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A pilot study evaluating the effectiveness of a medicines education group in a mental health inpatient setting: A UK perspective

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Abstract

Introduction: It is estimated that up to 50% of medications for long-term conditions are not taken as prescribed. In mental health conditions, poor adherence leads to increased relapse, suicide rates, and hospitalizations. It is recommended that health care professionals aim to elicit and address beliefs and attitudes about medication, and to understand the patient's experience of taking them, as these, among other factors, affect adherence rates. This study evaluated a pilot trial of a medicines group for adult inpatients on an acute mental health ward.

Methods: This study comprises a pilot service evaluation of a medicines education group through the descriptive analysis of data obtained using a tailored outcome measure using validated experience and attitude measures. The medicines education group was designed by a multidisciplinary team and focused on eliciting perceptual and practical barriers to adherence, lived experience, psychoeducation, and shared problem solving. The group was run during a period of 3 months and was compared to a baseline data set.

Results: In total there were 35 medicine group attendees, there were 3 dropouts, and the outcome measure was fully completed in 68% of cases, with only 4 refusing, indicating this pilot evaluation was feasible and acceptable. Descriptive analysis found that on average, group attendees reported a better understanding of the purpose and side effects of their medication, and felt more involved in decisions about their medicines compared with the baseline data set.

Discussion: This pilot evaluation found that running a novel medicines education group, targeting perceptual and practical barriers to adherence, was acceptable to attendees and feasible to deliver on an adult psychiatric inpatient unit.

Keywords: adherence, psychiatric, medicine group, patient experience, attitudes

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Introduction

Research informs us that 30% to 50% of medicines for long-term conditions are not taken as prescribed.[1-3] The financial implications of this information alone are significant. A report by the York Health Economics group and the School of Pharmacy, University College London concluded that the cost to the NHS (National Health Service) England in wasted medicines due to nonadherence was estimated to be £300 million per annum.[4] This same report calculated that improving adherence in schizophrenia alone would save NHS England £180 million per annum.

The clinical implications of nonadherence are of equal concern. In schizophrenia, poor adherence leads to a 5-fold increase in relapse rates.[5] In bipolar disorder, suicide rates are increased by up to 5-fold in nonadherent individuals,[6] and it also leads to increased and prolonged hospitalizations.[7]

Interventions to improve adherence are often expensive, frequently ineffective, and not based on the reasons behind nonadherence.[8] This is despite extensive research, and proven psychological models and frameworks explaining and predicting nonadherence.[9,10]

The self-regulatory model[11] recognizes that an individual's response to a health threat or intervention is influenced by preexisting beliefs and perceptions. Horne et al[10] enhanced this model with the addition of the Necessity Concern Framework. The Necessity Concern Framework posits the idea that individuals base their decisions on whether or not they take their medicines on two belief themes: the extent to which an individual believes he or she needs the medication, and the extent to which he or she believes the medicine will do him or her harm. The Necessity Concern Framework has been extensively tested and is consistently associated with nonadherence.[12] The Drug Attitude Inventory 10 (DAI-10) is a 10-item self-reporting questionnaire that assesses attitudes toward psychotropic medication, with lower scores being associated with lower rates of adherence.[13] The DAI-10 was established for individuals taking medication for schizophrenia, but it has also been used in trials in patients with bipolar disorders.[14,15]

The Royal Pharmaceutical Society of Great Britain[3] points out that nonadherence can be categorized in two distinct but not mutually exclusive ways: nonintentional adherence, where the individual has the desire and will to take medication but practical obstacles prevent him or her from doing so; and intentional nonadherence, where an individual's beliefs, affect, and motivation lead to deliberate alteration in the way in which he or she takes his or her medicine from that which was agreed with the prescriber.

Numerous guidelines[1-3,16] recommend an approach that: develops a shared understanding of the problem of adherence; identifies both intentional and nonintentional barriers to adherence and addresses these appropriately; and includes assessing and addressing the cognitive, emotional, and behavioral aspects of adherence in a collaborative and patient-centered manner.

