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Please cite this article as: Lauren M Hickling , Stefanie Kouvaras , Zaklin Nterian , Rocio Perez-Iglesias , Non-adherence to antipsychotic medication in first-episode psychosis patients, *Psychiatry Research* (2018), doi: 10.1016/j.psychres.2018.04.002

Highlights

- Adherent patients were more satisfied with medication information
- Thirty-four percent of patients reported being non-adherent to antipsychotics
- Non-adherent patients were significantly younger than adherent patients

Non-adherence to antipsychotic medication in first-episode psychosis patients

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Abstract

This study evaluated the influence of attitudes and beliefs towards antipsychotics on adherence, and aimed to understand how satisfaction with information impacts adherence in first-episode psychosis. Fifty randomly selected out-patients attending the COAST Early Intervention service completed a survey comprised of the Selwood Compliance Scale, Beliefs about Medicines Questionnaire, and the Satisfaction with Information about Medicines Scale. Thirty-four percent of patients reported non-adherence to antipsychotic medication, and they were significantly younger than adherent patients. Adherent patients were more satisfied with medication information than non-adherent patients (65.7% and 34.3% respectively), suggesting that providing better information about antipsychotics may improve adherence.

1. Introduction

When treating patients with a long term illness, outcome is determined largely by the effectiveness of the recommended treatment (García et al., 2016). In the case of prescribed medication, it is only of benefit to patients when it is taken (Byerly et al., 2007). Medication adherence is defined as the extent to which patient's medication-taking matches that agreed with the prescriber (World Health Organisation, 2003), and is suggested to be problematic when treating psychosis patients (Lau et al., 2015). Whilst antipsychotic medication is deemed an efficacious treatment (Gray et al., 2007), attaining and maintaining adherence is difficult (Leclerc et al., 2015).

Non-adherence rates among psychiatric patients are high (Haddad et al., 2014). For patients presenting with a first-episode of psychosis (FEP), existing data suggests 30-40% of patients become non-adherent within six months, rising to up to 50% at one year (Coldham et al., 2002; Kamali et al., 2006). Consequences of non-adherence in FEP include higher relapse rates (Crespo-Facorro et al., 2011) and higher readmission rates (Robinson et al., 2002). As well as the personal costs to patients, a significant cost to society in terms of the financial burden also exists (Lafeuille et al., 2013).

Research shows that medication attitudes and beliefs are the most significant factors in predicting non-adherence, however with regards to antipsychotic medication, the evidence is unclear (Mutsatsa et al., 2003; Segarra et al., 2012). A meta-analysis conducted by Richardson et al. (2013) suggested there is a small to moderate association between patient

attitude to medication and adherence in psychosis patients. However it is important to note that the some included studies recruited individuals in different stages of the illness, and using a mixture of different measures (including the Health Belief Model (Becker, 1974), and Drugs Attitude Inventory (Hogan et al., 1983)). Furthermore, attitude to medication was found to be a predictor of adherence in patients diagnosed with schizophrenia or schizoaffective disorder, with those having a more positive attitude being more adherent (Baloush-Kleinman et al., 2011). Lack of insight has also been associated with non-adherence to medication (Segarra et al., 2012). Coldham et al. (2002) found that in 200 individuals diagnosed with a first-episode of psychosis, insight levels at initial assessment and after one-year were lower in non-adherent patients than adherent ones. Similar findings were observed by Chan et al. (2014), who found that higher levels of insight were observed in medication adherent patients diagnosed with schizophrenia. Non-adherence to medication generally has also been linked to medication inefficacy (Steger et al., 2012) and inadequate information giving (AlHewiti, 2003).

In relation to antipsychotic medication, a large proportion of patients reported dissatisfaction with the information received (Bowskill et al., 2007; Paton & Esop, 2005), especially regarding information about side-effects (Gray et al., 2005). In a survey of 69 patients diagnosed with schizophrenia, almost half (46%) of patients reported not having been warned about the potential side-effects of antipsychotic medication (Gray et al., 2005). Furthermore, experiencing side-effects was significantly associated with treatment dissatisfaction (Gray et al., 2005).

