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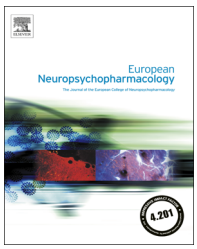

Nonadherence to antipsychotics: The role of positive attitudes towards positive symptoms ☆

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Abstract
Approximately 50–75% of all patients do not take their antipsychotic medication as prescribed. The current study examined reasons why patients continue versus discontinue antipsychotic medication. We were particularly interested to which extent positive attitudes towards psychotic symptoms foster medication nonadherence. An anonymous online questionnaire was set up to decrease response biases. After a strict selection process, 91 participants with schizophrenia spectrum disorders were retained for the final analyses. On average, 6.2 different reasons for nonadherence were reported. Side-effects (71.4%), sudden subjective symptom improvement (52.4%) and forgetfulness (33.3%) emerged as the most frequent reasons for drug discontinuation. Approximately one fourth of all participants (27.3%) reported at least one positive aspect of psychosis as a reason for nonadherence. In contrast, patients reported on average 3.5 different reasons for adherence (e.g., want to live a normal life (74.6%) and fear of psychotic symptoms (49.3%)). The belief that paranoia represents a survival strategy (subscale derived from the Beliefs about Paranoia Scale) was significantly associated with nonadherence. Patients' attitudes toward medication and the individual illness model need to be carefully considered when prescribing medication. In particular for patients who are likely to discontinue

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psychopharmacological treatment complementary or alternative psychological treatment should be sought because of a largely increased risk of relapse in the case of sudden drug discontinuation.

1. Introduction

Following the introduction of chlorpromazine in the early 1950s, antipsychotic medication has replaced invasive and potentially life-threatening treatments such as insulin shock or brain surgery and is since considered the gold standard for the treatment of schizophrenia (Doroshow, 2007; Feldman and Goodrich, 2001). Antipsychotics are effective for relapse prevention (Alvarez-Jimenez et al., 2011) as well as the treatment of acute symptoms at a medium effect size (Leucht et al., 2009). Despite their undisputed merits, a large number of patients show little symptom improvement and even the new generation of antipsychotic drugs often cause serious side-effects (Lambert and Naber, 2012; Schimmelmann et al., 2005; Woo et al., 2009). It has been estimated that half to up to three quarters of the patients with schizophrenia spectrum disorders do not take their antipsychotics as prescribed (Byerly et al., 2007; Lambert et al., 2010; Velligan et al., 2009).

There are various reasons why patients do not take medication or even discontinue completely. The most well-established reasons pertain to lack of insight (David, 1992; Kemp and David, 1995), medication side-effects or non response and poor therapeutic alliance (Byerly et al., 2007; Miller, 2008). Less well researched factors that have been added to this enumeration relate to psychological motives such as fear/avoidance of stigma (Hudson et al., 2004; Tranulis et al., 2011) and cognitive factors such as forgetfulness (Moritz et al., 2013; Moritz et al., 2009) and denial that biological factors are relevant to the disorder (Wiesjahn et al., 2014).

Few studies addressed whether positive attitudes towards psychopathological symptoms may also play a role in non-adherence. While many patients perceive their positive symptoms (i.e., hallucinations and delusions) as predominantly agonizing, several studies suggest that an important subgroup have positive or at least ambivalent attitudes towards their symptoms (Chadwick and Birchwood, 1994, 1995). To illustrate, over 60% of patients with schizophrenia ascribe auditory hallucinations some positive effects such as relaxation and reassurance (Miller et al., 1993). Auditory hallucinations are also occasionally perceived as surrogate companionship and comfort (Jenner et al., 2008; Morrison et al., 2004). Some patients even worry that their hallucinations might disappear after medical treatment (Copolov et al., 2004). Indeed, we recently found that a subgroup withdraw medication because they missed the voices (Moritz et al., 2013; Moritz et al., 2009). Ambivalent attitudes also exist for delusional beliefs. According to a recent study (Sundag, 2012) some paranoid patients believe that they are imparted with special powers. This belief increases their self-esteem, particularly if their powers exceed those of their persecutor(s). Other studies report that ambivalence is also experienced towards paranoid ideation and loss of ego boundaries (Moritz et al., in press) which may contribute to low adherence as well. Some patients even view paranoia as a subjective survival strategy (Morrison et al., 2005) and one recent study indicates that this might be relevant to adherence (Wiesjahn et al., 2014).

Another under-researched aspect pertains to the relationship between a patient's subjective illness model and adherence (David, 1992). Research shows that many patients attach meaning to their psychosis (Klapheck et al., 2012). Thus, treating patients exclusively with antipsychotic agents without any psychotherapeutic intervention (only a minority of patients receives cognitive-behavioral therapy (CBT) or other psychotherapeutic interventions) is perceived as non-validating by many patients as it implicitly negates biographical factors such as abuse or neglect. Accordingly, in prior studies approximately one fourth of the respondents disclosed that they did not take their medication as this would mean to acknowledge that all they had experienced was untrue (Moritz et al., 2013; Moritz et al., 2009).

We aimed to confirm and extend prior findings on positive attitudes towards symptoms and adherence. While prior studies focused on reasons for nonadherence, the present study also inquired about reasons for adherence. Few studies have looked at the frequency of reasons that lead to adherence versus nonadherence in parallel. A recent investigation (Matza et al., 2012) using the Reasons for Antipsychotic Discontinuation Interview (RAD-I) observed that patients reported somewhat more reasons for continuation ($M=3.4$) than for discontinuation ($M=2.8$), whereby the clinical setting might have overestimated adherence due to selection biases (Ascher-Svanum et al., 2010). The present study was set up over the Internet to foster open responses (i.e., clinical interviews may inflate false-positive ratings for adherence). We took several precautions recommended in the literature to ensure valid responses such as reliability checks and administration of lie questions (Moritz et al., 2013). Unlike our prior studies, for the present study we asked about the intake of the last prescribed drug and not about lifetime adherence (i.e., prior prescriptions) to make the assessment less prone to memory biases in view of compromised memory in the population (Fioravanti et al., 2012). We investigated whether patients would provide more reasons for drug nonadherence than adherence and whether positive attitudes towards positive symptoms would be associated with nonadherence.

2. Experimental procedures

2.1. Recruitment

Participants were recruited via German online discussion fora for people with psychosis (e.g., *Schizophrenie-Netz-Selbsthilfe Forum*,