Adherence to medication in bipolar disorder: a qualitative study exploring the role of patients' beliefs about the condition and its treatment

Jane Clatworthy[1], Richard Bowskill[2], Tim Rank[3], Rhian Parham[1] and Robert Horne[1]

[1] Centre for Behavioural Medicine, The School of Pharmacy, University of London
[2] Postgraduate Medical School, University of Brighton
[3] South Downs Health NHS Trust

Corresponding author:

Professor Rob Horne
Director
Centre for Behavioural Medicine
Department of Policy & Practice
The School of Pharmacy
University of London
Mezzanine Floor, BMA House
Tavistock Square
London WC1H 9JP

Phone: +44 (0) 20 7874 1270
Fax: 00 44 (0) 207 387 5693
Email: rob.horne@pharmacy.ac.uk

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Abstract

Objectives: Patients' perceptions of illness and treatment have been found to predict adherence to medication in many chronic conditions. This has not yet been fully explored in bipolar disorder. The aim was to use a qualitative methodology to explore in depth the beliefs about bipolar disorder and its treatment that are associated with adherence to medication prescribed for bipolar disorder

Methods: Sixteen adults prescribed prophylactic treatment for bipolar disorder completed semi-structured interviews about their perceptions of bipolar disorder and its treatment and their adherence to medication. Interviews were recorded and transcribed verbatim. Two researchers identified perceptions associated with nonadherence in the transcripts.

Results: Thirteen participants (81%) reported some degree of intentional or unintentional medication nonadherence. Intentional nonadherence was associated with patients' concerns about the prescribed medication, arising from the experience of side effects, but also from beliefs that regular use could lead to adverse effects in the future. Intentional nonadherence was also associated with doubts about the personal need for medication, which were related to perceptions of bipolar disorder (e.g. not accepting diagnosis, believing the condition is not controllable, believing it is not a chronic condition).

Conclusions: This study has identified some of the salient beliefs about bipolar disorder and its treatment that should be elicited and addressed in interventions to facilitate adherence to medication. Further quantitative work is justified to explore the utility of this approach in the development of interventions.

Keywords: Patient compliance; Illness perceptions, Treatment perceptions

Introduction

Around 40% of patients diagnosed with bipolar disorder do not adhere to prescribed medication (1). As nonadherence is associated with higher rates of relapse (2) hospital admission (3) and suicide (4), there is clearly a need for a better understanding of the reasons behind nonadherence in bipolar disorder and for effective interventions to facilitate adherence.

Whilst much of the existing research exploring nonadherence in bipolar disorder has focussed on demographic and clinical predictors of nonadherence, a recent review of adherence in bipolar disorder highlighted the need for more research that considers *active processes* in adherence to medication (5). For example, how people make decisions about whether or not to take medication and how people evaluate and manage the consequences of taking medication.

One theoretical approach to addressing nonadherence that emphasises the active role of the patient is the perceptions-practicalities framework (6). This approach conceptualises nonadherence as a variable behaviour with both intentional and unintentional causes. Unintentional nonadherence occurs when the patient's intentions to take the treatment are thwarted by lack of resources or capacity (e.g. forgetting or misunderstanding instructions). Intentional nonadherence is the result of a deliberate decision on the part of the patient and is best understood in terms of the beliefs and expectations influencing patients' motivation to begin and persist with treatment.

It follows that interventions to facilitate adherence are likely to be more effective if they are individualised to the needs of the patient and address both the perceptual and

practical barriers to adherence. Effective interventions to facilitate adherence to medication in chronic illness are currently elusive (7). This may be because few interventions have been developed around a suitable theoretical framework, as recommended in MRC guidelines (8). The perceptions-practicalities approach utilises Leventhal's self-regulatory model (9) and the necessity-concerns framework (10) to conceptualise the key beliefs influencing adherence.

Self Regulatory Model (SRM)

The SRM explains the cognitive processes underpinning people's response to health threats. Health threats may be internal (e.g. the experience of symptoms) or external (e.g. a medical diagnosis). People respond by building a mental map or illness representation to enable them to make sense of the threat and determine what to do about it. Illness representations have five components: identity, timeline, cause, consequences and control/cure. These can be thought of as the answers to five basic questions about the illness or health threat: What is it? How long will it last? What caused it? What effect will it have? Can it be controlled or cured? The answers people find to these questions form their mental map. Illness representations also have an emotional as well as a cognitive component. Research across a range of chronic illnesses, including bipolar disorder (11), has shown that illness-related behaviour is related to illness representations (12).

