

**A STUDY ON DRUG USE AND CRIMINAL  
BEHAVIOURS OF CRIMINAL OFFENDERS IN  
THE STATE OF PENANG**

**BALBER SINGH A/L HADEP SINGH**

**UNIVERSITI SAINS MALAYSIA**

**2023**

**A STUDY ON DRUG USE AND CRIMINAL  
BEHAVIOURS OF CRIMINAL OFFENDERS IN  
THE STATE OF PENANG**

by

**BALBER SINGH A/L HADEP SINGH**

**Thesis submitted in fulfilment of the requirements  
for the degree of  
Master of Social Sciences**

**January 2023**

## ACKNOWLEDGEMENT

First and foremost, I would like to thank my main supervisor **Dr. Darshan Singh A/L Mahinder Singh** for all his valuable and indispensable support, motivation, and guidance throughout my postgraduate study at the Centre for Drug Research, Universiti Sains Malaysia (USM). **Dr. Darshan Singh** has spent a lot of his time, giving me constant guidance, attention, and help, so that I can complete my postgraduate study successfully. I also sincerely thank **Professor Dr. B. Vicknasingam Kasinather**, my co-supervisor, for all his continuous guidance and support throughout my study at USM. I would also like to thank the Director of Management of Royal Malaysia Police (RMP) Force, the Chief Police Officer of Penang State, and Officer in Charge of the Southwest District who have all given me their full support and allowed me to conduct my study at their facility. Their continuous support has allowed me to learn many new things while I conduct my research at their facility. Finally, I also thank my family dearly and friends for being supportive to me, and who always encourage me to pursue my postgraduate study at USM.

Thank You.

## TABLE OF CONTENTS

<b>ACKNOWLEDGEMENT.....</b>	<b>ii</b>
<b>TABLE OF CONTENTS.....</b>	<b>iii</b>
<b>LIST OF TABLES.....</b>	<b>vii</b>
<b>LIST OF FIGURES.....</b>	<b>ix</b>
<b>LIST OF ABBREVIATIONS.....</b>	<b>x</b>
<b>LIST OF APPENDICES.....</b>	<b>xii</b>
<b>ABSTRAK.....</b>	<b>xiii</b>
<b>ABSTRACT.....</b>	<b>xv</b>
<b>CHAPTER 1 INTRODUCTION.....</b>	<b>1</b>
1.1 Introduction.....	1
1.2 An Overview of the World Drug Abuse Problem.....	1
1.3 Malaysian Drug Abuse Problem.....	5
1.4 Problem Statement.....	12
1.5 Study Hypothesis.....	14
1.6 Research Questions.....	14
1.7 Study Objectives.....	15
1.8 Study Conceptual Framework.....	16
1.9 Study Significance.....	16
1.10 Conclusion.....	17
<b>CHAPTER 2 LITERATURE REVIEW.....</b>	<b>18</b>
2.1 Introduction.....	18
2.2 Crime Framework.....	18
2.3 ATS Use and Crime.....	20
2.4 Crime Perpetration among People Who Use Drugs (PWUDs).....	23
2.5 ATS Use and Mental Health Problem.....	25
2.6 Conclusion.....	27
<b>CHAPTER 3 METHODS AND MATERIALS.....</b>	<b>28</b>
3.1 Introduction.....	28

3.2	Study Design.....	28
3.3	Study Population.....	29
3.4	Study Location.....	30
3.5	Study Inclusion and Exclusion Criteria.....	30
3.6	Study Sample Size.....	31
3.7	Study Sampling.....	31
3.8	Pilot Study.....	32
3.9	Data Collection.....	33
3.10	Urine Drug Screen.....	35
3.11	Data Analysis.....	36
3.12	Ethics.....	36
3.13	Conclusion.....	36
	<b>CHAPTER 4 RESULTS.....</b>	<b>37</b>
4.1	Introduction.....	37
4.2	Results Outline.....	37
4.3	Respondents' Socio-Demographic Characteristics.....	38
	4.3.1 Gender and Ethnicity.....	38
	4.3.2 Current Age.....	38
	4.3.3 Marital Status.....	39
	4.3.4 Education Status.....	39
	4.3.5 Employment and Income.....	39
	4.3.6 Accommodation.....	39
	4.3.7 Previous Drug Rehabilitation and Imprisonment History.....	39
	4.3.8 Socio-demographic Characteristics between Respondents with Illicit Substance Use History and Non-illicit Substance Use History.....	40
4.4	Criminal and Prison History.....	43
4.5	Urine Drug Screen Results.....	46
4.6	Illicit Drug Use History.....	47
4.7	Criminal Behaviours.....	50
	4.7.1 Reasons for Using ATS.....	53

4.7.2	Criminal History in the Last Twelve Months.....	53
4.8	Psychological Problems.....	55
4.9	Reasons for Engaging in Crime.....	56
4.10	Criminal Profile of Respondents Caught for Violent and Non-Violent Crime.....	57
4.11	Criminal Behaviours between Illicit Drug Users and Non-Illicit Drug Users.....	59
4.12	Criminal Behaviours between Detainees with Previous Conviction And Non-Conviction History.....	61
4.13	Factors Associated with Violent and Non-Violent Crime.....	63
4.14	Conclusion.....	65
	<b>CHAPTER 5 DISCUSSION.....</b>	<b>66</b>
5.1	Introduction.....	66
5.2	Discussion Chapter Outline.....	66
5.3	Samples Socio-Demographic Characteristics.....	67
5.4	Socio-Demographic Characteristics Between Detainees with Illicit Drug Use History and Non-Illicit Drug Use History.....	71
5.5	Current and Previous Criminal History.....	72
5.6	Present Offenses Under the Penal Code (Act 574).....	75
5.7	Urine Drug Screen Results.....	78
5.8	Illicit Drug Use History.....	80
5.9	Criminal Behaviours.....	82
5.10	Reasons for Using ATS and Engagement in Crime Activities.....	85
5.11	Self-Reported Psychological Problems.....	87
5.12	Crime and Drug Relationship.....	89
5.13	Conclusion.....	92
	<b>CHAPTER 6 CONCLUSION.....</b>	<b>93</b>
6.1	Introduction.....	93
6.2	A Summary of Key Findings of the Study.....	95
6.3	Study Implications.....	96
6.4	Study Limitation.....	99

6.5	Suggestions for Future Research.....	101
6.6	Conclusion.....	102
	<b>REFERENCES.....</b>	<b>103</b>
	<b>APPENDICES</b>	
	<b>LIST OF PUBLICATIONS</b>	

