#### **List of Contents**

Ti	Title Page		
•	List of Abbreviations	I	
•	List of Tables	III	
•	List of Figures	X	
•	Introduction and Aim of the Work	1	
•	Review of Literature	5	
•	Methodology	53	
•	Results	67	
•	Discussion	94	
•	Conclusions	133	
•	Recommendations	135	
•	Summary	138	
•	References	144	
•	Arabic Summary		

#### **List of Abbreviations**

**6-MAM**.....6-monoacetyl morphine AIDS ......Acquired Immune Deficiency Syndrome **ALT**.....Alanine Amino Transferase **ANGA**......Anti-Narcotic General Administration **APA**......American Psychiatric Association **ASI**.....Addiction severity Index **AST**......Aspartate Amino Transferase ASU ......Ain Shams University **BC**.....Before Christ BDZs.....Benzodiazepines **CAPMAS** ......Central for **Public** Agency Mobilization and Statistics CBC ......Complete Blood Count Control and **CDC**......Centers for Disease Prevention CNS ......Central Nervous System **DEA** ......Drug Enforcement Administration DSM IV ......Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition DSM5.....Diagnostic and Statistical Manual of Mental Disorders, Fifth edition **DUI** ......Driving Under the Influence GABA.....Gamma Aminobuteric Acid **GAD**.....Generalized Anxiety Disorder **HIV** ......Human Immune-Deficiency Virus I.V.....Intravenous **IDUs** ......Injection Drug Users **IOP** ......Institute of Psychiatry

#### **List of Abbreviations**

**KSA** ......Kingdom Saudi Arabia **MDMA**.....3,4-methylenedioxy methamphetamine **MMT** ......Methadone Maintenance Therapy NIDA......National Institute on Drug Abuse NIDUs ......Non-Injection Drug Users **NIH** ......National Institute of health NTA .....the National Treatment Agency for Substance Misuse **PCC** ......Poison Control Center PCCASUH ......Poison Control Center of Ain Shams University Hospitals **PCP**.....Phencyclidine PTSD ......Post-Traumatic Stress Disorders PWID .....People Who Inject Drugs RTAs.....Road Traffic Accidents SCID I.....Structured Clinical Interview I **SDS**.....Severity of Dependence Scale SAMHSA.....Substance Abuse and Mental Health Services Administration SUDs.....Substance Use Disorders THC .....Tetrahydrocannabinol **TLC**.....Total Leucocytic Count **UK** ......United Kingdom UNAIDS ......United Nations Program on HIV/ **AIDS** UNODC ......United Nations Office on Drugs and Crime USA ......United States of America **WHO** ......World Health Organization

#### **List of Tables**

Table No.	Title Page
Table (1):	Classification of opioid ligands and
	their affinity for opioid receptors 11
<b>Table (2):</b>	Psychic effects of substance abuse26
Table (3):	Classification of drugs according to
	their pharmacodynamic action27
Table (4):	Prevalence of SUDs among different
	Egyptian Governorates in a community
	based multistage random sample of
	106480 Egyptian participants aged 15
	years and above32
Table (5):	Prevalence of drug users and
	prevalence of the Severity of
	Substance Use
<b>Table (6):</b>	Prevalence of different substances of
	abuse among 21988 Egyptian drug
	users
<b>Table (7):</b>	Prevalence of different Methods of
	Substance Use among 21988
	Egyptian drug users
Table (8):	Distribution of age at onset among
	different age groups of drug users33
Table (9):	Distribution of drug users among
	different residential areas33
Table (10):	Etiological factors in SUDs classified
	as biological, psychological and
	social36
Table (11):	Drug related crimes and drug
	trafficking offences (rates per 100,000
	population)44

Table No.	Title Page
Table (12):	Drug Enforcement Agency (DEA)
Table (13):	schedules of controlled drugs
Table (14):	patients admitted at the (SUDs) Unit - (IOP) - (ASU) Hospitals
Table (15):	male patients admitted at the (SUDs) Unit - (IOP) - (ASU) Hospitals
Table (16):	among a sample of 65 addict male patients admitted at the (SUDs) Unit - (IOP) - (ASU) Hospitals
Table (17):	Hospitals

Table No.	Title Page
Table (18):	The distribution of age of start smoking, age of start substance use, 1st substance to start with and the cause of trying the substance according to the main substance of abuse among a sample of 65 addict male patients admitted at the (SUDs)
Table (19):	Unit - (IOP) - (ASU) Hospitals
Table (20):	The distribution of subjects according to previous trials to quit and their sites, abstinence and relapses among a sample of 65 addict male patients admitted at the (SUDs) Unit - (IOP) - (ASU) Hospitals
Table (21):	The distribution of quit trials, their sites, abstinence and relapses according to the main substance of abuse among a sample of 60 addict male patients admitted at the (SUDs) Unit - (IOP) - (ASU) Hospitals

