

A study of compliance with antidepressant medication in elderly depressed Egyptian patients

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Index

List of abbreviations	3
Acknowledgements	4
Summary	5
Introduction	11
Hypothesis / Aim of the work	13
Chapter I: Compliance with medication	14
Chapter II: Depressive disorders in the elderly:	27
Chapter III: Theoretical Models of Compliance	35
Chapter IV: Predictors of compliance with antidepressants in the elderly:	42
the published literature	
Subjects and Methods	53
Results	58
Discussion	81
Conclusions	97
Recommendations	98
References	99
Appendix	127
Arabic Summary	

List of Abbreviations

BMQ: Beliefs about medicines questionnaire
CI: Confidence Interval
CIS-R: Clinical Interview Schedule- Revised
CSM: Common Sense Model
DALY: Disability Adjusted Life Years
GAM: Global Adherence Measure
GMSS-DS: Geriatric Mental State Schedule-Depression Scale
GP: General Practitioner
HAM-D: Hamilton Depression Rating Scale
HBM: Health Beliefs Model
ICD-10: International Classification of Disease – Tenth Edition
MAOI: Monoamine Oxidase Inhibitors
MARS: Medication Adherence Rating Scale
MEMS: Medication Events Monitoring System
MMSE: Mini Mental State Examination
QPE: Questionnaire on patient education
RR: Risk Ratio
SCM: Social Cognition Models
SD: Standard Deviation
SE: Side Effects
SNRI: Serotonin and Noradrenaline Reuptake Inhibitors
SOC: Stages of Change Model
SSRI: Selective Serotonin Reuptake Inhibitor
TCA: Tricyclic Antidepressant
TM: Transtheoretical Model
TPB: Theory of Planned Behaviour
TRA: Theory of Reasoned Action
UKU: The Udvalg for Kliniske Undersøgelser Side Effects Rating Scale

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Abstract

This study investigated the factors associated with compliance with antidepressants in a population of 111 elderly outpatients. 56% of patients complied with medication 80% of the time or more using self-report measures. Sociodemographic and clinical variables did not show a significant relation to compliance. Severity of depression was negatively and significantly correlated with compliance. Specific beliefs about antidepressants are strongly correlated with compliance. Patients with negative beliefs about medications in general and patients with perceived medication side effects were less compliant .

Key Words :

Compliance – Antidepressants – Elderly – Depression – Beliefs about – medicines – side effects .

Summary

Summary

The aim of this study is to examine the relationship between elderly depressed subjects' compliance with antidepressants and their knowledge of and beliefs about the medication and to look at other possible predictors of compliance.

Studying compliance is fraught with difficulties. The first problem is defining compliance, most studies take an arbitrary cut-off of 80% of tablets, but this has not been consistent and other criteria have been used in different studies, including response to treatment (outcome orientated measures). Measuring compliance is not straight forward either; patients tend to overestimate their intake of tablets when self report measures are used, serum level estimates are inaccurate for psychiatric medications and using the “gold standard” Medication Events Measuring System (MEMS) only measures the number of times the medication bottle has been opened, but not if and how many tablets have been taken.

Predicting compliance has generally been inconsistent between studies. Patient, illness, physician, treatment setting and medication factors have been studied extensively but yielded contradictory findings.

Disorders on the depression spectrum are common in the elderly, causing a high level of morbidity and higher mortality. Antidepressants are effective treatments for recurrent depression in the elderly.

The study was conducted on 111 Egyptian patients frequenting psychiatry outpatient clinics in Cairo and Ain Shams University Hospital. Patients were invited to participate in the study and informed consent was obtained. Carers accompanying patients were also invited to participate and 33 agreed to complete the relevant carer questionnaires.

Compliance was assessed using a global adherence measure (GAM) with five anchor points ranging from never took my tablets to always took medication as prescribed. The Medication Adherence Rating Scale (MARS) was also used to assess compliance and was validated against the global adherence measure.