## LIST OF TABLES

	<b>Page</b>
Table 4.0	Respondent's socio-demographic characteristics (n=73)..... 41
Table 4.1	Socio-demographic characteristics between detainees with illicit drug use history and non-illicit drug use history.....42
Table 4.2	Criminal and Prison History..... 44
Table 4.3	Type of Offenses Committed by the Respondents under the Penal Code (Act 574).....45
Table 4.4	Drug Use History..... 48
Table 4.5	Criminal Behaviours..... 52
Table 4.6	Reasons for Using ATS.....53
Table 4.7	Crime in the Last 12 Months.....54
Table 4.8	Psychological Problems..... 55
Table 4.9	Reasons for Engaging in Crime..... 56
Table 4.10	Previous criminal history of respondents who were caught for violent and non-violent offenses.....58
Table 4.11	Criminal behaviours between illicit drug users and non-illicit drug users..... 60
Table 4.12	Criminal behaviours between those who have previous conviction history and no previous conviction history.....62
Table 4.13	Factors Associated with Violent Crime..... 64



## LIST OF FIGURES

	<b>Page</b>
Figure 1.1 Study Conceptual Framework.....	16
Figure 4.2 Urine Drug Screen Results.....	47

## LIST OF ABBREVIATIONS

AGs	Attorney General's
ATS	Amphetamine-type stimulant
C&C	Cure and Care
CBD	Cannabidiol
CCRC	Community Care and Rehabilitation Centre
CDDC	Compulsory Drug Detention Centre
CI	Confidence Interval
CI	Crime Index
CNS	Central Nervous System
CPA	Criminal Procedure Act
DDA	Dangerous Drugs Act
DUDs	Drug Use Disorders
FWUDs	Female Who Use Drugs
HIV	Human Immunodeficiency Virus
HPLC	High Performance Liquid-Chromatography
MMT	Methadone Maintenance Treatment
NADA	National Anti-Drugs Agency
NPS	New Psychoactive Substance
OR	Odds Ratio
POCA	Prevention of Crime Act
PWIDs	People Who Inject Drugs
PWUDs	People Who Use Drugs
RMP	Royal Malaysia Police
SOSMA	Security Offenses (Special Measure) Act
SPSS	Statistical Package for Social Sciences
SUDs	Substance Use Disorders
THC	Tetrahydrocannabinol

UNODC

United Nations Office on Drugs and Crime

VTCs

Voluntary Treatment Centers

## **LIST OF APPENDICES**

- APPENDIX A      HUMAN ETHICS APPROVAL CERTIFICATE
- APPENDIX B      STUDY QUESTIONNAIRE.

**SATU KAJIAN MENGENAI PENGGUNAAN DADAH DAN  
TINGKAHLAKU JENAYAH DALAM KALANGAN PESALAH JENAYAH  
DI NEGERI PULAU PINANG**

**ABSTRAK**

Orang yang menggunakan dadah (PWUDs) cenderung untuk melakukan jenayah di bawah pengaruh dadah berbanding dengan orang tanpa sejarah penggunaan dadah. Walaupun penyelidik berpendapat bahawa penggunaan dadah boleh menyebabkan seseorang terlibat dalam jenayah, walau bagaimanapun, hubungan antara penggunaan dadah dan jenayah nampaknya tidak disiasat. Kajian ini bertujuan untuk menyiasat profil jenayah tahanan Polis yang ditangkap di bawah Kanun Keseksaan (Akta 574) atas pelbagai *kesalahan jenayah* antara Jun dan Disember 2019 di Daerah Timur Laut dan Barat Daya Negeri Pulau Pinang. Seramai 73 orang tahanan Polis telah direkrut melalui persampelan mudah untuk kajian keratan rentas ini. Majoriti adalah lelaki (93%, n=68/73), kebanyakan orang Melayu (58%, n=42/73), dan min umur sampel dalam kajian ini adalah 32.8 tahun (SD=8.13). Kira-kira 16% (n=12/73) daripada tahanan mempunyai sejarah pemulihan dadah sebelum ini, manakala 55% (n = 40/73) telah dipenjarakan sebelum ini. Lima-puluh enam peratus (n=41/73) daripada tahanan ditahan atas kesalahan *tanpa kekerasan* (contohnya, jenayah harta benda), dan 44% untuk *kesalahan kekerasan* (contohnya, rompakan geng, serangan fizikal, dll.) di bawah Kanun Keseksaan (Akta 574). Daripada jumlah ini, 81% (n=59/73) daripada kesalahan tersebut dikategorikan sebagai kesalahan yang boleh *diikat jamin*. Bagi status penggunaan dadah mereka, 62% (n=45/73) daripada tahanan diuji positif untuk penggunaan dadah haram, kebanyakan (53%) untuk perangsang jenis amphetamine (ATS) dan opiat (18%), apabila mereka dibawa ke

dalam tahanan. Enam-puluh lapan peratus ( $n=50/73$ ) daripada tahanan mempunyai sejarah penggunaan dadah haram. Kebanyakan (59%,  $n = 43/73$ ) melaporkan melakukan jenayah secara individu, dan 41% biasanya melakukan jenayah dengan kawan-kawan mereka. Kira-kira 8% membawa senjata berbahaya semasa melakukan jenayah, dan 41% ( $n=30/73$ ) mendakwa bahawa mereka diperintahkan oleh orang atasan untuk melakukan jenayah. Sebab-sebab biasa yang diberikan untuk melakukan jenayah termasuk kekangan kemiskinan/kewangan, masalah penggunaan dadah haram, dan menetap dalam komuniti berisiko tinggi. Hasil analisis Chi-square, menunjukkan bahawa tahanan yang ditangkap atas kesalahan tanpa kekerasan mempunyai kemungkinan yang lebih tinggi untuk ditahan sebelum ini untuk kesalahan berhubung narkotik, dan melaporkan sejarah penggunaan ATS semasa, berbanding dengan tahanan yang ditangkap atas kesalahan kekerasan. Begitu juga, tidak ada perbezaan yang signifikan dalam tingkah laku jenayah tahanan dengan masalah penggunaan dadah haram dan bukan haram. Di samping itu, tahanan yang tidak mempunyai sejarah sabitan sebelum ini, mempunyai kemungkinan yang lebih tinggi untuk melakukan jenayah keganasan, lebih cenderung melakukan jenayah dalam kumpulan dalam dua belas bulan yang lepas, berbanding dengan tahanan yang mempunyai sejarah sabitan sebelumnya. Hasil analisis multivariate menunjukkan bahawa orang bukan Melayu, dan mereka yang tidak mempunyai sejarah pemenjaraan sebelum ini lebih cenderung ditangkap atas jenayah kekerasan di Negeri Pulau Pinang. Hasil kajian awal mendapati terdapat kaitan yang kuat antara penggunaan dadah dan jenayah di kalangan tahanan yang ditangkap untuk pelbagai pelanggaran jenayah di bawah Kanun Keseksaan (Akta 574). Memandangkan kadar recidivism yang tinggi, oleh itu, menggabungkan program rawatan dadah dengan intervensi pencegahan jenayah berpotensi membendung kejadian jenayah di kalangan PWUD.