Necessity-Concerns Framework

The utility of self-regulatory theory in explaining variations in adherence to treatment is enhanced by considering beliefs about treatment as well as illness (10). In the

Necessity–Concerns framework the salient treatment beliefs are conceptualised as the patient's perceptions of the necessity of their treatment to maintain current and future health, compared with their concerns about the actual and potential adverse effects of their treatment. The utility of this framework in explaining adherence to treatment has been shown in a variety of chronic illness groups (13), including depression (14).

Research has shown that patients' beliefs about the need for medication are influenced by their illness representations (15) and concerns are often related to negative attitudes to pharmaceuticals as a whole and to beliefs about the long terms effects of medication or that regular use will lead to dependence or addiction (13). However, although research has identified that some concerns are common across treatments and illness groups, others are specific to the condition and treatment. For this reason an important first step in operationalising the framework for a particular condition is to carry out studies to elicit the particular beliefs within that patient/treatment group.

There is currently minimal research exploring patients' perceptions of bipolar disorder. Pollack and Aponte (16) conducted a qualitative study, whereby fifteen inpatients with bipolar disorder were interviewed about their perceptions of their condition. Patients reported models of bipolar disorder that were very different from the medical model of the condition. For example, one participant believed that their condition was a special gift from God, whilst another believed it was caused by masturbation. Results from this small sample of hospitalised patients (most of whom were hospitalised involuntarily), however, would not be generalisable to the majority of bipolar patients living in the community prescribed prophylactic treatment for bipolar disorder. Furthermore, the study did not explore in detail patients' perceptions of medication or adherence.

Although the Necessity-Concerns framework has not yet been tested in bipolar disorder, existing research appears to support the value of such an approach. For example, Keck et al. (17) reported that patients' perceived need for medication was a key predictor of adherence to medication. Concerns about medication have also been associated with nonadherence; for example, concerns about side effects (18; 19).

The aim of this study was to use the perceptions-practicalities approach as a framework to explore in depth the beliefs that people hold about bipolar disorder and its treatment and how such beliefs might be associated with adherence to prophylactic maintenance treatment for bipolar disorder. This information could be used to assess whether validated measures of illness perceptions (Illness Perceptions Questionnaire-Revised)(20) and treatment perceptions (Beliefs about Medicines Questionnaire) (21) address the key beliefs held by people with bipolar disorder that might be relevant to adherence decisions.

Method

Participants

Sixteen people with a diagnosis of bipolar disorder were recruited through consultant psychiatrists in a local NHS Trust. All participants were prescribed prophylactic treatment for bipolar disorder and were treated in outpatient clinics. The medications prescribed for bipolar disorder in the sample are displayed in Table 1. Twelve of the participants were female and four were male. The mean age was 54 years (range 38 to 69) The Young Mania Rating Scale (YMRS) (22) and the Hamilton Rating Scale for Depression (HRSD) (23) were conducted immediately prior to the interview. The aim was to explore adherence to prophylactic treatment for bipolar disorder and therefore people experiencing a severe manic or depressive episode would have been excluded from the study. All participants recruited met the study inclusion criteria of less than 19 on YMRS and less than 18 on the HRSD. A process of sampling to thematic saturation was used, whereby new participants were recruited and interviewed until no new themes were identified.

Insert Table 1 about here

Procedure

Participants were given the choice of being interviewed at their home (n=12), at their local outpatient unit (n= 2) or at the university (n=2). The interviews were conducted by two researchers; a Specialist Registrar in Adult General Psychiatry (who was not involved in the patients' care) and a health psychology researcher.

A semi-structured interview was conducted, using questions broadly based on the perceptions-practicalities framework (6). Initial questions were general (e.g. What do you think about your medication for bipolar disorder?) and were followed with prompts based on the theory (e.g. How necessary do you feel the medication is for you?, Do you have any concerns about the medication?). In addition to asking about illness and treatment perceptions, participants were asked about their nonadherence to medication, including stopping the medication, changing the dose of medication and forgetting to take medication. Care was taken to question in a non-judgemental manner.