Potential predictors of compliance included sociodemographic variables, clinical and medication variables, severity of depression, assessed using the Geriatric Mental State Schedule - Depression Scale (GMSS-DS), beliefs about medicines in general and antidepressants in specific, assessed using the Beliefs About Medicines Questionnaire (BMQ), severity of side effects assessed using the UKU side effects rating scale, educational messages regarding the use of antidepressants assessed using the Questionnaire on Patient Education (QPE) and cognition was assessed using the Minimental State Examination (MMSE).

The tools were translated backwards and forwards and trialled on a group of elderly patients to assess their comprehensibility in Egyptian Arabic.

Carers were assessed for their beliefs about medicines in general and asked to corroborate response on the compliance scales if they were involved in administering medications to patients.

Results were entered on SPSS version-15 for statistical analysis.

Sample characteristics

The mean sample age was 61.3 years 36 (32.4%) males and 75 (67.6%) females. Seventy four participants (66.7%) were married and thirty four (30.6%) were widowed. More than half the participants (53.2%) were living with spouse and children. Nine participants (8.1%) were living with spouse only and eight (7.2%) participants were living alone. Other living arrangements included twenty seven (24.3%) patients living with their children and 8 (7.2%) patients living with other family members such as siblings or cousins. Seventy three (65.8%) participants were illiterate and twenty two (19.8%) had basic literacy skills. Only five (4.5%) participants completed secondary education. Seventy Participants (63.1%) were housewives and only eleven (9.9%) were in retirement.

Clinical Characteristics

Nearly half the patients in the sample had a diagnosis of dysthymia, 36 patients had a diagnosis of recurrent depressive disorder (20 males and 16 females Participants were on average prescribed 2.9 medications (± 1.68) in total. The mean number of

prescribed psychiatric medications was 1.64 ($\pm$ 0.80). The average duration of depressive illness was 10.25 years ($\pm$ 10.6 years). 78% of the participants were continuously on antidepressants since the medication was initially prescribed. The mean duration since the first prescription of antidepressants was 6.9 years ($\pm$ 8.35). 53% of patients (N=47) identified the reason for their antidepressant prescription as treatment of depression. 36.1% identified this as treatment of sleep disturbance or somatic complaints.

Maprotiline was by far the most commonly prescribed antidepressant. It was prescribed to sixty eight patients (61.3%) (mean dose 95.7 mg/day - Range 25-225 mg).

Descriptive statistics for Clinical Rating Scales

The GAM is a simple questionnaire, which asks the patients to describe how often they forget to take their medications. 45% of patients said that they were fully compliant and only 6 patients (5.4%) reported never complying with their prescription. Scores on the MARS give an indication of how compliant patients are, ranging from 0 to 10 with higher scores indicating better compliance. The mean score on the MARS was 6.69 ($\pm$ 2.25).

The mean score on the 33 item GMSS-DS for assessing severity of depressive symptoms was 27.5 ($\pm$ 14.88). The Minimum score on the scale is 0 indicating absence of depressive symptoms and the maximum score is 73. The Beliefs about medicines questionnaire was used to assess the cognitive representation of medication. This is comprised of four subscales, two subscales about beliefs about medicines in general and two specific subscales for the beliefs about prescribed medicines. In our sample the patients received and recalled 4.79 ($\pm$ 3.48) educational messages regarding the use of antidepressants on average out of a total of 18 (educational messages: mean 2.54 ($\pm$ 2.04) and cognitive behavioural strategies: mean 1.97 ($\pm$ 1.73)). Side effects were rated on a UKU Rating Scale from 0 to 3 depending on severity (0 = absent side effect, 3 = severe). Scoring was based on patient's perception of the side effects and their relation to the prescribed antidepressant.

The mean score on the MMSE was 23.24 (SD $\pm$ 4.50). Two patients had a diagnosis of dementia.

