

Older people and medication taking behaviour: a review of the literature

Maggi Banning

Abstract

Background: Older people represent a sizeable population of the UK. Many older people receive drug treatment for long term conditions. Adherence with medication is therefore an important clinical, financial and resource intensive concern.

Objectives: This review aimed to examine patient's beliefs, perceptions and views in relation to adherence with medication.

Design: A comprehensive search of the literature was undertaken using numerous approaches. The search revealed 30 research papers.

Findings: Articles were initially evaluated using Critical Appraisal Skills Programme principles to identify those relevant to the review. Relevant studies were then subjected to a narrative analysis to assist the development of relevant themes. Four themes were identified; experience of adherence; perceptions and attitudes to medication adherence and non-adherence; patients acceptance of their illness and impact on medication taking behaviour and shared decision making.

Conclusions: The findings of this review imply that there is a need for more emphasis on shared decision making between the older patient and the prescriber. Using this approach adherence with medication may improve. There is also a need to develop a standardized measure of medication adherence.

Key words: adherence, medication taking behaviour, older people, perceptions of illness, intentional and unintentional non-adherence

What is already known about the topic?

- In England the majority of medicines are prescribed for older people
- Older people are increasingly likely to mismanage their medicines
- In older people medication taking behaviour can vary due to the effects of ageing, illness and social reasons.

What this paper adds?

- There is no gold standard for measuring adherence with medication.
- Two forms of non-adherence are acknowledged; intentional non-adherence and unintentional non-adherence. Older people can concurrently exhibit both forms.
- In older people perceptions of illness and poor comprehension of the role of medicines in the management of long-term conditions can lead to intentional non-adherence with medication.
- The patient/ prescriber consultation can provide opportunities for the adoption of shared decision making and exploration of the older persons' beliefs, views and experiences of medication taking and how they impact on their medication adherence patterns.

Introduction

Medication taking behaviour relates to the manner in which an individual adheres to a medication regimen. In the older person, it is known that alterations in medication taking behaviour can happen and can lead to suboptimal clinical responses to medication and the onset of psychological and medical complications as a consequence of poor therapeutic control (McElnay, 2005, Pound et al. 2005). Altered medication taking behaviour can reduce the patient's quality of life and create a financial burden due to the inappropriate use of valuable resources (Pound et al., 2005a). Findings from a recent meta-analysis of randomized controlled trials revealed that roughly 20% to 50% of patients mismanage their medicines (Kripalani et al., 2007).

The concept of adherence

The terminology used to describe medication taking behaviour has undergone many transitions during the last decade. Initially the term compliance was used to illustrate the medication taking behaviour which was then replaced by the term concordance. Concordance refers to the “anticipated outcome of the consultation between doctors and patients about medicine taking” (Pound et al., 2005 p. 134). It is viewed as successful prescribing and medication taking based on the partnership with the patient. The most current, fashionable and accepted terminology is adherence. This term describes “the extent to which a patient's behaviour in terms of taking medicines, following diets or executing lifestyle changes, coincides with advice given by health care professionals”

(McElnay, 2005, p.20). The three terminologies tend to be used interchangeably but are incorrectly applied. Adherence can be viewed as the central aim, concordance is the process used to apply the aim and compliance is the outcome of the process.

Three key health related reports have been used to raise the profile of adherence to medication and medication taking behaviour. The Government funded medicines partnership which aims to raise the profile of financial and health promotion aspects of medication taking and how adherence with medicines can be improved (Carter, Taylor, Levenson et al., 2003). The World Health Organization report aims to improve medication management in patients with long term conditions particularly in individuals who are prone to non-adherent behaviour (World Health Organization, 2003). The recent report by the World Health Organisation (2003) suggest that medication taking behaviour can be adversely influenced by social, economic, health and therapy related factors and patient-specific issues which may be influential such as stress, treatment anxieties, perceptions about their illness, need for treatment and essential therapeutic requirements. Thirdly, the King's Fund report (Harrison, 2003) places emphasis on the dominance of therapeutic drug related interventions to manage medical conditions and drug dependent health care systems that limits the use of alternative and behavioural therapies and public health interventions may be more beneficial to patients.

