

## Brief report

# A comparative study of subjective experiences related to driving among outpatient psychotropic users and controls in Ragama, Sri Lanka

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### Background

Difficulties in driving may occur due to the effects of psychiatric disorders or psychotropic medications.

### Aim

To identify and explore the impact of illness and medications on the driving of patients visiting an outpatient clinic.

### Method

A retrospective-cohort design was used. The data was collected using a semi-structured, interviewer-administered questionnaire among consecutive patients with schizophrenia or bipolar disorder. An age, gender and vehicle matched control group was obtained.

### Result

A total of 2887 consecutive clinic patients were asked

about driving and 57 (1.9%) who had driven a vehicle regularly during the last 12 months were included in the study group. A majority were in the 30-45 year category (47%). All were men and a majority were motor-bike riders (53%). Collision-accidents were experienced by 42% of participants during the last 12 months.

### Conclusion

The patient group had lower hours of driving per week, less subjectively claimed earning per day and more with at least one collision-accident during the past year compared to the control group.

**Key words:** Automobile driving, psychotropic drugs, comparative study.

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## Introduction

Driving a vehicle may be required as a professional requirement or as part of travelling in day-to-day life. It has become an essential part of life in the 21st century. Inability to drive may reduce earning capacity or hinder a person's ability to fulfil their occupational and social roles.

Difficulties in driving may occur due to psychiatric disorders or treatment given for psychiatric illness (1). Psychotropic medications may affect visual, cognitive and motor skills that are required for safe driving (2). For example, a medication with anticholinergic side effects may cause blurred vision. Antipsychotics could also impair the cognitive abilities needed for driving (2). They are also known to cause extrapyramidal side effects including stiffness and tremor, which might impair the motor skills required for safe driving (3).

Psychiatric disorders such as schizophrenia can affect the cognitive abilities of the person with the illness (4). Perceptual abnormalities including auditory and other

hallucinations may be associated with impaired attention, which is essential in safe driving (5). Parkinson's and Huntington's diseases could impair the motor skills relevant for driving (6, 7).

Almost all categories of medications acting on the central nervous system have the potential to influence the driving ability of an individual. Evidence shows that anxiolytics, antipsychotics, antidepressants, anti-convulsants and benzodiazepines may all adversely affect the driving capacities of patients prescribed these medications (8-10).

The clinician who prescribes a medication with a potential impact on driving has an obligation to inform the relevant client regarding the possible dangers. This may mean that the patient may have to stop driving for a certain period. There are no clear guidelines for driving for persons with psychiatric illnesses in Sri Lanka. However regulations related to driving state that a person who is suffering from a psychiatric disorder may have to be assessed by a psychiatrist before the licence is issued (11).

A recent study on Sri Lankan drivers reported a high prevalence of road rage and significant associated psychological distress among them (12). But there are no published studies on drivers with psychiatric disorders treated with psychotropics for Sri Lanka. Since the number of vehicles in the country is rising rapidly, it is likely that more individuals on psychotropics would be driving in the future. The objective of this study was to assess the driving and problems related to driving, in a group of patients suffering from psychiatric disorders who were prescribed psychotropic medications.

## Methods

A retrospective cohort study design was used. The study was conducted at the psychiatry outpatient clinic of the Colombo North Teaching Hospital, Ragama. Patients diagnosed to be suffering from schizophrenia or bipolar affective disorder with psychotic symptoms, according to the 10th edition of International Classification of diseases were included in the study. A convenient sample of adult patients using at least one antipsychotic and who had driven regularly during the last 12 months were invited to participate. Regularity of driving was defined for study purposes as driving a motor vehicle at least once weekly. An age, gender and vehicle matched control group was obtained from the non-patient, non-staff drivers visiting the Ragama hospital.

A semi-structured interviewer-administered questionnaire was used to collect the data. Details regarding driving was obtained from the relevant participant, and clarified with collateral information from a family member in all participants. The details on the diagnosis and medications were gathered from the hospital records. The statistical significance of the associations for mean values was calculated by the independent t-test and for nominal parameters by the chi-square test using the SPSS software. We obtained written informed consent from all the participants and approval of the Ethical review committee of Faculty of Medicine, University of Kelaniya.

## Results

A total of 2887 consecutive clinic patients were asked about driving and 57 (1.9%) who had driven a vehicle regularly during the last 12 months were included in the study group. The control group also included 57 participants. All drivers were men, as no female patients were driving regularly. A majority were in the age category of 30-45 years (47%), followed by 26% of the participants each in the 45-60 year and 18-30 year age categories respectively. Among the drivers, motor-bike riders were the commonest (53%) followed by trishaw drivers (37%) and drivers of cars (5%).

In the patient group most participants drove on average for 1-5 hours (53%) per week. Regarding the distance,

37% reported having covered 50-100 km and 26% covered 10-50 km on average per week. The reported average earning per day via driving was Rs. 500-1000 in 27% and Rs. 1000-2000 in 26% of participants. Among the participants, schizophrenia was the diagnosis in 53% and the rest had bipolar affective disorder with psychotic symptoms. Olanzapine was prescribed for 42% and risperidone in 31%. Clinically detectable extrapyramidal symptoms were seen among 31% of study group participants. Day-time sedation and blurred vision were reported by 32% and 11% of the participating patients respectively. Among the patient group 21% claimed they had to drive despite difficulties, in order to earn a living. A minority of 11% believed their driving to be improved with medications.

For study purposes, a collision accident was defined as a situation where the participant's vehicle had collided with another vehicle, pedestrian or property. At least one collision accident was experienced by 42% (n=24) of the study group compared to 23% of the control group (n=13) during the last 12 months ( $t = 4.84, p = 0.03$  at CI 95%). This difference occurred despite the higher hours of driving reported for the control group compared to the patient group. The mean average hours of driving per week, for the two groups were 5.17 and 8.67 hours respectively ( $t = -3.89, p = 0.001$  at CI 95%). The cost of damages due to collision accidents ranged from Rs. 2500 to 150,000 in both groups. Compared to the control group there was a statistically significant reduction in the subjectively claimed earning per day in the study group ( $t = -1.97, p = 0.04$  at CI 95%).

## Discussion

In a study conducted in the same hospital in 1998 among patients with epilepsy, 24.8% of the participants were found to be driving a vehicle (13). In contrast, only 1.9% of persons drove regularly, from amongst the 2887 psychiatric patients screened for this study. Even though the values may not be directly comparable, this suggests the potential difference between psychiatric patients and a group of patients with a chronic medical disorder. Similarly, a study from neighbouring India has shown that negative attitudes towards mental illness, contributes to exclusion from employment (14).

The patient group on psychotropics had a statistically significant lower amount of hours of driving per week and on average, earned less per day compared to the control group. This may be due the effects of illness or medications, or secondary to stigma associated with mental disorders (1-4,14).

More patients compared to controls, had at least one collision accident during the last 12 months, despite driving for a lesser duration. This finding could have been influenced by several confounders, such as the road and vehicle condition and the time of driving.

Despite this, the higher rate of at least one collision accident among the patients, should alert the clinician regarding potential dangers related to driving. There is a need for formulation of local guidelines on driving for patients with mental disorders, as decisions regarding this important issue should take into account both the patient's rights and safety of the public. The time has arrived for the mental health professionals to undertake this task in collaboration with government policy makers. Finally, the authors propose that the results of this study could serve as a stepping-stone for researchers to use more advanced technology and further study how psychiatric illness and treatment may effect driving in Sri Lanka.

### Declaration of interest

None declared

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