A thorough review of literature revealed very little published research on the studies of the effectiveness of a pharmacy-led or co-led medicines education groups for inpatients of a mental health hospital. After reviewing the titles and short descriptions of more than 500 papers from Medline, PsychInfo, and EMBASE searches, 2 studies and 1 systematic review were identified. Gavin and Frey[17] report an uncontrolled study in which attendees (n = 22) of a pharmacist-run medication education group were compared with nonattendees (n = 27) in terms of their self-efficacy in medicines use and the frequency, intensity, and burden of side effects experienced. They found that there was no difference in either measure for those attending the group versus those not attending. In conducting a review on this topic, Norman and colleagues[18] found only one paper of a pharmacist-led medication education group in a psychiatric setting during their systematic review. Although the findings of this study were promising (significantly increased patient medication knowledge and nonsignificant trend toward improved patient outcomes), it is important to note this study is more than 35 years old.[19]

Adherence interventions can be successful when they address the known causes of nonadherence and include techniques focusing on attitudes, behavior change, and affect.[5,15,20-22] Medicines groups need to be grounded in the underlying theory and causes of nonadherence, and specifically aim to elicit and address these issues. Furthermore, it is essential that groups are evaluated and reported in a systematic way, to establish their effectiveness.

Project Aims

The aim of this primary project was:

- To conduct a pilot investigation evaluating the feasibility and acceptability of a medicines group designed to enhance patients' experience and attitudes toward taking medicines within an adult inpatient unit in an acute mental health ward.

Secondary objectives included:

- Assessing the feasibility of the outcome measure by recording the number of participants who complete it versus those that do not, or refuse to;
- Assessing the acceptability of the group by recording the number of patients attending the group and the number that leave early; and
- Assessing the feasibility of the running of the group by recording the number of cancellations of scheduled groups.

Methods

The service evaluation was registered with the Trusts Audit Committee, and an evaluation steering group was

formed. A naturalistic, pre-post methodology was adopted for the evaluation.

The Trusts' research and development department and ethics committee gave assurance that this project constituted a service evaluation and as such did not require NHS ethical approval.

The service evaluation took place on an adult male (ages 18-65 years) inpatient unit for people with acute mental health difficulties. Demographic data were not collected on individual patients, because this was a service evaluation, and minimal personal data were recorded. However, for the ward under investigation the average annual inpatient diagnoses are: schizophrenia 38%, bipolar disorder 33%, schizoaffective disorder 8%, and other (including personality disorder, severe depression, and attention deficit hyperactivity disorder) 22%.

Outcome Measures

The outcome measures for the study were a modified version of the medicines-related questions of the Care Quality Commission's (CQC) national inpatient survey of Mental Health Trusts[23] and the DAI-10.

Medicines-Related Questions of the CQC

The CQC is the independent regulator of health and social care in England, and it regularly conducts national surveys of individuals using NHS services. A decision was made to use questions taken from the CQC's national inpatient survey, but to modify one question to make it specific to medicines; the change concerned Question 3 of the survey, which was modified from

Were you involved as much as you wanted to be in decisions about your care and treatment? to

Were you involved as much as you wanted to be in decisions about your medicines?

The National Institute for Health and Care Excellence produces national evidence-based guidance and advice for health, public health, and social care practitioners. It has both a Guideline and Quality Standard outlining the importance of the patient experience of health care services and the need to improve it.[24] These questions were chosen as our outcome measure because the CQC patient survey aims to reflect the extent that NHS Trusts are meeting these standards. Furthermore, this measure gives the added advantage of having preexisting national and local data with which to compare the results of this evaluation.

The DAI

The DAI is a true-false format questionnaire that assesses domains of patients' attitudes, including positive and negative experience, locus of control, and attitudes toward health. Scores range from −10 to 10, with lower scores being predictive of lower rates of adherence.

Preintervention Baseline Data

The outcome measures were used to collect baseline data for a period of 6 weeks prior to the start of the medicines group. The baseline data group consisted of 2 subgroups, an admission subgroup and a discharge subgroup. The study investigator attended the morning clinical meetings to identify newly admitted individuals (admission subgroup) to the ward as well as those deemed to be in their final week of admission (discharge subgroup). Capturing patients in their first and final weeks of admission enabled us to track any existing changes in attitudes and experience as part of the ward's usual practice. A risk assessment and clinical decision were made by the medical team to ensure that individuals identified on the above criteria were mentally stable enough to be seen by the investigator. This decision was consistently made and safeguarded both the patient and investigator. All individuals meeting the above criteria were then invited (in the presence of the investigator) to complete the outcome measures. In order to maintain consistency of the discharge subgroup, any one individual entered into the admission group was excluded from the discharge group.