# A STUDY ON DRUG USE AND CRIMINAL BEHAVIOURS OF CRIMINAL OFFENDERS IN THE STATE OF PENANG

## ABSTRACT

People who use drugs (PWUDs) tend to commit crime under the influence of drugs compare with people without drug use history. Though researchers have argued that drug use can cause people to engage in crime, however, the relationship between drug use and crime seems insufficiently investigated. This study aims to investigate the criminal profile of Police detainees who were caught under the Penal Code (Act 574) for various *crime offenses* between June and December 2019 in the Northeast and Southwest Districts of Penang State. A total of 73 Police detainees were recruited through convenience sampling for this cross-sectional study. Majority were males (93%, n=68/73), most Malays (58%, n=42/73), and the sample's mean age in this study was 32.8 years (SD=8.13). About 16% (n=12/73) of the detainees had previous drug rehabilitation history, while 55% (n=40/73) had been incarcerated before. Fifty-six percent (n=41/73) of the detainees were detained for *non-violent offenses* (e.g., property crime), and 44% for *violent offenses* (e.g., gang robbery, physical assault, etc.) under the Penal Code (Act 574). Of this, 81% (n=59/73) of the offenses were categorised as *bailable offenses*. As for their drug use status, 62% (n=45/73) of the detainees *tested positive* for illicit drug use, most (53%) for amphetamine-type stimulant (ATS) and opiate (18%), when they were brought into detention. Sixty-eight percent (n=50/73) of the detainees had illicit drug use history. Most (59%, n=43/73) reported committing crime *individually*, and 41% usually committed crime with their *acquaintances*. About 8% held dangerous weapons while committing crime, and 41% (n=30/73) claimed that they were ordered by their superiors to commit crime. The

common reasons given for committing crime include poverty/financial constraints, illicit drug use problems, and living in high-risk communities. Results from Chi-square analysis, indicate that detainees who were caught for *non-violent offenses* had higher odds for being detained previously for narcotic-related offenses, and reported current ATS use history, compared to detainees caught for *violent offenses*. Similarly, there were also no significant differences in the criminal behaviours of detainees with *illicit* and *non-illicit drug use* problems. In addition, detainees who have *no previous conviction history*, had higher odds of committing violent crime, were more likely to commit crime in groups in the last twelve-months, compared to detainees who had previous conviction history. Results from multivariate analysis indicate that non-Malays, and those without previous incarceration history were more likely to be caught for *violent crime* in the State of Penang. Findings from this preliminary study indicate that there is a *strong association* between drug use and crime among detainees caught for various criminal violations under the Penal Code (Act 574). Given the high recidivism rate, thus, combining drug treatment programs with crime prevention interventions can potentially curb crime occurrences among PWUDs.



## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

This is the first chapter of the thesis. A general overview of the world drug abuse problem, Malaysian drug abuse problem, study problem statement, study hypothesis, research questions and study objectives, as well as the study significance are all clearly elucidated in this chapter.

#### 1.2 An Overview of the World Drug Abuse Problem

According to the United Nations Office on Drugs and Crime (UNODC), the current COVID-19 health pandemic is expected to have a significant impact on drug markets. In fact, the post-COVID-19 health crisis is projected to a.) expand drug cultivation and trafficking (drive illegal production of narcotics), and b.) spur people to use more drugs (economic crisis may propel people to use drugs and experience drug use disorders – DUDs) (World Drug Report, 2021). UNODC has called governments to provide proper support to parents and young people living in vulnerable circumstances to face the unprecedented stresses of the pandemic by implementing post-pandemic recovery plans (World Drug Report, 2021). UNODC has also emphasized on the need to allocate additional budgets for drug prevention and treatment for people who use drugs (PWUDs). Compared to other regions, the Southeast Asian region which is geographically situated within the “*golden-triangle*” is reported to experience high prevalence of opioid and methamphetamine use because of the massive production of narcotics in the highly militarized rebel-led region (World Drug Report, 2021).

Projections from UNODC estimated that about 269 million (range between 166 to 373 million) people have had used a drug at least once in 2018, corresponding to 5.4 per cent (range between 3.3 to 7.5 per cent) of the global population aged 15-64 years (World Drug Report, 2021). UNODC estimated that with the projected increase in the global population growth, by 2030 about 11 per cent (299 million people) of the global population could be affected by the illicit drug abuse problem (World Drug Report, 2021). Shockingly, out of the 269 million people who are estimated to have used drugs in 2018, about 60 million were in Africa—reflecting that the African region is badly ravaged by the illicit drug abuse problem (World Drug Report, 2021).

Based on the latest prevalence data, UNODC estimated that in 2019, approximately 275 million people around the globe (aged 15 to 64 years) have had used drugs at least once, corresponding to 5.5 per cent of the global population (range between 3.5 to 7.4 per cent) (World Drug Report, 2021). Out of this figure (275 million), roughly 36.3 million people (almost 13 per cent) are reported to suffer from drug use disorders, meaning that drugs have been used to a harmful point where they may experience drug dependence or require treatment (World Drug Report, 2021). In addition, UNODC anticipated that people living in lower-income countries will be seriously affected by the illicit drug abuse problem than people living in high-income and middle-income countries (World Drug Report, 2021). Especially, in Europe, UNODC forecasted that the number of PWUDs will likely decline by 2030 because of the implementation of various non-punitive drug policies and drug prevention interventions (World Drug Report, 2021).