Interviews were recorded on a digital audio recorder and were transcribed verbatim.

Analysis

The coding scheme was structured around the Self-Regulation Model and the Necessity-Concerns framework, as there is substantial support for these theoretical models in other illness groups. Transcripts were read by two independent researchers who identified statements in which participants' beliefs about bipolar disorder (i.e. Identity, Cause, Timeline, Consequences, Cure/Control) and beliefs about treatment (Necessity, Concerns) were related to adherence behaviour. Statements were coded according to the type of illness or treatment perception, using NVivo 2.0 software. As Necessity and Concerns are broad concepts, these were subdivided into more specific types of concerns and beliefs about the necessity of treatment.

Examples of unintentional nonadherence (i.e. nonadherence that was accidental and not directly related to participants' beliefs) were also identified.

Through a process of consensus and conciliation the researchers reached agreement on the coding of all of the statements regarding adherence to medication. The researchers selected example quotes from each theme to report here.

Results

Overview of adherence to medication

Of the sixteen participants interviewed, three did not report any nonadherence to medication, eight reported nonadherence in the past and five reported current nonadherence. Nonadherence took various forms. Whilst not taking prescribed medication and taking less than instructed were the most common forms of nonadherence, some participants reported taking more than instructed at times. For example,

P: I can remember the last time that happened, my god, and I hadn't been taking it [lithium] and I was taking a hell of a lot - you know, mouthfuls - to try and stabilise myself, but of course it's too far gone.
I: Right, so you stopped taking it for a while and then you tried to balance it out. Ok, so how much would you take then to compensate?
P: When you're high you don't really count to tell you the truth. Quite a lot.
(P1)

In addition, some participants reported experimenting with their medications.

I have been really bad sometimes when they prescribe me drugs - they give me large quantities of potentially fatal tablets that you can easily take an overdose accidentally or fiddle about. Because you feel so bad all the time, either up or down, you try and find combinations of drugs that make you feel better, and sometimes you might hit on something that will work for a little while and then it won't work any more…The only thing that I came up with is that if I take 200 mg of amisulpride and about 37 mg of dothiepine within 2 hours it would actually take away the paranoia and the manic activity - the hyper mania - completely. It takes 2 hours to work and then lasts about 24 hours, but it won't

work again for about 5 days. You can take 10 times that much and it won't do anything whatsoever, but once it has cleared your system completely and you take it again it works again and I don't have a clue why that is.
(P3)

Illness Perceptions

Identity

The Identity component of the self regulation model is considered to be a combination of the signs and symptoms associated with the illness and the label given to the illness. Whilst all participants reported having experienced symptoms associated with bipolar disorder (e.g. periods of being manic and periods of being depressed), some questioned their diagnosis or spoke of a period of denial over the diagnosis. Failure to accept a diagnosis of bipolar disorder appeared to be associated with nonadherence.

I think that part of the problem may have been initially when I was diagnosed I was rebelling against the fact that I had the label and not taking the medication as regularly as I should have been - that is probably why I might have relapsed.
(P16)

Cause

There was no obvious relationship between participants' belief about the cause of their bipolar disorder and their adherence to medication. Five participants believed that stress had caused their bipolar disorder, three thought that it was hereditary, two felt that it was due to physical/ chemical factors, four thought that it was a mixture of these factors and two did not know.

Consequences

All of the participants reported negative consequences of the condition on their lives.

It is a bummer. It is horrible. It has wrecked my life since I have been about 26.
(P4)

I think that it is one of the worst things that you could possibly have.
(P6)

However, several participants also reported positive consequences of bipolar disorder.

Hyper mania - you just talk and have ideas and come up with these wonderful ideas. The world is your oyster and you can't do anything wrong.
(P3)

Timeline

Patients' perceptions of the timeline of their condition appeared to affect their decision about whether or not to adhere to treatment. Several participants reported that it took a while to accept that bipolar disorder was a chronic condition and that medication needed to be continued long-term.

It took me a long time to realise that it wasn't going to [stop on its own]. Once I was feeling better and better, about six months down the line I would think to myself 'I am better, I am okay' and I would stop it or forget about it, and I would start to feel ill again and not realise it. It takes a while to accept it. …Personally I realise that probably for the

rest of my life I will be taking medication. Probably. You accept it, you can't do anything else. It took years.
(P14)

There was also evidence that a perception of bipolar disorder as a cyclical condition could affect medication taking, with perceived need for medication differing according to the stage of the cycle.