Medication taking behaviour research

The vast majority of research that has investigated medication taking behaviour has centred on clinical trials and quantitative approaches which includes a paucity of qualitative studies (Benson and Britten, 2002). Over the last three decades, more than 200 variables have been identified that are pertinent to the extent and determinants of compliance with medication, few studies since the 1980s have successfully illustrated the predictability of adherence (Vermiere et al., 2001). Reported studies have been of variable methodological quality, fragmented, lacked a theoretical framework and provided limited insights into the continual comprehension of the concept of adherence. There is a paucity of qualitative studies that have investigated the patients' views on adherence or lay beliefs about medication taking. Blaxter and Britten (1996) found that older people used medicines as a resource to be used as necessary rather than as prescribed by the health care provider. Additional lay beliefs on medicine taking include:

- i. The need to reduce the symptoms of hypertension, to feel physically better (Kjellgren et al., 1998, Ekman et al., 2006).
- ii. Balancing reservations with perceived benefits of taking medicines (Benson and Britten, 2002).
- iii. Fear of complications and desire to control blood pressure (Svensson et al., 2000).
- iv. Positive experience or confidence in the prescriber (Benson and Britten, 2006).

Even though 45% of all medications prescribed in the UK are for older people, it is postulated that up to 50% of older people are non-compliant with their medication (SCIE,

2005). There is also a paucity of qualitative research that has focused on this client group and their medication taking behaviour.

The focus of this paper is to address medication taking behaviour in older people. Older people were preferentially selected for several reasons. First, older people are highly likely to suffer from multiple diseases (Hughes, 2004). Second, older people frequently administer three or more medicines concurrently to manage these conditions and third as a result of polypharmacy, older people are increasingly likely to mismanage their medicines (Corlett, 1996). Medication mismanagement is a significant problem as it can lead to poor control of chronic conditions such as hypertension (Mancia et al., 1997, Benson and Britten, 2002), heart failure (Cline et al., 1999, Struthers et al., 1999) and cholesterol management (Senior, et al., 2004). Up to two thirds of patients have poor blood pressure control due to failure to adhere to anti hypertensive medication; resulting in complications and unplanned admission to hospital (Chin and Goldman, 1997).

This literature review aims to present the evidence from quantitative and qualitative studies that examined beliefs, attitudes and views pertinent to medication taking behaviour in individuals over the age of 65 years.

Method

This review was restricted to a review of the current literature and draws on established methods (CRD, 2001). This review of the literature provides an evaluation of the range of existing research relevant to adherence with medication in older people. However, the

aim of this review is not to evaluate the quality of the studies reported but to provide a succinct account of the range of existing studies and literature relevant to the subject of medication adherence and older people (Mays et al., 2001). This report of a scoping exercise provides an illustration of the published research studies and literature specific to older people and their beliefs, perceptions and views relevant to adherence with medication from the early 1990's to the present time. The study drew on both UK based and international literature in an attempt to illuminate the complexity and depth of the subject and to illustrate the global nature of the subject matter.

The search strategy employed the following data bases: Pubmed, Cinahl, Google scholar, advanced Google scholar, Medline, Medicines Partnership, The Cochrane Library, The King's Fund, RCN database and the World Health Organisation. In addition to trawling a range of relevant electronic databases for literature, hand searching of individual journals which could supply additional literature was also undertaken. A defined search strategy was undertaken using the following terms: medication taking behaviour, adherence with medication, older people, elderly people, medication review, medication management, perceptions of medicines, health beliefs and medicines, values and medicines, medication management in combination. References were selected from a ten year period from 1997 until 2007, as it was believed that most relevant studies would be found within this period.

Research studies were included in the review if they addressed the central question what are older people's beliefs, attitudes and views pertinent to medication taking behaviour ?

In addition to research studies, reviews and opinion papers pertinent to the subject area were also included in the scoping exercise. Policy papers, theses, book reviews and textbooks were excluded from the scoping exercise.