Despite the uptick in the prevalence of drug use, cannabis remains as the most widely used illicit substance in the world. UNODC estimated that worldwide about 200 million people have used cannabis in 2019, and the prevalence rate appeared to be

high in North America, the sub-region of Australia and New Zealand, and West and Central Africa (World Drug Report, 2021). UNODC also saw most cannabis products on the drug market are reported to have high levels of potency – higher THC content than CBD (World Drug Report, 2021). UNODC discovered a significant diversification in the availability of illicit drugs (psychotropics) on the drug market in recent years. Notwithstanding the use of plant-based substances (cannabis, cocaine, and heroin), the availability of synthetic drugs, and the use of non-pharmaceutical drugs are reported to cause problems for law enforcement agencies and treatment providers around the globe (World Drug Report, 2021). At present, UNODC found there are hundreds of New Psychoactive Substances (NPS) on the drug market (predominantly on crypto-market online platforms) and seen to posed significant health issues to PWUDs (World Drug Report, 2021). Apart from cannabis, opioids top the list as the second most widely used illicit substance around the globe. UNODC estimated that 62 million people have used opioids (including opiates and pharmaceutical, as well as synthetic opioids) chiefly for non-medical reasons in 2019 (World Drug Report, 2021). While, out of the 62 million people, 31 million people have had used heroin and morphine in 2019 (World Drug Report, 2021). The opioid abuse problem is reported to be prevalent in North America, the Near and Middle East, South-West Asia, and Oceania (Australia and New Zealand) (World Drug Report, 2021). Treatment providers are concerned with the burgeoning use of pharmaceutical opioids such as tramadol, hydrocodone, oxycodone, codeine, and fentanyl) since treatment admissions for the abuse of pharmaceutical opioids have escalated. Moreover, UNODC also saw a marked increase in the used of amphetamine-type stimulant (ATS) (both amphetamine and methamphetamine). According to UNODC, in 2019, an estimated number of 27 million people (aged between 15-64 years) have

used ATS (World Drug Report, 2019). The ATS abuse problem is highly concentrated in North America (where the non-medical use of pharmaceutical stimulants and methamphetamine is common), East and South-East Asia and Oceania (Australia) (crystal methamphetamine widely popular), Western and Central Europe and the Near and Middle East (popularly known for captagon) (World Drug Report, 2021).

UNODC has forecasted that treatment admission (enrolment) among PWUDs, especially among those suffering from substance use disorders (SUDs), will increase since current treatment programs may not have sufficient spaces or the capacity to enrol a big number of clients seeking to join treatment. It is reported that access to drug treatment services have become a stumbling block for PWUDs, since only “one in eight people” with SUDs receive drug treatment annually (World Drug Report, 2021). Given the widespread abuse of ATS, treatment providers are scrambling to provide effective rehabilitation services and address the high relapse rate among people who use ATS—because currently there is no approved pharmacological interventions (medicine-assisted treatment) for ATS use disorder (World Drug Report, 2021). Mortality rates associated with drug use has also increased among opioid users (494,000 PWUDs have died in 2019), while the HIV and Hepatitis C rates have also surged among PWUDs. UNODC has estimated that in 2018, there are about 11.3 million people who inject drugs (PWID), in fact, PWIDs are 29 times more vulnerable than those who do not inject drugs to acquire HIV (World Drug Report, 2021).

UNODC has also anticipated that NPS popularity (both synthetic and plant-based) will increase among PWUDs in the future. NPS such as kratom (*Mitragyna speciosa*), *Salvia divinorum* and Khat (*Catha edulis*) are becoming more appealing to PWUDs who prefer using it to self-treat their SUDs.

### 1.3 Malaysian Drug Abuse Problem

The Malaysian drug abuse problem can be traced back as early as the nineteenth-century during British encroachment in Southeast Asia. Given the lucrative opium trade, the British reign cultivated opium as a commodity in *Malaya*. Afflicted by manpower shortage and since the agricultural sector was underdeveloped, the British mobilised indentured servants from India and mainland China who is believed to have good farming skills to work in *Malaya*. The immigrants who were deployed to work in rubber estates and tin mines, continue to indulge in their old and routine *ganja* (cannabis) and opium smoking habit. In the past, narcotics was used recreationally to ward off fatigue. The British allowed people to use narcotics, and in fact, the Chinese peasants often used it for recreational purposes and as a remedy to protect and treat them from common health maladies. Since British supported opium cultivation and use, immigrants could purchase narcotics from authorised opium dens or shops in *Malaya*. However, since opium smoking was viewed as an injurious and time-wasting norm, the local learned Chinese elites who studied in Britain, stood up and vehemently rallied against the British, pressing them to regulate opium sales to locals, especially those from mainland China. The clamouring for prohibiting opium use coincidentally occurred because of the Chinese nationalism shepherded by the Chinese elites. Eventually, because of the mass rallying, the British reign agreed to regulate opium sales, and subsequently introduced the Drug Ordinance/Bill to control and punish people caught for abusing narcotics. In the immediate aftermath of the ban, the British officially enforced the Dangerous Drugs Act (DDA) of 1952. The Act when applied, people who use drugs (PWUDs) can be detained, jailed, and confined in mandatory drug rehabilitation centres in the country. Malaysia also retained the capital

punishment for drug trafficking offenses—meaning drug traffickers can be hanged to death or imprisoned for a lifetime.

Since the inception of the draconian laws, an indefinite number of PWUDs have been caught and jailed in Malaysia. Malaysia started to take a tough stand against PWUDs, since the government declared the illicit drug use scourge as a “security issue” in the country in the 80s. After some time, the drug abuse problem became slightly unmanageable when drug policies in Malaysia were strongly influenced by the failed western “war on drugs” propaganda. After having dealt with the opioid (heroin/morphine) menace from the 60s to 80s, law enforcers and treatment providers in Malaysia raced against all odds to stem the burgeoning amphetamine-type stimulant (ATS) use problem. According to the National Anti-Drugs Agency (NADA), more than two-thirds of the recently detected people who use drugs (PWUDs) were found to be using ATS. This development highlights that ATS is becoming more popular and prevalent among PWUDs, than heroin (National Drug Report, 2020). In 2020, a total of 128,325 individuals were caught for various illicit drug use offenses under the Dangerous Drugs Act (DDA) of 1952. Historically, though the drug abuse problem is reported to be rife in males, 95.5% of PWUDs detected in 2020 were males, only 4.5% were females. Out of the total detected figure (128,325), 83,698 had used ATS, 39,599 opiate (heroin), 3,396 cannabis respectively, and the remaining had used other illicit substances (National Drug Report, 2020). More shocking, out of the 128,325 cases detected in 2020, 83,401 were youths (aged between 19-39 years) (National Drug Report, 2020). Based on NADA report, ATS has become the most widely used illicit substance after heroin and cannabis, and the trend is seen to have become apparent in the last three years. Particularly among the detected PWUDs with ATS use history (83,698), 62,652 reported to have used crystal methamphetamine (colloquially known

as *ais* and *syabu*), 10,951 used methamphetamine tablet (chiefly *Pil Kuda*), 9,710 amphetamine, and 397 used ecstasy in 2020 (National Drug Report, 2020). NADA also found a majority of PWUDs who were detected in 2020 had *non-poly drug use* history (121,236), while 7,089 PWUDs had *poly-drug use* history (National Drug Report, 2020). These statistics suggests that PWUDs in Malaysia have limited preferences for co-using other substances.