33 carers of participating patients provided information on their general beliefs about medication. Their mean scores were higher than the patients mean scores on both scales (Carer BMQ Overuse scale mean score = 3.0 ± 0.93 compared to 2.74 ± 0.84 for patients, and Carer BMQ Harm scale mean score 2.78 ± 0.96 compared to 2.70 ± 0.90 in patients). The higher scores on both scales indicate less healthy attitudes towards medicines in general.

Sociodemographic variables and compliance

There was no correlation between MARS compliance scores and age and no significant difference in the mean scores on the MARS scale between males and females. There was no significant difference in mean MARS scores between married and widowed patients (which constituted 97% of sample). Level of educational attainment did not correlate with MARS scores. Patients who did buy their antidepressants from an outside pharmacy were not different on the mean MARS scores from patients who did not. One way analysis of variance did not show a statistically significant compliance difference between different living arrangements, or occupation.

Clinical Variables and compliance

MARS scores did not correlate with duration of illness, duration of treatment with antidepressants, total number of prescribed medication or total number of psychiatric medication.

Correlation between MARS and the clinical rating scale was conducted using Spearman's correlation for ordinal data. Severity of depressive symptoms as measured by the GMSS-DS was significantly correlated with compliance on the MARS in a negative fashion i.e. non compliant patients suffered from more severe depressive symptoms ($r = -0.5$, $p < 0.01$). There was no correlation between general BMQ overuse scale and compliance on the MARS. There was a weak significant ($P < 0.05$) negative correlation between the general BMQ Harm subscale and the MARS. This correlation would suggest that patients who believe medication can generally be harmful are less compliant. Specific BMQ is formed 2 subscales, by combining the 2 subscales a necessity / concern differential can be extrapolated. The BMQ specific

necessity scale was correlated with the MARS ($r = .36$, $p < 0.01$). A significant negative correlation ($r = -0.33$, $p < 0.01$) was also found between the specific concern subscale of the BMQ and the MARS. Patients with stronger beliefs in the necessity of and fewer concerns about antidepressants (high scores on the necessity subscale and low scores on the concern subscale) were more compliant. The Necessity-Concern Differential was accordingly correlated with the MARS ($r = 0.527$, $p < 0.01$). This is the strongest correlation found in the study, and is highly significant.

There was a negative correlation between medication side effects and compliance ($r = -0.31$, $p < 0.01$). Patients with more severe reported side effects were less compliant. This correlation was found with psychiatric side effects such as difficulty in concentrating and poor memory ($r = -0.30$, $p < 0.01$) and autonomic side effects such as dry mouth and urinary retention ($r = -0.31$, $p < 0.01$).

There was no significant correlation between the number of educational messages on antidepressants (QPE) and the level of compliance. This correlation became significant after removing the outliers (Spearman's Rho = 0.22, $p = 0.03$). This correlation was found with the educational messages (Spearman's Rho = 0.21, $p = 0.03$), but not with cognitive behavioural strategies.

There was no correlation between MMSE score and compliance with antidepressants. Only 2 of our patients had a diagnosis of dementia. It is worth noting that 65% of the subjects were illiterate and 20 % had only basic literacy skills.

Significant correlations with compliance (measured using the MARS) were entered in the linear regression model. These were specific beliefs about medicines (measured by the BMQ - specific), the harm subscale of the general BMQ scale, severity of depressive of symptoms (measured by the GMSS), psychiatric and autonomic side effects (measured by the UKU side effects rating scale) and the educational messages about antidepressants (measured by the QPE). Preliminary analysis was conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. 4 offending cases were identified and removed from the final analysis to prevent skewing of results. The MARS score as a measure of compliance was the dependent variable. In this model compliance increased with higher scores on the necessity - concern differential (Beta = 0.37, $p < 0.001$). Linear regression was conducted using the subcomponents of the scale, which had the following Beta

values: BMQ specific necessity Beta= 0.32 $p < 0.001$, BMQ specific concern Beta = -0.21, $p = 0.012$. Thus compliance increased with necessity and decreased with concern. Compliance also increased with the number of educational messages (QPE) given on antidepressants (Beta = 0.19, $p = 0.013$) and concerns about harmful effects of medicines in general (Beta = 0.03, $p = 0.686$). This model predicted 52.5 % of the variance $F = 15.178$, $p < 0.001$.