Table No.	Title Page
Table (22):	The mean number of overdoses and
	suicidal attempts among a sample of 65
	addict male patients admitted at the
	(SUDs) Unit - (IOP) - (ASU) Hospitals75
Table (23):	The distribution of the method of
	suicidal attempts and the number of
	incidents of these trials among
	patients who attempted suicide in a
	sample of 65 addict male patients
	admitted at the (SUDs) Unit - (IOP) -
m-11- (04)-	(ASU) Hospitals
Table (24):	The distribution of non-fatal
	overdoses, suicidal attempts and past
	psychiatric illnesses according to the main substance of abuse among a
	sample of 65 addict male patients
	admitted at the (SUDs) Unit - (IOP) -
	(ASU) Hospitals76
Table (25):	The distribution of different laboratory
	tests done on admission among a
	sample of 65 addict male patients
	admitted at the (SUDs) Unit - (IOP) -
	(ASU) Hospitals77
Table (26):	The distribution of laboratory
	investigations done on admission
	according to the main substance of
	abuse among a sample of 65 addict
	male patients admitted at the (SUDs)
	Unit - (IOP) - (ASU) Hospitals78

Table No.	Title Page
Table (27):	The distribution of means in ASI areas
	and the mean of severity of addiction
	in a sample of 64 addict male patients
	admitted at the (SUDs) Unit - (IOP) -
<b>7</b> 0-1-1- (00).	(ASU) Hospitals
Table (28):	The distribution of different ASI areas
	according to different main
	substances of abuse in a sample of 64
	addict male patients admitted at the
Table (29a):	(SUDs) Unit (IOP) - (ASU) Hospitals 80  The mean number of crimes
Table (29a).	committed, arrests and convictions by
	a sample of 63 addict male patients
	admitted at the (SUDs) Unit - (IOP) -
	(ASU) Hospitals
Table (29b):	The distribution of different types of
, ,	crime categories committed, number
	of arrests and convictions among a
	sample of 63 addict male patients
	admitted at the (SUDs) Unit - (IOP) -
	(ASU) Hospitals83
Table (30):	The distribution of the number of
	patients committing other crimes,
	number of arrests and number of
	convictions among a sample of 63
	addict male patients admitted at the
	(SUDs) Unit - (IOP) - (ASU) Hospitals 84

Table No.	Title Page	<b>)</b>
Table (31):	The distribution of driving under the influence crime with the resulting accidents and their outcomes among a sample of 63 addict male patients admitted at the (SUDs) Unit - (IOP) -	
Table (32):	(ASU) Hospitals	
Table (33):	The distribution of the mean of crimes committed, arrests, convictions and duration of incarceration according to different main substance of abuse among a sample of 63 addict male patients admitted at the (SUDs) Unit -	
Table (34):	(IOP) - (ASU) Hospitals	
Table (35):	(IOP) - (ASU) Hospitals	

Table No.	Title	Page
Table (36):	Linear regression model of criminality	у
	among a sample of 63 addict mal	e
	patients admitted at the (SUDs) Unit	_
	(IOP) - (ASU) Hospitals	89
Table (37):	Pearson correlation between th	e
	number of crimes and other scal	e
	variables among 44 Heroin addic	t
	male patients admitted at the (SUDs	s)
	Unit - (IOP) - (ASU) Hospitals	91
Table (38):	ANOVA and Independent T tes	t
	correlation between the mean number	r
	of crimes committed and th	e
	categorical variables among a sampl	e
	of 44 Heroin addict male patient	s
	admitted at the (SUDs) Unit - (IOP)	_
	(ASU) Hospitals	92
Table (39):	Linear regression model of criminality	y
	among 44 Heroin addict male patient	s
	admitted at the (SUDs) Unit - (IOP)	_
	(ASU) Hospitals	93

## **List of Figures**

Figure No.	Title Page
Fig. (1):	Aulus Cornelius Celsus5
Fig. (2):	Aristotle 6
Fig. (3):	The poppy plant as depicted in an old manuscript and as it appears in the field
Fig. (4):	Unripe poppy capsule from which opium is extracted
Fig. (5):	Preparing heroin for injection
Fig. (6):	White powder pure heroin and brown heroin
Fig. (7):	"Black tar" heroin
Fig. (8):	Structural formula of tramadol hydrochloride
Fig. (9):	Cannabis sativa plant (hem plant)16
Fig. (10):	Chemical structure of main cannabinoids in cannabis sativa plant 18
Fig. (11):	White cocaine powder21
Fig. (12):	Crack cocaine
Fig. (13):	Amphetamines23
Fig. (14):	Methamphetamine hydrochloride, also known as crystal meth
Fig. (15):	MDMA tablets25
Fig. (16):	MDMA crystals
Fig. (17):	Relapse rates among drug addiction and other chronic illnesses