Given that heroin use was associated with deleterious health consequences in the 80s, researchers have also investigated the magnitude of the HIV conundrum among people who inject drugs (PWIDs) in the country. In the 80s, people who use heroin were vulnerable to HIV infections, as most were engaged in anomalous drug injecting behaviours (Malaysian AIDS Council). To meet the United Nations Millennium Development Goal, Malaysia successfully implemented harm reduction services both the methadone maintenance treatment (MMT) and needle-syringe exchange program (NSEP) to curb HIV spread among people who use heroin (Malaysian AIDS Council). To support MMT upscaling, various studies have been commissioned to gauge the effectiveness of MMT program. Aziz and Chong (2015) highlighted that client's accessing MMT program in Malaysia were highly satisfied with their MMT program, however, they also vented their frustration with the limited dosing hours, poorly furnished waiting area and manpower shortage. Similarly, Fei et al. (2016) found participation in MMT program had a positive and significant improvement on the Quality of Life of clients in Malaysia, since methadone use managed to mitigate heroin using frequency, injecting practices, and involvement in crime. The study also found that those living with HIV while receiving methadone treatment, were still engaged in sex-related HIV behaviours (Fei et al., 2016).

Subsequently, a multisite study was conducted by Ali et al. (2017) to evaluate MMT program effectiveness in the country. Findings from the national study indicate that despite the defaulted treatment rate (29.2%), participation in MMT program were associated with a reduction in opioid (heroin) use, HIV risk behaviours and crime, as well as significant improvement in social and health functioning (Ali et al., 2017). Apart from the MMT program, Malaysia also introduced Buprenorphine treatment program for people who use opioid. Compare to MMT which is given at no cost by the government in primary healthcare settings, Buprenorphine is an office-based treatment program designed to cater to working heroin users who wish to conceal their drug using behaviour. At the onset of the program availability, Vicknasingam et al. (2010) found both Buprenorphine and Buprenorphine/Naloxone therapy have been widely abused by heroin injecting drug users in the country and found the withdrawal of Buprenorphine from the market did not address diversion and injecting behaviours among heroin users. At the same time, Vicknasingam and associates (2015) conducted a nationwide study and found clients enrolled in Buprenorphine/Naloxone treatment program with private general practitioners are being prescribed lower doses of treatment and were not subjected to regular urine-drug testing. The study also found clients enrolled in Buprenorphine/Naloxone treatment were also still using illicit opiates, and injecting heroin and Buprenorphine/Naloxone during treatment—reflecting that there is a major issue with program implementation (Vicknasingam et al., 2015).

In addition, since PWUDs are forced into compulsory drug detention centres (CDDCs) for rehabilitation, Wegman et al. (2017) conducted a study to determine the effectiveness of CDDCs in the country. Given that detention in CDDCs were linked with human rights abuses and poor availability of treatment, Malaysia started to



gradually transform its compulsory drug detention centres into voluntary-based treatment centres (VTCs). To evaluate the effectiveness of both treatment approaches, Wegman et al. (2017) found opioid-dependent individuals treated in CDDCs were more prone to relapse to heroin use after their release (time to relapse was about 31 days), than clients treated with evidence-based treatment such as methadone in voluntary treatment settings in the country. Given this outcome, researchers decried and called policymakers to revise their treatment policies and do away with treatment programs that continue to punish PWUDs. Findings from a literature review highlighted that detaining PWUDs in CDDCs have poor treatment outcomes (Werb et al., 2016). Later studies also subsequently investigated incarcerated opioid users' (particularly people living with HIV) interest in receiving methadone treatment (Mukherjee et al., 2016). Mukherjee et al. (2017) found most (60%) jailed opioid users have *low* interest in receiving methadone during their confinement. Moreover, Wickersham et al. (2013) found incarcerated HIV positive opioid users treated with higher methadone dose (>80mg/per day) during their time of release from prison have better retention on methadone program compared to clients who received lower methadone dose (<80mg/per day). Taken together it can be suggested that methadone initiation among HIV positive opioid users during prison time had better outcomes.

Nevertheless, females who use drugs (FWUDs) is also a hidden population in the country (Loeliger et al., 2016). A study by Loeliger et al. (2016) among a cohort of out-of-treatment FWUDs (n=103) in Kuala Lumpur, found one-third of FWUDs were engaged in injecting behaviours, though most claimed to have shared injection equipment. A substantial number of FWUDs were also engaged in sex work (44.7%), reported irregular condom use (42.4%), suffering from psychiatric problems, as well as were exposed to physical and sexual violence (Loeliger et al., 2016). It is also

reported that FWUDs often come from poor economic background and are compelled to use drugs to cope with life stressors. Rahman et al. (2015) found that unstable or precarious family relationships or environments stood as a catalyst to women's involvement in illicit drug use practices in the country.

At present, with the increasing popularity of ATS and its association with HIV spread, a study by Chawarski et al. (2012) conducted among opiate IDUs found lifetime history of ATS use, and lifetime history of sharing of inoculation equipment were associated with HIV infections in Malaysia. The study also found both HIV positive and negative clients were susceptible to risky needle sharing behaviours (Chawarski et al., 2012). Since people who use ATS were also more likely to engage in aberrant sexual behaviours, a study by Lim et al. (2018) found men's who use ATS (methamphetamine) in Malaysia were involved in sexual behaviours with other male partners. ATS was primarily used to increase sexual performance, pleasure, and enhance sexual exploration (Lim et al., 2018). However, this group of men who have sex with men, have limited access to sexual health and substance treatment services in the country (Lim et al., 2018).

PWUDs especially ATS users in Malaysia can be detained for minor drug use offenses under section 15(1) of the Dangerous Drugs Act of 1952. It is estimated that approximately 70,000 plus PWUDs are annually caught under section 15(1) (National Drug Report, 2020). Those caught under this section can be jailed for a period of two-years in default of a court fine, and upon release are subjected to a two-years community supervision. Recently, Singh et al. (2020) found ATS users who have served a prison sentence for their ATS use offense, have poorer treatment compliance than clients caught for ATS use, but placed immediately in a community supervision program. This suggests that prison-based treatment has limited relevance in the

recovery process of incarcerated ATS users. Of late Malaysia also took formidable measures to revamp its outdated drug treatment programs which are still predominantly built on the total abstinence concept. Not long ago, Malaysia introduced the innovative voluntary treatment program (also known as Cure and Care Centres) chiefly to persuade PWUDs to engage in treatment (Ghani et al., 2015; Krishnan et al., 2016; Khan et al., 2017). It is shown that Cure and Care Centres usually offer a wide range of treatment services to PWUDs. A study by Ghani et al. (2015) demonstrated that Cure and Care Centres had a positive impact on client's recovery, since they can access inpatient and outpatient treatment services without having to experience any legal issues. Khan et al. (2017) study showed that participation in Cure and Care Centres had a significant impact on client's drug use profile; it was associated with a decrease in drug use intake and higher treatment satisfaction. Besides the positive outcomes, unfortunately, policymakers in Malaysia failed to transform and support voluntary treatment-based programs, since treatment programs in Malaysia largely favoured non-evidence-based interventions.