The Medicines Education Group

The group was scheduled every 2 weeks; it was evaluated during a period of 3 months, with 6 planned sessions.

The group was run by a pharmacist (D.W.) with specialist skills in cognitive behavioral therapy (D.W. is a qualified Cognitive Behavioural Psychotherapist, accredited with the British Association of Cognitive and Behavioural Psychotherapists) and the ward's activities coordinator (M.W.), who has specialist skills in group facilitation. All inpatients had the opportunity to attend the group.

In the absence of evidence-based guidelines for medicines groups, the content was designed primarily by the pharmacist (D.W.) and activities coordinator (M.W.), combining their skills in medication expertise, cognitive behavioral therapy, experiential learning, and group facilitation. The content was presented and approved by the study steering group.

Each group was scheduled for 45 to 60 minutes. The sessions comprised the following stages: ground rules and icebreaker (led by M.W.), an education session (this focused on 3 main classes of medication—antipsychotics, drugs used for bipolar disorder, and antidepressants, which alternated each group; led by D.W.), and finally a quiz, with the group working as a whole to place 15 statements about medicines into 3 categories—True, False, or Both (led by D.W.).

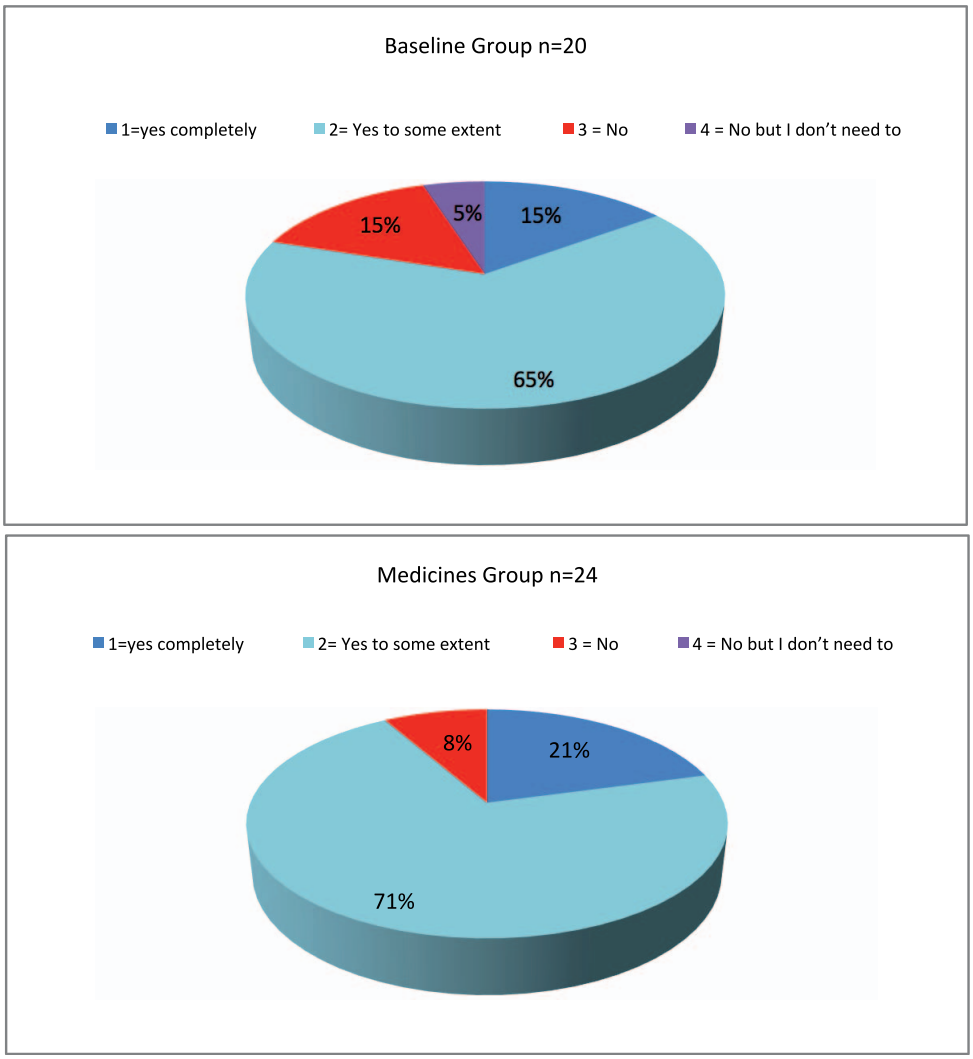

FIGURE 1: **Q1—Have the hospital staff explained the purpose of your medication in a way you could understand?**