The last few months, or 6 months, I have only been taking one every day - sometimes another half - because of circumstances or whatever, the time gap between the last episodes. Because if I have an episode, I know what I am going to do is that I am not going to go high again. I am going to go low and stay low for 9 months…I can't see the point of taking something as a prevention for manic, when I know that I am not going to go manic.
(P6)

Amenability to cure or control

There was an association between believing in medication as a means of controlling bipolar disorder and taking medication. For example, one of the three people who reported being consistently adherent to medication expressed her confidence in the ability of medication to control the condition:

I: Is there anything that you think you can do to control the bipolar disorder?
P: Only by taking the injections, but I am a firm believer in them.
(P7)

In contrast, participants who had little faith in the role of medication in controlling bipolar disorder, or who thought that there were alternative ways of controlling the condition, appeared to be less likely to take it:

I: What about medication? Do you think that medication has a role in controlling bipolar disorder?
P: That is difficult, I tend to think that time would heal anyway. But it's a heck of gamble to just leave people exhibiting the sorts of symptoms that I was exhibiting and say 'in time they will be all right'. I think with me though, definitely, it was a question of time will tell - some of the medication I did not take, I was secreting it about my person or flushing it down the loo or whatever, I was not taking it.
(P9)

Beliefs about medicines

Necessity

There were several dimensions to patients' perceptions of the necessity of medication. Some participants reported that they believed in the *efficacy* of the medication. For example, this woman who reported high adherence:

I: How important do you feel that medication is?
P: Very important. I probably would not be here sitting and talking to you. I would be probably, like in the olden days locked away in a mad house or not even here. So yeah.
I: How do you judge whether or not it is effective?
P: By leading a normal life.
(P14)

Where people did not believe the medication was working, they appeared less inclined to take it. For example, this man who experimented with his medication reported:

P: I have had have every anti psychotic going virtually, every drug that they have available going and none of them work… and now I am at a point of where else can we go as we haven't got anything left.
I: Do you think that the combination of drugs that you are on at the moment is effective?
P: No. No. Sometimes they can make me feel better and sort of skim the surface, but if you have bad hallucinations, if you have large quantities of anti-psychotics they reduce them, but they don't get rid of them completely.
(P3)

Another dimension of treatment necessity was simply that it was necessary *because the doctor said so*. For some, this was because they appeared to *trust* the advice of their doctors.

I: Do you think that the medications are controlling your bipolar disorder?
P: I don't know now. I think that I would rather come off them and see what is happening by myself but I was advised not to do that. I do wonder why I don't come off them, but I see this Dr X and he is very charming and he says "No, there is a possibility that within the six months you could relapse, but after six months there is much less chance of relapsing and I do suggest you hang on until then". I say "all right then."
(P12)

For others, however, adherence appeared to be driven by a *fear of punishment* if they were not seen to by complying with the medical profession. For example,

P: Basically I don't want to be on any medication at all, but obviously I am so concerned that any failure to comply with the medical profession will put me back in a situation as before… My failure to take diazepam, I believe, before to calm me down, resulted in me

being taken to hospital - because I would not comply. If I had taken that and they had seen me calm, I believe that they would have gone away.
I: Do you think that you would get sectioned purely for not taking it? Or would there need to be some behaviour that would justify the sectioning?
P: In a way yeah. I see what you are saying. But in some ways I don't want to cause ructions, I want to be seen to be doing as I am told really.
I: Okay. Is there even a little bit of you that thinks that it might be helping in some way?
P:No.
(P5)

Concerns

There were also several dimensions to participants' concerns about medication. One concern that was frequently raised by participants in relation to nonadherence was that of side effects. Several participants reported lowering the dose of medication or not taking medication due to *physical side effects*.

But I have been against lithium because I had all sorts of strange side effects. One particularly was an earache … and there were other side effects as well which I had, so I said to them well you know I'm going to reduce it and about 3 years ago I went down to 200 [mg]. But I have prescribed for me 600 and I've been taking 200 now for going on nearly a year - no over a year now - and I'm not having any side effects that I had, so for me that's just right. And I think that could be encouraged - not to have a set amount per person if they say they're having side effects, just a little bit.
(P1)

More commonly reported than concerns about physical side effects, however, was a concern about *how the medications made participants feel*. In particular, participants reported 'not feeling themselves' or being limited in terms of productivity and creativity.