Notwithstanding the opioid and ATS abuse problem, currently researchers are beginning to investigate ketum's (*Mitragyna speciosa*) therapeutic applicability among PWUDs in the country. A few recent studies have indicated that ketum consumption is associated with a marked reduction in the frequency (and intake) of illicit drug use, though the leaf from the plant is also widely used for its pain-relieving effects among heroin users in the country (Saref et al., 2019; Singh et al., 2020; Singh et al., 2021).

Notwithstanding the evidence-based measures adopted and implemented in Malaysia for PWUDs, policymakers have also mulled to introduce the concept of *decriminalization*. Decriminalization can be defined as a narcotic-busting approach or strategy (legal framework) which has been legally designed to remove punitive penalties and replace it with evidence-based recommendations that has been proposed to deal with PWUDs caught over minor drug-related offences such as being tested for illicit drug use. The concept has been shown to have a significant advantage in halting drug abuse problem, and drug using health risks. Authorities in Malaysia has recently proposed to amend the Dangerous Drugs Act of 1952 – where a few archaic provisions under the Act will allow PWUDs to possess smaller amounts of drugs for personal use or they could also be spared from being jailed for minor drug use offences. The proposed bill/enactment has not been approved by parliamentarians yet, given the lack of studies to support the benefits of decriminalization in the local context here in Malaysia, since the drug abuse menace has been viewed as a security issue all this while.

#### **1.4 Problem Statement**

People who use drugs (PWUDs) are prone to engage in different criminal activities both *violent* and *non-violent crime*. There is an inseparable interplay between *drug use* and *crime*. Scholars have theorized that drug use can lead to crime, and engagement in crime can eventually lead to drug use (Goldstein, 1985; Tyner and Fremouw, 2008). Despite the alarming increase in the prevalence of illicit drug use and crime occurrences, so far, no studies have systematically analysed the connection between drug use and crime in Malaysia. Notably, in the West, PWUDs are invariably caught for crime offenses (Cartier et al., 2006; Sommers and Sommers, 2006; Tyner and Fremouw, 2008; Hayhurst et al., 2017; McKetin et al., 2020). The prevalence and

severity of crime may vary, as it is usually influenced by the type of drugs people use. For instance, people who use heroin (opioid) may engage in *non-violent crime* compared with people who use ATS, since they may develop a liking to engage in violent crime (Cartier et al., 2006; Sommers and Sommers, 2006; Tyner and Fremouw, 2008; Hayhurst et al., 2017; McKetin et al., 2020). According to Goldstein (1985), PWUDs can engage in crime under three possible justifications; a. *psychopharmacological* – the ingestion of psychoactive substances regardless of duration of use can eventually coerce someone to behave incoherently and afflict harm (violence), b. *economic-compulsive* – an individual who has developed dependence on drugs may end up committing crime to support his/her addictive behaviours, and c. *systemic violence* – violence stemming from harms perpetrated by cartels because of business rivalry, brutal slaying of gang members who are found to have betrayed their bosses, and assault occurring while drugs are being procured from street drug paddlers.

After looking at the country's Crime Index (CI), though crime indexes appeared volatile (on the decreasing side) during different phases of time, it remains unknown whether crime occurrences which are reported in Malaysia are exacerbated by drug use or other risk factors. This is because many people hypothesize that crime is usually caused by PWUDs. In fact, the crime and drug use nexus has not been thoroughly explored and investigated, especially among Police detainees who are caught for crime offenses under the Penal Code (Act 574). The Penal Code is a set of approved laws, which are commonly used to detained people found to have committed crime or engaged in unlawful activities by the Royal Malaysia Police (RMP).

Given the lack of information, this study aims to determine the relationship between drug use and crime among Police detainees in the state of Penang (solely among detainees who were detained in the Southwest and Northwest Districts of

Penang Island) who were caught under the Penal Code (Act 574) for committing crime. It is hoped that findings from this preliminary study can potentially provide a clear insight on the drug use and crime relationship specifically in the state, and in the country generally, to enable RMP and policymakers to develop proper crime prevention interventions in combating crime more holistically.

### **1.5 Study Hypothesis**

Police detainees caught for crime offenses under the Penal Code (Act 574) in the state of Penang are more likely to be tested positive for illicit drug use and engage in violent crime.

### **1.6 Research Questions**

Based on the study problem statement and hypothesis, a total of five research questions have been developed for this study.

1. What is the socio-demographic characteristics of Police detainees caught under the Penal Code (Act 574) in the state of Penang?
2. How drug use causes crime among Police detainees caught under the Penal Code (Act 574) in the state of Penang?
3. What is the criminal profile of Police detainees who are caught under the Penal Code (Act 574) in the state of Penang?
4. Why Police detainees caught under the Penal Code (Act 574) with previous criminal history engages in crime in the state of Penang?
5. What is the drug use status and conviction history of Police detainees caught under the Penal Code (Act 574) in the state of Penang?

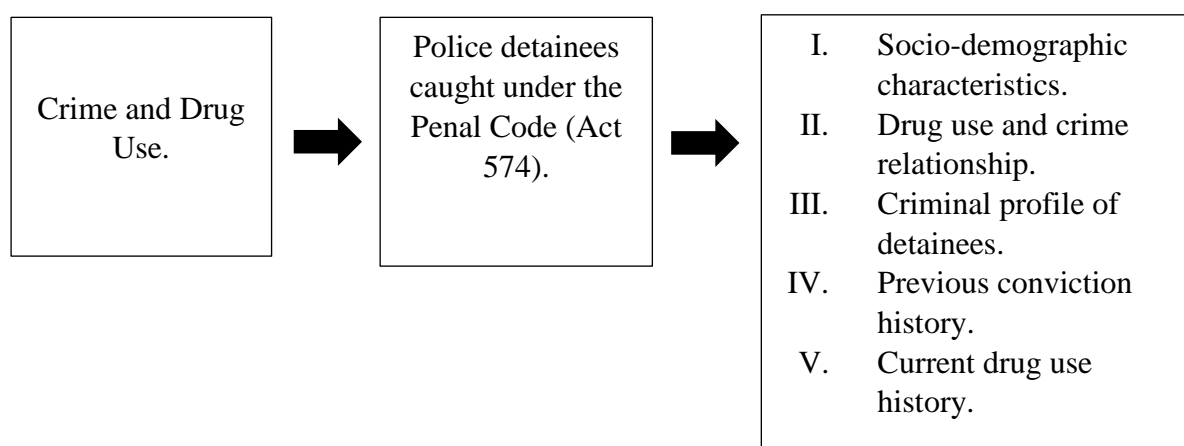
## **1.7 Study Objectives**

The following are the study objectives.