The present study therefore aimed to evaluate the influence of attitudes and beliefs towards antipsychotics and self-reported adherence, and to understand how FEP patient's

satisfaction with the information they received impacted upon self-reported adherence. Finally, we will evaluate whether side-effects frequently associated with antipsychotic medication have an impact on adherence

2. Methods

2.1. Study Setting & Participants

Participants were randomly selected from COAST Early Intervention in psychosis service, South London and Maudsley NHS Foundation Trust (SLaM). Patients attending the outpatient clinic were approached by independent researchers. Fifty patients (representing 20% of the caseload) were interviewed. Participants were required to be over 18 years old and have been prescribed antipsychotic medication. To improve the validity of self-report measurements, validated questionnaires were used, and participants were reassured that the data would not be shared with clinicians. The project was approved by SLaM NHS Foundation Trust (PSYAUD16/18).

2.2. Procedure & Measures

Self-reported adherence was measured with the Selwood Compliance Scale (Barrowclough et al., 1999), consisting of four statements regarding medication taking behaviour. Patients reporting "never missing a dose" were classified as adherent, and others as non-adherent. Beliefs about antipsychotics were assessed using the Beliefs about Medicines Questionnaire (BMQ) (Horne et al., 1999), BMQ-Specific examines patients' beliefs about medication prescribed for personal use, using two subscales: Necessity and Concern. BMQ-General examines beliefs about medicines in general, using two subscales: Harm and Overuse.

Answers were scored on a 5-point Likert scale and a total score per BMQ scale was calculated. Adequacy of information received regarding prescribed medications was assessed using the Satisfaction with Information about Medicines Scale (SIMS) (Horne et al., 2001). Patients reporting that the information was "about right" or "none needed" were classified as satisfied and the remainder were classified as dissatisfied. Participants were asked whether they were experiencing any medication side-effects, as well as their concerns about them.

2.3. Data Analysis

Data were analysed using SPSS 22 (IBM, Armonk, NY). Statistical tests were two-tailed (p=0.05). Continuous variables were compared using Student's t-tests, and categorical variables using Pearson's chi-square and Fisher's exact tests. To identify the main predictors of adherence to antipsychotics binary logistic regression was used.

3. Results

Fifty FEP patients participated, with a mean age of 28.4 years (SD=5.9), see table 1. Thirty two (64%) were male, with average contact with mental health services being 38.8 months (SD=55.9). Almost half of the sample was Black-British Caribbean/African/Other (48%), and were living with family (49%). In addition, 26 (52%) were unemployed, and 20 (40%) had above school qualifications.

Overall, 66% were classified as adherent, and 34% as non-adherent to antipsychotics. Independent t-tests showed non-adherent patients were significantly younger than adherent ones (t(45)=2.09,p<0.05). No significant differences were found for gender,

ethnicity, living with family or unemployment (all p's>0.05). Fishers exact test showed no statistically significant differences for medication type (p=0.24).

One-way ANOVA's compared the effects of BMQ Necessity, Concerns, Harm, and Overuse scales on adherence. A significant effect of BMQ Concerns (F(1,48)=8.73,p=0.005) and BMQ Harm (F(1,48)=7.27,p=0.010) was found on adherence. The model was significant (χ^2(2)=14.4,p<0.001), correctly classifying 82% of cases. The variables inputted into the model included gender, age, BMQ Concern, Harm and Overuse subscales and SIMS scales. Age (β=0.169;p=0.026) and perceived concerns about antipsychotics (β=0.252;p=0.006) remained significant predictors of medication adherence.