P: Lithium and valproate are the only stablisers that I have had - and the problem is that they all put you into zombie mode. I think that they make you feel slightly down. All you do is sit here and watch the tele - you won't do anything and you don't want to do anything. You have got no drive, lithium and valproate, you have no drive to do anything whatsoever.
I: Is that different from feeling depressed?
P: Yeah, it is sort of, it is feeling slightly miserable; not actually depressed, slightly miserable or maybe not too bad, but it totally takes away your will to do anything. I had no interest, apart from my boys, and even then I did not give them enough time. It takes away your life, it puts you on standby and you just function. It does not make your life better, to be quite honest. It is better than being really manic, the best is to be slightly hyper. You might have problems sleeping but generally you feel better. It gives you a drive to actually do something.
I: You are prescribed valporate at the moment?
P: Yes, but I don't take it as I just go into zombie mode. I call them standby drugs. I think that they have their place. If you are suffering from mania you have to stop it. I mean, you could hurt someone, or yourself, and you know, you would not realise that you have done it.
I: You would consider taking it again?
P: I have got it, and if I need it I would take it.
(BP3)

I used to see myself before bipolar being diagnosed as being more creative, more spontaneous and now I don't and I have put it down to the fact that I take lithium but I don't know how much of that is true. The longer it goes on with me taking lithium and if I take it for the rest of my life, the further away that I get from the person that I remember myself to be. I don't suppose that I will ever know.
(P16)

Several participants reported taking less medication than prescribed due to concerns about the *toxicity* of the drugs.

P: I am taking it regularly, just the one.
I: One tablet a day - is that what you are prescribed to take?
P: No. I think that he would like at least 1.5 perhaps 2.
I: Why do you choose not to take 2?
P: I think that it is too much - it is like saying take four panadol or aspirin. It is hard on the liver. Look in the news and you see the whole hype about the side effects there. Someone told me if you took too many you would be brain dead and I think that too many is 3 – 4 or something like that…It would actually kill you, can't it? There was that play on the tele a while back with a doctor who increased his wife's lithium and managed to kill her off like that.
(P6)

Another concern that appeared to be associated with taking less medication than prescribed was concern about *addiction* to medication, particularly with reference to benzodiazepines.

I am on Olanzapine 7.5mgs, Sodium Valproate 1200mgs, I take 15mg of Nitrazepam and I am on Ativan which I should theoretically take four times a day but I know how addictive it is so I only take it twice a day - in the morning and at night.
(P13)

Fear of addiction also appeared to be associated with a concern about *withdrawal effects* if medication was stopped.

What worries me is the side effects of coming off. It is more the withdrawal of it than the taking of it that worries me.
(P5)

Unintentional Nonadherence

The most common type of unintentional nonadherence took the form of *forgetting* to take medication. Participants reported that this was particularly common when they were becoming manic. For example:

P: Once you have got to a certain stage, you don't realise that you have got to that stage. You can tell the signs but you think oh it does not matter, take some medication and it will be all right. Then you get to the stage where you forget your medication and you don't take it. That is because you have forgotten to take it as you are having such a good time.
I: Do you think you're most likely to forget your medication when you start to go high?
P: As you are more active, you tend not to know the concept of time. You may be going out and doing stuff. You think it does not matter, I will take it the following morning. It says on the leaflet that you can take it the following morning, the problem is that once you have done that 4 or 5 weeks, 2 – 3 weeks the medication is not working any more. (P14)

One participant also reported being *confused* about how she was supposed to take her medications at times, which could lead to unintentional nonadherence.

Yeah one time when I came out of the hospital it wouldn't have been hard to get terribly confused with the medication. It is confusing, especially if it has changed and you are not really very good. You can easily make a complete mess up of it.
(P10)

Several participants reported strategies that they had in place to help prevent unintentional nonadherence. These included attaching medication-taking to other routine behaviours (e.g. taking medication after cleaning teeth), using dossett boxes/

having the pharmacist package the drugs in daily bubble-packs or having relatives, friends or support workers looking out for early signs of mania.