In total 552 references were identified electronically, and by hand searching. Titles and abstracts were scanned for relevance. Over 100 reports were read in detail, and of these 30 research studies emerged that were relevant to older people and adherence to medication (Table 1). Reasons for the exclusion of articles included the following: age groups younger than 65 years of age, included a mixture of age groups, focused on medication adherence interventions, drug related study that was not focused on adherence with medication and those that used electronic measures of adherence as these are of variable quality.

Papers were appraised using a version of the Critical Appraisal Skills Programme (Critical Appraisal Skills Programme, 1998). Using this method, studies were excluded if they were judged to be insufficiently focused on medication adherence or did not focus specifically on older people. The design of studies included in this exercise varied from cross sectional and questionnaire surveys, community based cohort studies, systematic reviews of randomized controlled trials, prevalence studies, small scale exploratory studies, and a range of exploratory qualitative studies using discourse analysis, grounded theory and phenomenological study designs.

A narrative synthesis of the evidence was undertaken. This allowed an analysis of studies in order to make subjective judgements about the extent to which the body of evidence addressed the key aim of the review. This analysis did not seek to examine the heterogeneity of studies or to describe the quality and rigour of the study designs employed but aimed to draw on the salient findings and merit of the individual studies and their contribution to the subject area in order to present an overview of the existing research.

Findings

Four themes emerged from the findings of the studies reviewed. These include: the experience of adherence, perceptions and attitudes to medication adherence and non-adherence, patients' acceptance of their illness and impact on medication taking behaviour, and disease specific information.

The experience of adherence

Adherence with medication can be considered as a coping strategy used by patients in response to a chronic illness. Within this strategy patients may identify their perceptions of illness and how they self manage the condition (Leventhal, 1992). Illness perception can be influenced by issues of disease aetiology and duration, control or cure and its consequences, all of which can impact on adherence with medication. Sackett et al (1979) reported that adherence rates for prescribed medication can vary from 0% to 50%. This position has remained unchanged since early 1970s (Vermiere et al., 2001). Several

reasons attest to why older people fail to adhere to prescribed medication regimens. Sale et al., (2006) reported that older people were fearful of becoming addicted to their medication, especially to codeine based analgesics. As a result, older people rationalized the administration of medicines usually at the lowest possible dose rather than the required dose. Pain relief was viewed as a last resort to pain management. The resulting pain endurance had a negative effect on mobility and activity. Medication rationalization is not unusual for older people. These findings concur with studies examining bisphosphonate therapy (Carr et al., 2006) and vitamin D preparations in osteoporosis patients (Zafran et al., 2005), and antihypertensive medication in hypertensive patients (Benson & Britten 2002; 2006). All three studies indicate that patient's responses were a reflection of individual perceptions of their illness and role of medication in its management.

Adherence to medication regimens can be dependent on age. People over the age of 75 years take more medicines than people 65-74 years age group (OR= 1.69, 1.54-1.85) (Chen et al., 2001). There are numerous adherence risk factors, these include the following:

- Cognitive impairment (OR =2.0, 1.4.-2.8) (Salas et al., 2001)
- Health literacy (Roth & Ivey, 2005)
- Inability to manage medication regimens (Griffiths et al., 2004)
- Lifestyle changes caused by social events, long distance travel which often resulted in tablets rattling in dosett boxes (Svensson et al., 2000, Kippen et al., 2005)
- Embarrassing and unpleasant medication side effects (Kippen et al., 1999).

Perceptions and attitudes to medication adherence and non-adherence

The concept of adherence and non-adherence with medication has been extensively investigated (Bonner & Carr, 2002, Campbell et al., 2003, Ekman et al., 2006, Kjellgren et al. 1995, Phatak and Thomas, 2006, Roth & Ivey, 2005, Van der Wal et al., 2005). Figure 1 illustrates the common perceptions and characteristics of adherent and non-adherent medication taking behaviour.