The results of the study showed that in a sample of elderly depressed Egyptian patients self presenting to psychiatric outpatient clinics around 56% of patients complied with medication 80% of the time or more using self report measures. Sociodemographic variables including age, sex marital status, educational attainment, occupation and living arrangements were not significantly associated with compliance. Clinical variables such as diagnosis duration of illness, duration of treatment, number of prescribed medications and affordability did not show a significant relation to compliance. Severity of depression was negatively and significantly correlated with compliance. Most importantly Specific beliefs about antidepressants (more necessity and fewer concerns) are strongly correlated with compliance and the necessity/concern differential was the strongest predictor of compliance with medication in our sample. Patients with negative beliefs about medications generally causing harm and patients with perceived medication side effects, mainly psychiatric and autonomic, were less compliant.

Our results also showed that receiving educational messages about antidepressants is weakly associated with better compliance and that poor cognitive performance in non demented patients does not correlate with compliance and that's carers' general beliefs about medications are not correlated with subjects' compliance.

Introduction

Introduction

Compliance with medication is a complex phenomenon due to the numerous variables involved in its determination. Physicians struggle to understand why patients choose not to take prescribed medications, having prescribed them with knowledge of the illness and learned – even evidence based - ways of treating it. In psychiatry this is complicated by patients' insight to their illness (or lack of) and sometimes poor recognition of the need for treatment.

When patients do recognise they are unwell, they may not think medication is what they need, they may not always be sure their treating physician knows best and some may find enduring the illness easier than swallowing the tablet.

Factors that influence the patients' decision to take medications may be personal, related to the illness, the physician or the medication. Personal factors include sociodemographic variables, knowledge of the illness, and beliefs about the illness and the available treatments. Factors related to the illness are particularly relevant in psychiatry as insight may not always be intact and due to the chronic nature of most psychiatric conditions, including depressive disorders. The severity of illness is another important variable. Patients suffering from a milder disorder may be less inclined to endure the treatment and side effects. More severe forms of the illness, especially psychotic depression, may be associated with poor insight. Doctor –patient relationship is another important variable, as doctors may be the major source of information about the illness, treatment and side effects. And finally the prescribed medication, its mode and frequency of administration, its efficacy in treating symptoms and side effects profile are significant variables affecting compliance.

Depression is a relatively common morbidity in community dwelling elderly with prevalence rates ranging from 4 to 16%. It is the fourth leading cause of disease burden globally, accounting for 4.4% of total disability adjusted life years (DALYs). Antidepressant medications are effective treatments for depression in the elderly, and the newer generations of drugs have a much better tolerated side effects profile.

Noncompliance with antidepressants is an important factor in increasing the burden of the disease.

Attempts to understand the complex nature of compliance started in the 50s. Social cognition models to explain health related behaviour, including compliance have been devised. The Health belief model, the Theory of Reasoned Action, the Theory of Planned Behaviour, the Transtheoretical Model and the Self Regulatory Model attempted to explain the theoretical underpinnings of compliance with varying degrees of success.

This study attempted to investigate the factors associated with compliance with antidepressants in an elderly population in Egypt. Factors investigated included sociodemographic variables, medication related factors, severity of depressive symptoms, beliefs about medicines in general and antidepressants in particular, knowledge about antidepressants, side effects and cognitive decline.

Carers in this particular demographic may also have an impact on compliance; hence their beliefs about medicines in general were also investigated.