Discussion

The findings support a perceptions-practicalities approach to addressing nonadherence in bipolar disorder. There was evidence of patients making decisions about how to take their prescribed medication on the basis of their perceptions of bipolar disorder and its treatment. It is therefore important for health professionals to elicit and address patients' perceptions of their condition and treatment if they are to improve adherence to medication. A recent study of a collaborative practice model in bipolar disorder emphasised the importance of clinicians taking an active role in understanding patients' perceptions of bipolar disorder and its treatment, in order to form a patient-provider relationship that facilitates adherence (24).

This study also provided evidence of unintentional nonadherence due to practical barriers to adherence. Many participants provided examples of useful strategies for overcoming such barriers (e.g. dossett boxes, bubble-packed drugs).

The qualitative methodology applied allowed detailed information about the types of nonadherence to be elicited. Self-report assessment of nonadherence is often criticised for underestimating adherence levels (25). When questioned in a non-judgemental manner, however, participants appeared to be very open about discussing how they used their medication. Indeed, many of the types of nonadherence disclosed would not have been detectable by other methods. For example, if the 'gold standard' electronic monitors had been used, participants who were taking medication regularly but were only taking half the prescribed dose on each occasion would have appeared to have perfect adherence, as they would have opened their medication containers at the right intervals.

It is well recognised that some of the barriers to adherence are external to the patient, (e.g. fiscal constraints/ difficulties in ordering and collecting prescriptions)(26). These issues may have been underrepresented within our sample, due to the focus of the interval schedule on patients' perceptions of bipolar disorder and its treatment within the context of medication taking behaviour. However, all interviews began with open questions allowing patients to focus on the issues that mattered most to them. We cannot, of course, conclude that external factors were unimportant and further work is needed to assess the contribution of external barriers to nonadherence in bipolar disorder.

The qualitative methodology enabled a thorough exploration of patients' perceptions of bipolar disorder and its treatment, without being restricted by questionnaire-based measures. Most of the perceptions elicited are already addressed in questionnaire-based measures of illness and treatment perceptions (20; 21). Two themes, however, are not currently addressed. The first is concerned with acceptance of the diagnosis. Several participants reported that in the past they had not accepted the diagnosis of bipolar disorder and had not therefore been prepared to take medication for a condition that they did not believe that they had. Previous research has also emphasised illness denial as a major cause of nonadherence to medication (17; 27). This is not currently addressed in the Illness Perceptions Questionnaire. The second was the belief that it is necessary to take treatment to avoid being hospitalised. This is a belief that is quite specific to medications prescribed for mental disorder. Adams and Scott (28) also reported that concerns about hospitalisation were associated with adherence to medication. This is not currently addressed in the Beliefs about Medicines Questionnaire.

Once the Illness Perceptions Questionnaire and the Beliefs about Medicines Questionnaire have been adapted to include items reflecting these additional perceptions, two limitations of this qualitative research could be addressed through conducting a questionnaire-based study. First, the current qualitative study involves only a small sample and the results are therefore not generalisable. A quantitative study would include a larger, more representative sample. This would make it possible to compare the beliefs and adherence of different clinical and demographic groups. For example, one might expect differences in beliefs and adherence between those with bipolar I and bipolar II disorder, or between those with and without comorbid substance use and anxiety disorders.

Second, although the current study identified beliefs that appeared to be associated with nonadherence, it is not possible to quantify the relationship between the beliefs and adherence using this design. A questionnaire-based study would enable us to see how common different types of perceptions are amongst people with bipolar disorder and will allow the statistical exploration of the ability of patients' perceptions to explain nonadherence to medication.

In conclusion, further research is now justified using a larger sample to quantify the role of illness and treatment perceptions in adherence to medication in bipolar disorder. This study, however, provides preliminary evidence for the importance of eliciting and addressing patients' perceptions of bipolar disorder and its treatment to facilitate adherence to medication and optimum management of bipolar disorder.

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Table 1: Prescribed medication in the sample

Medication	Number of participants prescribed medication
Lithium	6
Valproate	8
Lamotrigine	2
Quetiapine	3
Olanzapine	2
Amisulpride	1
Haliperodol	2
Stelazine	1
Flupenthixol	1
SSRI antidepressants	3
Tricyclic antidepressants	1
Mirtazapine	1
Nitrazepam	3

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