1. To determine the socio-demographic characteristics of Police detainees caught under the Penal Code (Act 574) in the state of Penang.
2. To investigate the link between drug use and crime among Police detainees caught under the Penal Code (Act 574) in the state of Penang.
3. To evaluate the criminal profile of Police detainees caught under the Penal Code (Act 574) in the state of Penang.
4. To examine the association between previous criminal history and violent crime among Police detainees caught under the Penal Code (Act 574) in the state of Penang.
5. To evaluate the link between current drug use history and previous conviction history of Police detainees caught under the Penal Code (Act 574) in the state of Penang.

## 1.8 Study Conceptual Framework

The overarching aim of this study is to examine the drug use and crime relationship among Police detainees caught under the Penal Code (Act 574) in the state of Penang. To determine the drug use and crime interconnection, the following *dependent* and *independent* variables were conceptualized (See Figure 1).



**Figure 1.1,** Conceptual Framework.

## 1.9 Study Significance

This study has many policy and crime prevention implications. First, the Royal Malaysia Police (RMP) can use this study to understand the complex relationship or interplay between *drug use* and *crime* in the country. Second, RMP together with policymakers can develop appropriate crime prevention interventions to address different crime occurrences both property and violent crime in the country. Third, RMP can also design detention protocols to deal with PWUDs, this is to minimize custodial death tragedies involving PWUDs. Fourth, RMP can also look at apparent limitation(s) in the Penal Code (Act 574) and suggest for amendments to penalize repeat offenders more severely, as current penalties may appear inadequate in curbing



crime. Fifth, RMP can also use this finding to enhance and develop more suitable investigational techniques to deal with non-violent and violent criminals with current drug use history. Sixth, findings from this study can also guide RMP to understand how different types of drugs invoke criminal behaviours. Finally, this study can serve as a precedent for prospective studies, since researchers will know exactly the areas where further research might be needed to boost RMP's crime combating skills.

### **1.10 Conclusion**

The study problem statement, study objectives and study significance have been clearly delineated in this chapter. The next chapter is the literature review chapter of the study.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

This is the literature review chapter. All relevant articles deemed appropriate to the scope of study have been identified, analysed, and systematically delineated in this chapter.

#### 2.2 Crime Framework

As maintained by scholars, the Goldstein Tripartite Conceptual Framework on *drug* and *violence* (crime) which was propounded in the 80s has become the cornerstone for researchers to have a more transparent grasp on the *drug use* and *crime* relationship. The three-prong framework pointed that drug and crime can be invoked by three potential possibilities: a. *psychopharmacological*, b. *economically compulsive*, and c. *systemic* (Goldstein, 1985). Based on the psychopharmacological domain or model, people who use drugs (PWUDs), be it for a short or long-term period, may become excitable, irrational and exhibit violent behaviour. In other words, people may commit crime since they are under the influence of narcotics and may have lost their conscience (unaware of what they are doing) (Goldstein, 1985). Scholars have also deliberated that, for instance, the use of opiate is unlikely to lead to violence, but users may commit crime to support their addictive behaviours (Goldstein, 1985). Conversely, PWUDs may also choose to use drugs (narcotics) to pacify their violent tendencies (Goldstein, 1985). For example, some individuals may want to self-medicate their violent behaviour by using sedative-types of substances (heroin, tranquilizers, benzodiazepine) (Goldstein, 1985). Extracting an excerpt from Goldstein (1985) – it is shown that rapes that occurred while the victim is intoxicated, can cause

the victim to suffer from serious physical injuries. Psychopharmacological violence can also lead to domestic violence and child abuse. It can also occur on streets, public places, as well as workplace (Goldstein, 1985).

Crime can also be triggered by economic compulsive factor. Based on the model, PWUDs may have a strong proclivity to engage in crime (e.g., robbery, house breaking, vandalism, shoplifting, stealing, etc.), to earn illegal income to support their expensive drug using behaviours (Goldstein, 1985). Their engagement in crime is primarily driven by motivation to obtain money for purchasing drugs. Researchers concurred that that PWUDs may avoid committing violent crime if they have a viable choice (opportunity) to engage in non-violent crime (Goldstein, 1985). This is because violent crime is dangerous and has more risk, and if offenders are caught, they can be punished with a more punitive jail sentence (Goldstein, 1985). It is reported that PWUDs are often caught for narcotic offenses than violent crime such as property crime (Goldstein, 1985).

While the third domain of Goldstein's framework also highlighted systemic violence as a risk factor for crime perpetration. Systemic violence usually stems from drug distribution networks (Goldstein, 1985). For example, systemic violence can result from many situations such as 1) territorial disputes staged by rival drug cartels, 2) assaults and homicides perpetrated as a principal to discipline and instil loyalty to gang leaders, 3) violent retaliation for breaching approved conditions set by superiors, 4) forced disappearance or elimination of informers, 5) torturing or punishing someone for selling adulterated drugs, 6) taking revenge for not settling outstanding debts, 7) disputing when drugs are not fairly divided, and 8) committing violence to preserve dominance or supremacy (Goldstein, 1985). People who use drugs (PWUDs) gradually progress in their drug-using careers and get enmeshed with systemic

violence. According to Goldstein's hypothesis, cartels commonly uphold to the "*code of the streets dictates that blood cancels all debts*" (Goldstein, 1985). To put it briefly, if a drug dealer has "messed up with the money" he/or she will have to face dire consequences, to some extent, to amortize their debts (punishment for violating defined norms) (Goldstein, 1985).