Rationale for the Content and Approach of the Group

There were 3 main aims of the group: improving medicines education, eliciting experiences and barriers to medication, and problem solving/action planning.

The education aim was not just to present the information but to ask recipients to use the information, to elicit how it "fitted" with their experiences of medication. This approach was influenced by educationalist Paulo Freire's seminal work, *Pedagogy of the Oppressed*.[25] Freire argues learning is achieved through the dialogue of shared experiences and viewpoints, which allows individuals to take part in seeking their own knowledge, rather than just "banking" the presented knowledge. A key feature of Freire's work is praxis. Praxis is action that is informed by particular values and brought about by critical reflection through problem-posing questions. It was an aim of the group to elicit experiences (reflection) and stimulate problem solving (action) through collaborative open-ended questioning and group facilitation, emphasizing the disclosure of both negative and positive experiences.

Following National Institute for Health and Care Excellence Quality Standards,[26] the group was run with underlying principles of shared respect, dignity, and compassion to all attendees.

Results

Baseline data collection ran for a period of 6 weeks, and the ward was visited 8 times to collect data. A total of 20 inpatients were asked to complete the outcome measure, and all did so. Of these, 9 were in their first week of admission and 11 were in the week of their discharge.

Overall there were 6 medicines groups held during a period of 11 weeks (approximately 1 group per fortnight).