Adherent medication taking behaviour focuses on either purposeful or patterned adherence to medication regimens. Both types are enforced and contingent on the practicalities of taking the medicine. Elderly patients can reinforce adherence with the use of pill boxes, pouches and pockets specifically used for medicines. This reinforces the usefulness of measures such as pill counting and electronic monitoring; these have been used previously to evaluate adherence with antihypertensive medication (Lee et al., 1996, Mallion et al., 1998).

In terms of non-adherence with medication, two distinct patterns are proposed: purposeful or intentional non-adherence and accidental or unintentional non-adherence. Both types relate to the lack of an established pattern of medication taking which led to the incidental omission of medicines (Johnson et al., 1999) and may be experienced concurrently.

Patient's beliefs about medication taking may be based on past experience with medicines, and the long-term risks of medicine (Benson and Britten, 2002) such as drug

related memory loss and dizziness (Lumme-Sandt et al., 2000). Also the recognition of adverse effects (Conrad, 1985, Lumme-Sandt et al., 2000, Hughes, 2004, Maidment et al., 2002, Kippen et al., 2005). The anticipation of drug-related side effects and general dislike of taking medicines are common causes of intentional non-adherence (Lumme-Sandt et al., 2000). Some patients relayed their medication taking practices and fears to physicians that resulted in appropriate interventions such as additional explanation of the medicines involved, a change of medication or dosing intervals (Butler et al., 2002). However what is apparent is the indifference or passivity shown by patients, the lack of supervision from prescribers and the deficient comprehension of the health dangers of continually altering medication regimens. Also relevant are impressions of well being and being in control (Campbell et al., 2003).

The perception of risk related to an illness also correlates with intentional non-adherence with medication. Unson et al., (2003) found that older women administering prophylactic osteoporosis medication titrated their medication administration in relation to the necessity of treatment, potential side effects, risk of fracture and the purchase of affordable alternatives. Non-adherence patterns in older people also revolved around issues related to perceived drug benefit, drug safety and efficacy, preventative capacity or ability to improve health status (Johnson et al., 1999, Benson and Britten, 2002).

Non-intentional non-adherence is proposed to be range from a random departure to medication omissions from a prescribed treatment regimen (Johnson et al., 1999, Svensson et al., 2000). The salient features of non-intentional non-adherence focus on altering medication contingent on self assessment or perceptions of mental health, stress or anxiety, being asymptomatic and not requiring medication, forgetting to take

medicines or simply altering the doses of medicines to fit in with daily chores. Older people adherent with their medication often link the administration of medication to specific lifestyle events, time, location and patterns of daily activities (Svensson et al., 2000, Kippen, et al., 2005).

Patient acceptance of their illness and impact on medication taking behaviour

It is known that a patient's past experience of medication taking can adversely affect their adherence to medication (De Geest et al., 1998, Scotto, 2005) and can lead to rationalization of medicines (Benson and Britten, 2002; 2006). This response is often related to deficient comprehension of the role of medicines in illness management and deficient acceptance of their illness (Phatak and Thomas, 2006). It is therefore essential that patients stop trivializing the importance of the condition, the symbolic role that medication plays in the management of the symptoms of that condition and address altering identities and the personal challenges of taking medicines (Dowell and Hudson, 1997).

The older individual's innate decision-making processes can influence adherence to medication. Three phases are proposed; patient knowledge about the illness and treatment; testing of medicines and medication taking behaviour (Dowell and Hudson (1997). First, faith in the prescribers' ability to correctly diagnose and manage their illness is paramount (Levy and Feld, 1999, Dunbar-Jacob et al., 2000, Unson et al., 2003). Second, involves testing the clinical effectiveness and side effects of medicines is

often undertaken and usually involves omitting or discontinuing medicines before developing a regular adherence pattern and fully accepting the need for medicines (Dowell and Hudson 1997). Side effects may be viewed as positively ‘harmful’ and worse than the medical condition. So the perceived benefits need to outweigh the risk of side effects and all new medicines need to be carefully explained (Barber et al., 2004).