### **2.3 ATS Use and Crime**

It is reported that the severity of crime can be classified based on the types or classes of drugs perpetrators usually use while crime is committed. Lately, researchers have begun to highlight the link between amphetamine-type stimulant (ATS) use with crime (McKetin et al., 2020). ATS is a stimulant drug and is reported to exert profound effects on the central nervous system (CNS). Stimulants are commonly prescribed by doctors for the treatment of attention-deficit hyperactivity disorder, obesity, and narcolepsy (excessive daytime sleepiness) (Tyner and Fremouw, 2008). Boles and Miotto (2003) have shed some light on the connection between stimulant (methamphetamine) use and violence. Their study found stimulant use can cause violence through *pharmacological* (e.g., agitation, psychosis, and paranoia) and *systemic violence* (from botch drug trafficking deals) (Boles and Miotto, 2003). Though ATS use is purported to cause violent behaviour, Tyner and Fremouw (2008) concluded that ATS link with violent crime or crime perpetration remains vaguely documented. However, the use of stimulants such as methamphetamine (specifically crystal meth) and amphetamine are shown to provoke violent behaviour in ATS users (McKetin et al., 2020). Frequent methamphetamine consumption is shown to augment crime occurrences (Gizzi and Gerkin, 2010). It is reported that crime is usually driven among methamphetamine users by the exorbitant price of drugs (Peacock et al., 2019). Though the current weight of evidence appears scarce or debatable to support the

connection between methamphetamine use with violent crime (Barrett et al., 2013), however, it is clearly found that people who use methamphetamine have higher odds of experiencing violent behaviour (McKetin et al., 2019; Foulds et al., 2020).

Findings from a longitudinal study from Australia which was conducted among people who use methamphetamine (who were dependent on it), crime was more likely to occur when people with methamphetamine use history used methamphetamine compared to the days when they choose not to use is (McKetin et al., 2020). The risk of crime was 13.2 times higher during the months/periods when methamphetamine is administered than days when it is not use (McKetin et al., 2020). Findings from the study also show people who use methamphetamine were prone to commit property crime, violent crime, and drug dealings (McKetin et al., 2020). In fact, it is also reported that those who use methamphetamine frequently (more than 16 days per month) were more likely to commit crime than those who reported lesser days of methamphetamine use (McKetin et al., 2020). This suggest that the relationship between methamphetamine use, and crime was dose related (McKetin et al., 2020). Taken together, it can be inferred that methamphetamine use was associated with significant increases in crime (McKetin et al., 2020). In addition, another similar study which was conducted among people who have used methamphetamine in New Zealand found methamphetamine was an independent risk factor for violence perpetration and victimization (Foulds et al., 2020). Foulds et al. (2020) found there was a dose response relationship between methamphetamine use and crime perpetration – meaning those who reported to have used methamphetamine on a weekly basis at any time (when the respondents were between 18 to 35 years of age) had significantly elevated odds of engaging in violence compared to those who reported using methamphetamine infrequently (less often) or have never used it before.

Moreover, findings from an American study which was conducted among ATS users in California, who were receiving treatment for their substance use disorder (SUD) found a majority of clients perceived that their stimulant (methamphetamine) use have led to violent behaviours (Brecht and Herbeck, 2013). Conversely, findings from the study also emphasized that violent criminal behaviour have no connection with stimulant use, since most respondents have already experienced a tendency to engage in violent behaviour prior to stimulant initiation (Brecht and Herbeck, 2013). Findings from a review article by Dawe et al. (2009) summarized that stimulant use is linked to “increased levels of aggression”. Dawe et al. (2009) clearly shown that stimulant users may have an impaired capacity to control or contain aggressive impulses, and experience increased positive symptoms of psychosis, chiefly paranoia, that may adversely contribute to a perception that the environment is hostile (a threatening place) and is dangerous to the user. Brecht and Herbeck (2013) also underlined that stimulant user usually felt violent while being under the influence of stimulant because it provides a numbing effect on their senses. Nevertheless, a study from Australia managed to also investigate the relationship between frequency of stimulant use and psychological problems with violent behaviour (McKetin et al., 2014). The study indicated that people who use stimulant regularly than those who reported using it irregularly (violent behaviour increased from 10% during abstinence to 60% during periods of heavy use), have a higher tendency of exhibiting violent behaviour (McKetin et al., 2014). Notably, the study found the risk of violent behaviour became elevated with or when aggravated by psychotic symptoms, as well as with heavy alcohol consumption (McKetin et al., 2014). On top of that, another study from Australia which compared levels of *violent offending* and *victimization* between methamphetamine and heroin users – the study found methamphetamine

users had significantly higher odds of committing violence than those who reported heroin use, while both groups were exposed to victimization (becoming victim of violent crime) (Darke et al., 2010). In summary, the study found regular consumption of methamphetamine seem to be associated with an increased risk of violent offending (Darke et al., 2010).

Despite ATS having a direct link with violent behaviour and crime, Bennett and Holloway (2005) found crime perpetration can also be compounded by multiple drug use. Briefly, people who use or *co-use* multiple drugs (narcotics) are prone to engage in crime. A study from South Africa which was conducted among offenders in a reintegration centre, found that those who had severe drug abuse problem have a higher attraction to violence and are vulnerable to committing offenses (Sommer et al., 2017). As stated by Bayer et al (2007), aggressive behaviour can be galvanized by the desire to defend oneself against an intimidating threat, or to take revenge (retaliate) against those responsible for causing trauma. In fact, as argued by Elbert et al. (2010) aggressive behaviour can be intrinsically rewarding (can be coined as appetitive aggression), as offenders may get thrilled from being violent. Findings from Sommer and associate (2017) study laid out that though a large percentage of offenders reported to have never used drugs prior to the violent offenses, 40.3% reported that they have used drugs “most of the time” or “every time” before perpetrating violence.

#### **2.4 Crime Perpetration among People Who Use Drugs (PWUDs)**

People who use drugs (PWUDs) are prone to engage in crime. A study from America (U.S) which was conducted among people who use stimulants (methamphetamine) found only a moderate percentage of users committed violence while being under the influence of methamphetamine use (Sommers and Sommers,

2006). People who use stimulant are more likely to have committed more violent crimes (e.g., domestic violence, violence stemming from drug activities, gang fights and random acts of violence such as road rage, stranger assault, etc.) with methamphetamine use (Sommers and Sommers, 2006). Sommers and Sommers (2006) also found that stimulant users tend to carry dangerous weapons, and are usually arrested for violent crime (e.g., robbery, murder, and assault). Besides violent crime, stimulant users are also commonly engaged in non-violent crime (Sommers and Sommers, 2006). This suggests that stimulant users can engage in violent and non-violent crime. Similarly, another study from America (U.S) by Sommers and Baskin (2006) who interviewed out-of-treatment stimulant users found only a small percentage of respondents committed violence (crime) under methamphetamine influence regularly.

Cartier and associates (2006) investigated the criminal behaviours of methamphetamine users in the U.S and found that methamphetamine use was associated with *recidivism* (return to custody for a crime offense). The study found that methamphetamine users are usually arrested and jailed and are more likely to commit crime in the last 30 days during their parole than their non-methamphetamine using peers (Cartier et al., 2006). Contrastingly, findings from a Canadian study found methamphetamine use have no significant association with *violent recidivism* (Spivak et al., 2020).