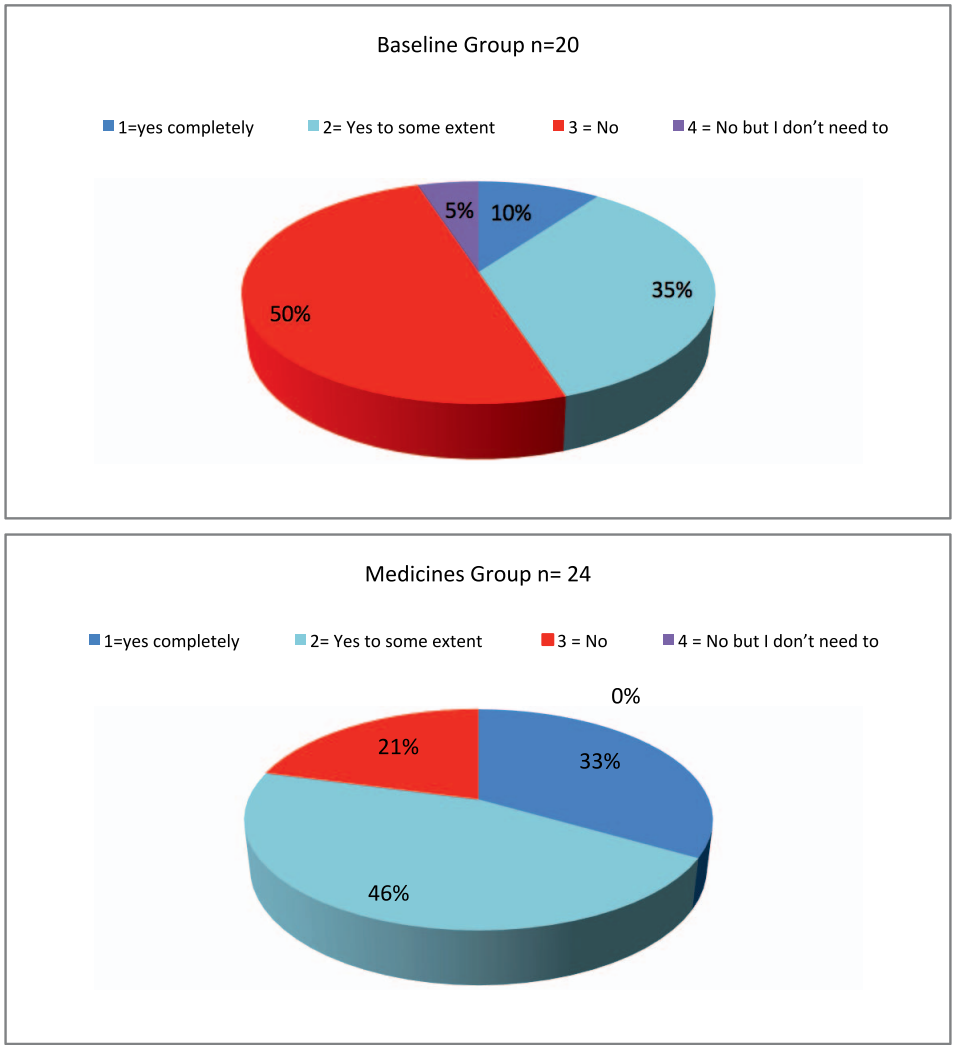

FIGURE 2: Q2—Did the hospital staff explain the possible side effects of this medication in a way you could understand?

The groups were run by the same 2 interventionists on each occasion.

In total there were 35 medicine group attendees; the lowest group attendance was 4, and the highest was 7. The ward has up to 20 beds occupied at any one time; however, many patients will take ward leave throughout the day, making it difficult to know the exact percentage of attendees given the total eligible number for each week. However, other ward activities are attended by an average of 5 patients. The group operated on an open-door policy, and throughout all of the sessions only 3 attendees left before the halfway point. There were no dropouts after halfway. The group was scheduled to last 45 to 60 minutes (depending on the willingness of the attendees to stay) and did not finish earlier than 60 minutes on any single occasion, suggesting the group was acceptable to attendees.

A total of 24 outcome measures were fully completed by those attending the group (7 measures were incompletely filled in and 4 attendees refused to complete one).

All 6 groups that were scheduled during the study period took place, indicating the feasibility of conducting the group.

Patient Experience

Figures 1 through 3 illustrate the responses to the patient experience questions.

Throughout their inpatient stay, individuals have several opportunities to discuss their medications. It was therefore hypothesized that patient experience and drug attitudes scores would be higher for patients about to be discharged. The following results include the discharge subgroup for further comparison.