# List of Figures (Cont.)

Figure No.	Title Pag	е
Fig. (18):	Global trends in the estimated number and prevalence of drug users, 2006-2013	3
Fig. (19):	Global trends in the prevalence of use of various drugs, 2009-20133	4
Fig. (20):	Median regional drug trafficking and total drug related offence rates (2005/2006) per 100,000 population 4	3
Fig. (21):	Box plot representation showing the severity of addiction distribution by ASI according to different groups of main substances of abuse in a sample of 64 addict male patients admitted at the (SUDs) Unit - (IOP) - (ASU) Hospitals	1
Fig. (22):	Scatter dot plot of the regression model between the number of committed crimes and the age of start of addiction among a sample of 63 addict male patients admitted at the (SUDs) Unit - (IOP) - (ASU) Hospitals	0
Fig. (23):	Scatter dot plot of the regression model between the number of committed crimes and the suicidal attempts among a sample of 63 addict male patients admitted at the (SUDs) Unit - (IOP) - (ASU) Hospitals	0

# List of Figures (Cont.)

Figure No.	Title	Page
Fig. (24):	Scatter dot plot of the regression mode between the number of committee crimes and the age among 44 Hero addict male patients admitted at the (SUDs) Unit - (IOP) - (ASU) Hospitals	ed vin he

#### **Abstract**

SUDs is a disease of mind that is associated with multiple comorbidities as physical illnesses, psychiatric disturbances and criminality, in addition to the multiple morbidities as overdoses, relapses and cognitive impairment. Moreover, it affects different aspects of life as educational employment/functional, marital and social fields. Addiction is considered a medical disorder with legal implications; an addict is a very important medico-legal case. <u>Aim of the work</u>: to study the medico legal aspects of drug addiction among patients admitted at The Institute of Psychiatry (IOP), Ain Shams University (ASU) Hospitals over six month period from the beginning of July 2015 till the end of December 2015 regarding:

- 1- The Pattern of drug use among drug addicts admitted at The Institute of Psychiatry, Ain Shams University Hospitals.
- 2- The magnitude of Legal consequences that appear to be as a result of drug addiction.

**Methodology**: A Cross Sectional observational study was performed among a sample of 65 addict male patients admitted at the Substance Use Disorders (SUDs) Unit - Institute of Psychiatry (IOP) - Ain Shams University (ASU) Hospitals and fulfilling the criteria of the research in the period from the first of July 2015 till the end of December 2015. Psychiatric history and examination based on IOP semi-structured interview and the Addiction Severity Index (ASI) questionnaire were the tools used to achieve the aim of this study. **Results:** The whole sample committed 377 crimes with mean of 5.98 ± 2.5 crimes per patient which ranges from 2 crimes to 13 different types of crimes. 33.6% of total crimes committed were subjected to arrest and 3.9% of the total crimes were actually convicted, the most common crimes committed by cases in this study were: driving under the influence (DUI) in about 78%. Heroin addicts had the highest score at the medical domain in the Addiction Severity Index (ASI) in addition to the highest score of the final severity of addiction. Heroin addiction is more significantly correlated with incarceration and the length of its duration. Young age was a predictor of criminal behavior among heroin addicts. The younger the age of the addict and the younger the age of start using the substance the more crimes committed in the three drug groups, also the number of crimes committed showed positive significant correlation with suicidal attempts and non-fatal overdose incidents where the more often occurred the more crimes committed and with the ASI score (the more severe the addiction was the more crimes committed). Also, the number of crimes committed showed significant correlation with the presence psychotic disorder. The best fit regression model of criminality showed that young age at start of addiction and the suicidal attempts were the significant predictors of criminal behavior in this sample. *Conclusion*: Patients suffering from SUDs are liable to suffer many **health consequences**, the most important of which are; non-fatal overdose incidents, suicidal attempts, relapses, psychiatric diseases and hepatitis C virus infection. Those Patients are also liable to be involved in many **legal problems**, so, addiction has a lot of medico- legal implications which deserve our attention and can be summarized on three axes:

- Criminal behavior.
- Suicidal attempts.
- Accidental incidents; in the form of non-fatal overdose incidents and RTAs (Road Traffic Accidents) due to driving under the influence.