

Psychiatric disorders and Impulsivity among Egyptian Truck Drivers and their association to Driving Behavior

Thesis

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Dedication

*This work is dedicated to the pure soul of **Abdel Wahab Yousry** who we lost in a car accident last year may Allah forgive him.*

You will always be remembered.

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LIST OF ABBREVIATIONS

BIS	Barratt's impulsivity Scale
CAPMAS	Central Agency for Public Mobilization and Statistics
DALY	Disability adjusted life year
e.g.	Example
EU	European union
FMCSA	Federal Motor Carrier Safety Administration
IDSC	Information and Decision Support Center
IQR	Inter Quartile Range
MDD	Major Depressive Disorder
NIDA	National Institute on Drug Abuse
NSAID	Non-Steroidal Anti-Inflammatory Drugs
ODBQ	Occupational Driver Behavior Questionnaire
PSQI	Pittsburgh Sleep Quality Index
PTSD	Post Traumatic Stress Disorder
SCID I	Structured Clinical Interview for DSM IV Axis-I disorders
SSRI	Selective Serotonin Reuptake Inhibitor
TCA	Tricyclic Antidepressants
UN	United Nations
WHO	World Health Organization

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INTRODUCTION

There are 1.35 million road traffic deaths worldwide each year, 92% of these deaths occur in low- and middle-income countries which have 53% of the world's registered vehicles. Low- and middle-income countries had higher road traffic fatality rates (18.3 and 20.1 per 100,000 population, respectively) compared to high-income countries (8.7 per 100,000 population). The African region had the highest road traffic fatality rate, at 24.1, while the European region had the lowest rate, at 10.3 (*WHO, 2018*).

Thousands more are injured, some suffering of long-term disabilities as a result. Almost half of all road crash victims are drivers or passengers of vehicles, while one-fifth are pedestrians (*WHO, 2018*).

Heavy trucks are responsible for at least 39.1% of the road traffic crashes that happened in Egypt in 2007 (*IDSC, 2008*). According to a report by the Ministry of Interior in 2008, two out of three accidents involve heavy trucks. According a recent study 2013, about 47.5% of heavy trucks exceeded the speed limits on Cairo ring road (*Hoe et al., 2013*).

Road crashes are the most common cause of work-related injury, death, and work absence in a number of countries (*Newnam et al., 2005*). Avoiding those crashes is a major concern for organizations and their managers because they are very expensive for them than any other occupational injury, in addition to having negative impact upon the organization(*Salminen, 2008*).

Many factors have been associated with work-related road traffic injuries; lack of sleep, lack of rest breaks, shift work, long working hours, and lack of maintenance of the vehicle brakes and steering systems (*Robb et al., 2008*). Three out of five crashes can be attributed to behavioral factors. These factors can be classified into factors that reduce capability to drive such as inexperience, old age, diseases, drug abuse, fatigue and acute psychological stress, and factors that promote risk taking such as speeding, disregard of traffic regulations, suicidal behavior and compulsive acts (*Petridou and Moustaki, 2000*).

In their report on Psychiatric Disorders and Commercial Motor Vehicle Drivers, FMCSA (Federal Motor Carrier Safety Administration) stated that the medical expert panel recommended that all individuals with a history of psychiatric disorders including psychotic, bipolar, major depressive, obsessive compulsive and anti social personality disorders should undergo additional medical

and psychiatric evaluation to assess their functional ability to drive. They also recommended that this evaluation should include cognitive impairment, decreased concentration, suicidal thoughts, aggression and impulsive behavior (*Metzner et al., 2009*).

Impulsivity is defined by Moeller and coworkers, in 2001, as “a predisposition toward rapid, unplanned reactions to internal or external stimuli without regard to the negative consequences of these reactions to the impulsive individual or to others”(*Moeller, 2001*). It was found to be a stronger predictor of risky behavior which leads to involvement in accidents (*Jakubczyk et al., 2013*).

In addition, drugs used to treat psychiatric disorders (as antipsychotics, antidepressants and anxiolytics) affect the driving ability of individuals in variety of ways including sedation and psychomotor impairment (*Metzner et al., 2009*).

There is paucity in researches exploring this demanding area in the life of Egyptian truck drivers and it is important to conduct such a study that can determine the rate of psychiatric disorders and their relation to driving behavior.

AIM OF WORK

- To measure the frequency of psychiatric disorders among a group of Egyptian truck drivers.
- To determine the association between psychiatric disorders and Egyptian truck drivers driving behavior.
- To determine the relation between impulsivity and Egyptian truck drivers driving behavior.

REVIEW OF LITERATURE

Epidemiology of Road Traffic Accidents

According to the World Health Organization (WHO) global status report on road safety; nearly 1.35 million people die each year on the world's roads, and another 20 to 50 million sustain non-fatal injuries because of road traffic crashes (*WHO, 2018*).

Road traffic injuries are estimated to be the 8th leading cause of death worldwide, with an impact like that caused by many communicable diseases (*Lozano et al., 2012*).

The current trends suggest that road traffic injuries will become the 5th leading cause of death by 2030, with the difference between high- and low-income countries further emphasized. Road Traffic injuries are considered the leading cause of death for young people aged 15–29 years, which are considered the most productive years (*WHO, 2011*).

Both direct medical costs and indirect costs such as compensation for damages, lost wages, and other losses, that result from these injuries affects in particular economically disadvantaged families. Developing countries suffer from considerable financial costs because of road traffic injuries. Undeniably, road traffic injuries are estimated to cost low- and middle-income countries about 3% of their gross national product, which is estimated to be over 100 billion \$ / year (*WHO, 2017*).

Ninety per cent of road traffic deaths occur in middle-income countries, which account for 72% of the world's population. The global road traffic fatality rate is 18 per 100 000 population. Though, middle-income countries have the highest annual road traffic fatality rates (20.1 per 100 000), while the rate in high-income countries is the lowest, being 8.7 per 100 000. This indicates that these countries bear a disproportionately high burden of road traffic deaths relative to their level of motorization (*WHO, 2018*).

The African Region shows the highest in risk of dying because of a road traffic injury (26.6 per 100 000 population), while the lowest is in the European Region (10.3 per 100 000) (*WHO, 2018*).