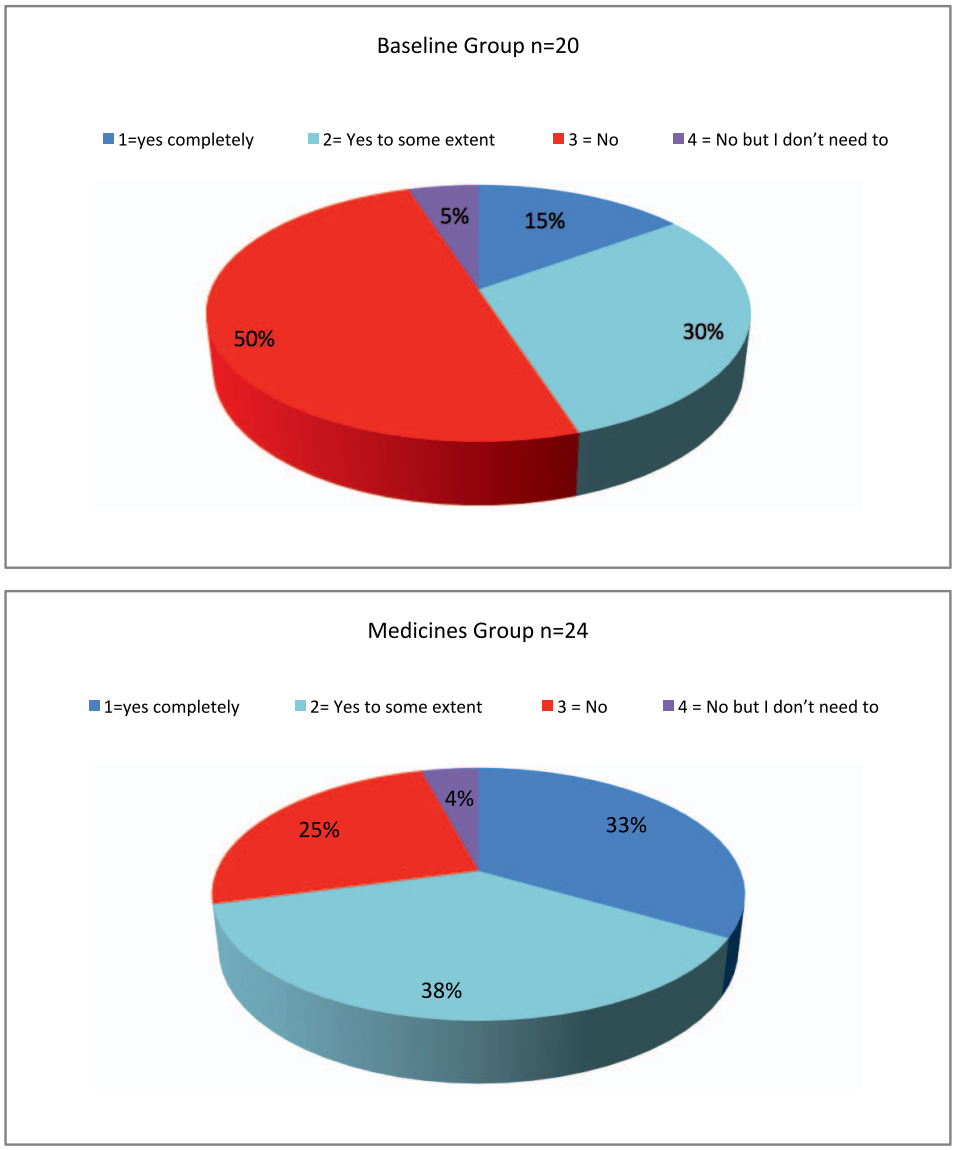

FIGURE 3: **Q3—Were you involved as much as you wanted to be in decisions about your medication?**

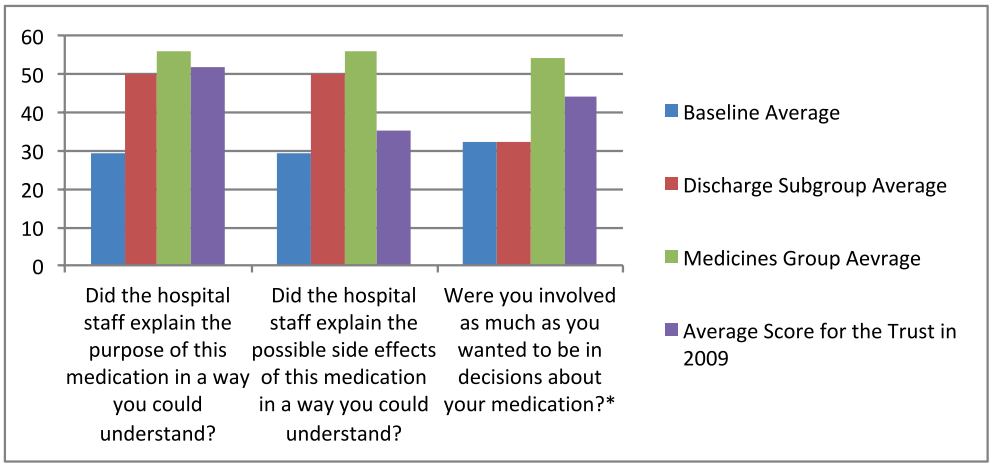

FIGURE 4: **Graphical representation of all 3 experience-related questions (asterisk indicates amended question)**

