary cut-off point of 80% (i.e. achieving a score 16 or above) was taken as indicating that the patient was taking medication regularly and has been previously cited in the literature with adherence measured by self-report [8] and pill count [22,23].

2.4.2. Depression

Depression was measured using the Center for Epidemiological Studies Depression Scale (CES-D [24]). The CES-D is a widely used, 20-item self-report scale designed to measure levels of depressive symptomatology within the previous week [25]; it is used as a screening tool rather than for diagnosing cases of clinical depression. The CES-D had been devised primarily for use in epidemiological studies, but as it focuses on the cognitive and affective aspects of depression rather than the physical, it is a useful tool for studying levels of depressive symptoms in chronically ill populations [26]. Four categories of depressive symptoms were defined [27]: (1) normal (CES-D score < 16), (2) mild (score = 16–20), (3) moderate (score = 21–30) and (4) severe (score = 31–60). A score of 16 or more is indicative of depression.

2.4.3. Social support

Social support was measured using the MOS Modified Social Support Survey-5 item [28]. This scale, originally designed for the Medical Outcomes Survey [28], consists of five items that measure social support. Items measure tangible support, emotional/informational support, affectionate support and positive social interaction. The items are measured on a five-point Likert scale with lower scores indicating less social support, with a range from 0 to 100.

2.4.4. Self-efficacy

Self-efficacy was measured using the Adherence to Antihypertensive Medication Self-efficacy Scale [29]. This self-efficacy scale was designed specifically to assess self-efficacy with respect to antihypertensive medication taking behaviour. Participants are asked to rate their level of confidence in taking their blood pressure medication as prescribed across several different situations. A typical question was "I am confident that I could take my blood pressure medication as prescribed, even if I didn't think that my medicine was useful". The scale uses 11 items measured across a five-point Likert scale and has good internal reliability (Cronbach's alpha: 0.88) and validity [29].

2.4.5. Beliefs about medicines

The Beliefs about Medicines Questionnaire (BMQ [21]) is used to assess the cognitive representations of medicines. Patients are