The third aspect of medication taking behaviour relates to the acceptance of an illness (Scotto, 2005). Three groups of users are described. Passive users adhere to their prescribed medication and usually do not question the need for medicines whereas active users adjust their medicine intake according to their personal needs. The third group is classified as rejectors as they usually fail to adhere to their medication regimen (Dowell and Hudson, 1997). By exploring older people’s views and potential misconceptions about their illness, prescribers can assess their willingness to adhere to medication regimens that are important to successful medication management.

Shared decision making

The patient consultation should take the form of a friendly, open discussion that provides opportunities for patients to ask questions about their illness and prescribed medicines but this is often not the case (Watson et al., 1998). During consultation, older people need to be able to engage in shared medication-specific decision making in a language that the older person can relate to (Veehof et al., 1999, Belcher et al., 2006). These aspects are

contingent on the appropriate medication management of older people (Svensson et al., 2000, Benson and Britten, 2002).

Older people were often confused by incomplete and unclear instructions. For example, patients were told to take a medicine at a particular time of the day with no comprehension of what could occur if they failed to adhere to the instruction or administered their medicines when they were out of date. Or being advised not to drink grapefruit juice with medicines but not knowing whether this related to a glass or a bottle of juice. There were also discrepancies in the information provided by different health care practitioners. This led to confusion for patients (Kippen et al., 2005).

Discussion

Adherence to medication is an important aspect of medication management of long-term conditions particularly in older people and is a growing area of research. In the research available, there is a tendency to propose that the older person should be passive and not question medical decisions and that health will improve if they adhere to prescribed medication regimen. This assumption is based on a paternalistic approach to medication management. Prescribers should adopt a consultation style that encourages patient participation and the sharing of views that address the patient's perspective and health beliefs. By employing shared decision making strategies the patient perspectives on illness and medicines, particularly new medicines used to treat chronic conditions can be

explored. In addition, both short-term and long-term goals can be negotiated (Belcher et al., 2006). By endeavoring to take this approach to the consultation it may increase patient confidence in the prescriber. In this way patients may feel able to voice their concerns about medicines and improve intentional adherence patterns (Barber et al., 2004, Maidment et al, 2002, Belcher et al., 2006). In this respect the nurses with prescribing roles can play a pivotal role and make a significant impact on the lives of older people through structured medication assessment and education (Griffiths et al., 2004). It is acknowledged that the elderly need to be treated as a special group with more attention provided to ensure that they not only understand the need for medicines but also the role that medicines play in the management of their condition (Butler et al., 2002).

Recent evidence from randomized controlled trials infers that adherence with medication can improve through reduced dosing demands and education (Kripalani et al., 2007). Although randomized controlled trials are useful, numerous research studies provide inconsistent results which may be due to the lack of theoretical framework to measure adherence-enhancing methods and the fact that there is no gold standard for measuring adherence with medication. Improvements are needed with regard to the quality of studies and the use of quality indicators (Vermiere et al., 2001). There needs to be more emphasis on adherence to medication rather than compliance with medication as adherence more fully addresses lifestyle and medication taking behaviour. More qualitative research is needed as these research approaches help to contextualize evidence from clinical trials. Future adherence research should aim to investigate the patient's perspective on the perceived benefits of medication, difference between the patient's and

the prescribers' perceived risk, experience of drug administration, innate motivation to adhere to medication regimens, and also the historical and social context of medication taking behaviour.

The aim of this literature review was exploratory in that it aimed to present the evidence from quantitative and qualitative studies that examined beliefs, attitudes and views pertinent to medication taking behaviour in the older person. There were limitations of this review. It did not permit a full exploration of design of studies, including description of the study sample, description of the studies involved, an evaluation of the size of effects across studies, and also an assessment of the factors that may limit the generalisability of the results of the review.

Conclusion

Medication taking behaviour in older people is a complex issue that can have significant financial and health related consequences. It is an area of research that has been investigated in relation to the use of nursing interventions and prevalence but future research needs to be more patient centered to elucidate the patient's perspective and possible impact of a shared approach to clinical decision making. Further, the generation of a measure to assess risk of non-adherence with medication would be an important contribution of future research and development in nursing.

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