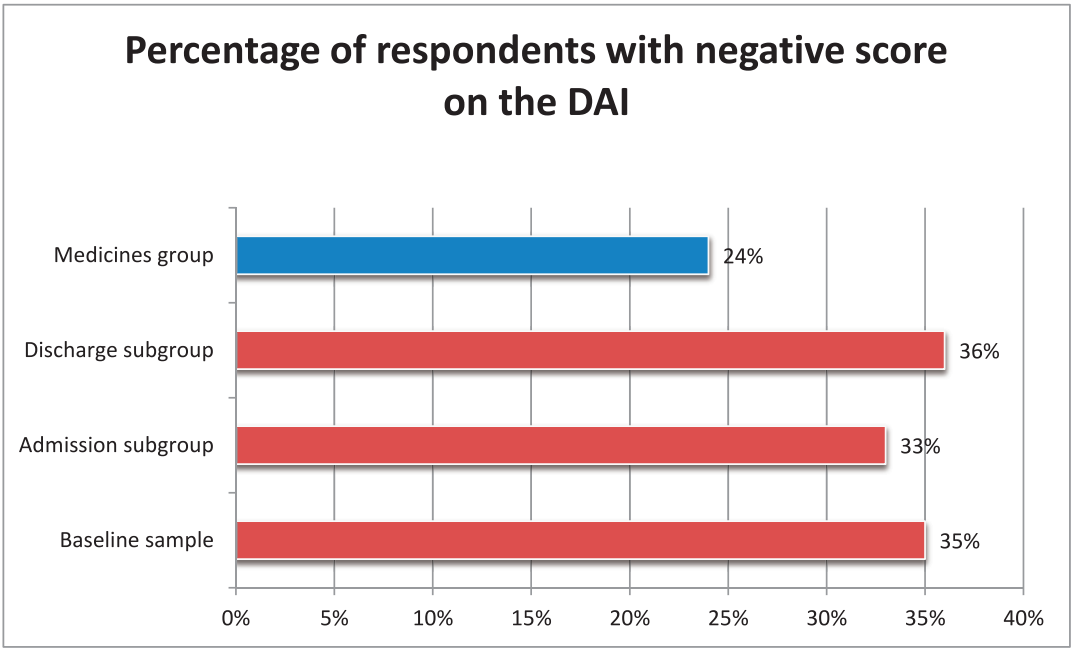

FIGURE 5: Percentage of respondents with a negative score on the Drug Attitude Inventory (DAI)

Figure 4 represents the average scores achieved for the baseline group, discharge subgroup, medicines group, and the Trusts' 2009 score, when using the results and scoring system of the 2009 CQC In-patient Mental Health Survey, with higher scores indicating more favorable results. (The scoring system can be accessed via: http://www.nhssurveys.org/Filestore/documents/MH09_Guide_to_benchmark_reports.pdf.)

Attitudes Toward Medicine

The comparative number of group attendees with a negative score on the DAI-10 was less than either the baseline group as a whole or when compared to any subgroup (Figure 5).

Discussion

This study provides us with many interesting and promising results. There are very few published trials looking into the effectiveness and experience of those attending medicines education groups in a psychiatric setting. The findings in this report appear to support the view that if conducted in the appropriate way, using theoretical understanding, medicine groups can be a useful additional level of support for the patient. Furthermore, the results above suggest that this intervention and the evaluation design were both feasible and acceptable.

There are limitations to this evaluation in terms of both the methodology and the results. This was a service evaluation and not a clinical trial, and as such the participants could not be sampled in ways to minimize bias; it is impossible to say in what way the control group resembled or differed from those attending the medicines group, because demographic data were not captured. Those attending the group were self-selecting and may not be representative of the ward inpatients at the time, and the number of participants is too low to establish causality or to rule out chance; also, individuals could attend the groups more than once, and with repeated measures potentially skewing the results. Furthermore, all patients were male and between the ages of 18 and 65 years. While considering these limitations it is important to recognize the following points. This service evaluation was conducted during the day-to-day running of a busy acute mental health ward and is highly representative of the clients that attend such establishments. The attendees of the medicines group had higher scores than the baseline group, discharge subgroup, and the Trusts' 2009 score in *all* available measures. The attendees of the sessions felt considerably more involved in their treatment decisions than any of the other groups or subgroups. This occurred despite the attendees being explicitly aware that the interventionists had no power to amend prescribed medication. The discharge subgroup represents individuals who have received the maximum number of medication consultations for an admission; to achieve scores better than this subgroup suggests the group offers something beyond that which is routinely given during an inpatient stay.

Conclusion

This pilot service evaluation suggests that attendees of a ward-based, pharmacist-led medicines education group have a better understanding of the purpose of medicines

and the side effects associated with their medicines, felt more involved in the decisions about their medicines, and had more positive attitudes toward medicine than a similar group who did not attend.

Furthermore, the pilot evaluation found that the outcome measure, medicines group, and evaluation design were acceptable and feasible.

Acknowledgments

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