Adherent patients were generally more satisfied with all aspects of the information provided about medications than non-adherent ones (65.7% and 34.3% respectively). Specifically, in regards to the "risk of getting side-effects", non-adherent patients were significantly less satisfied with the information received than adherent patients (χ^2(1)=7.26,p<0.01)(Figure 1).
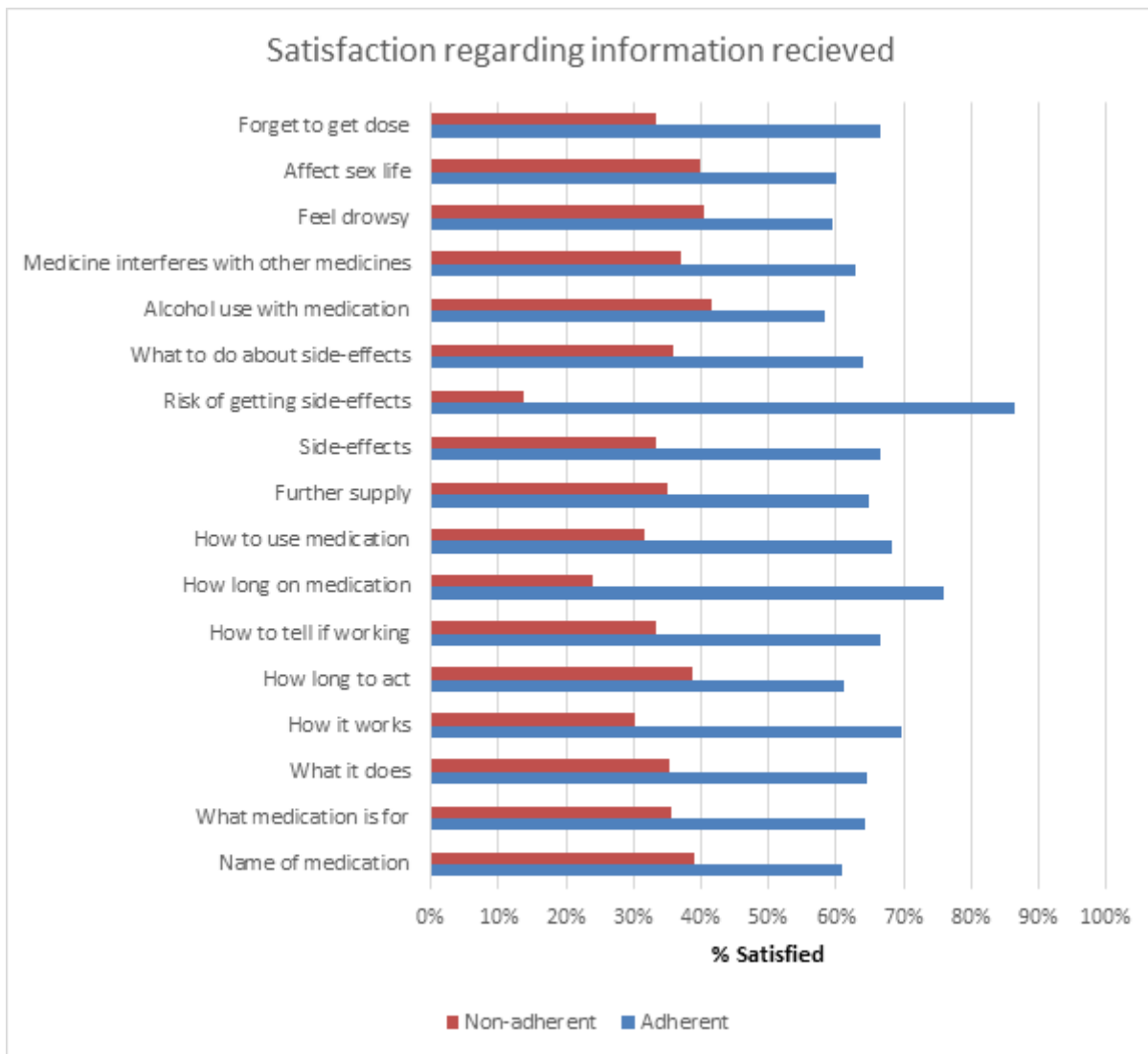
Figure 1: Satisfaction percentages among adherent and non-adherent patients.

Fifty-two percent of the sample reported weight gain as the most common side-effect of antipsychotics, with 77% reporting feeling highly worried about it. A Fishers exact test showed no significant correlation between subjective worry about weight gain and adherence (p=0.056).

4. Discussion

One third of patients receiving FEP treatment from the COAST Early Intervention service were found to be non-adherent to their prescribed antipsychotic medication. This is in accordance with research finding non-adherence rates in FEP patients to be between 33 and 44% (Coldham et al., 2002; Kamali et al., 2006; Perkins et al., 2008).

Our findings are in line with the Health Belief Model, which suggests that patients are more likely to adhere to medication if they believe the benefits will outweigh the costs (Becker, 1974). In the present study, satisfaction with information in general was not significantly associated with non-adherence; however it is important to note that non-adherent patients were less satisfied with information received regarding the risk of having side-effects. This finding is concordant with previous research, suggesting that those who were non-adherent were less satisfied with the information they received compared to adherent patients (AlHewiti, 2003; Bowskill et al., 2007; Paton & Esop, 2005), therefore there is room for an intervention to improve this. The finding that non-adherent patients were significantly less satisfied with the information received about side-effects than adherent patients does support previous research (Gray et al., 2005). Further research could help determine whether increased information giving would increase satisfaction and adherence. This view is supported by NICE guidelines, which suggest an approach whereby information regarding medications is offered and potential side-effects/benefits discussed with the patient (NICE, 2009).

Weight gain was most prevalent side-effect reported, with patients reporting that they are highly concerned about it. Perceived concern about weight gain however was not found to

influence adherence. This finding is similar to a study which found that although 60% of patients reported weight gain as a side-effect, it was not related to missing medication (McCann et al., 2009). The high percentage of patients reporting weight gain and concern regarding this side-effect suggests that patients should be offered education early in treatment about side-effects, and perhaps signposting to services that could support weight loss efforts.

This study involved a random sample of FEP patients treated in real-world conditions, utilising structured questionnaires to measure adherence & satisfaction. A further strength of our findings is the strength of the logistic model. In this study, adherent patients were successfully predicted with 82% accuracy. This suggests the model is a good fit to the data, and this may be in part due to the sample and the relevant variables included. It should be noted that due to the cross-sectional design, conclusions about causality in this study cannot be drawn. Research indicates that patients who are less adherent are those who miss appointments (Sellwood et al., 2003), and are less likely to engage in research (Klingberg et al., 2008), therefore the sample used in the present study may not be generalisable to the wider FEP population. A further limitation is the use of a self-report measure of adherence, however they are the most common measure used throughout research (Velligan et al., 2006), are quick to administer, and are low cost (Stirratt et al., 2015).

Conflict of Interest: The authors have no conflict of interest to disclose.

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Table 1: Demographic characteristics of patients.

Characteristic	Total N=50	Adherent N=33 (66%)	Non-adherent N=17 (34%)	P Value
Age Mean (±SD)	28.43 (±5.9)	29.73 (±6.1)	26.12 (±5.0)	0.04
Contact with mental health services (months) Mean (±SD)	38.84 (55.9)	46 (±67.4)	24.94 (±12.9)	0.44
Gender N(%)				0.75
Male	32 (64.0)	22 (66.7)	10 (58.8)	
Female	18 (36)	11 (33.3)	7 (41.2)	
Ethnicity N (%)				0.49
Black British caribbean/african/other	24 (48)	17 (51.5)	7 (41.2)	
Other	26 (52)	16 (48.5)	10 (58.8)	
Education level N (%)				0.43
None	5 (10.0)	3 (9.1)	2 (11.8)	
School level	23 (46.0)	13 (39.4)	10 (58.8)	
University level	20 (40.0)	15 (45.5)	5 (29.4)	
Other	2 (4.0)	2 (6.0)	0 (0.0)	
Living situation N (%)				0.69
With family	24 (49)	15 (46.9)	9 (58.8)	
Without family	25(51)	17 (53.1)	8 (41.2)	
Unemployed N (%)	26 (52.0)	20 (60.6)	6 (35.3)	0.09
Medication Type N (%)				0.62
Oral	42 (85.7)	28 (87.5)	14 (82.4)	
Depot	7 (14.3)	4 (12.5)	3 (17.6)	
Remember medication name N (%)				0.16
Yes	43 (86.0)	27 (81.8)	16 (94.1)	
No	7 (14.0)	6 (18.2)	1 (5.9)	